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Using machine learning to analyse EEG brain signals for inner speech detection

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Abstract

Research on brain-computer interfaces (BCIs) has been around for decades
and recently the inner speech paradigm was picked up in the area. The
realization of a functioning BCI could improve the life quality of many peo-
ple, especially persons affected by Locked-In-Syndrome or similar illnesses.
Although implementing a working BCI is too large of a commitment for
a master's thesis, this thesis will focus on investigating machine learning
methods to decode inner speech using data collected from the non-invasive
and portable method electroencephalography (EEG). Among the methods
investigated are three CNN architectures and transfer learning. The results
show that the EEGNet architecture consistently reaches high classification
accuracies, with the best model achieving an accuracy of 29.05%.

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Contents

Chapter 1

Introduction

1.1 Background

Research on brain-computer interfaces (BCIs) started in the 1960s and there has been an increase of interest in the area lately. The areas in which BCIs could be used are countless, but most prominent is the possibility to enable people with disabilities to interact more freely with the world.

Inner speech is when a person thinks internally which can happen consciously and unconsciously. Daydreaming or having an internal discussion with oneself are examples of this. Inner speech detection uses brain data from invasive (i.e., electrocorticography (EcoG) [1][2]) and non-invasive methods (i.e., electroencephalography (EEG), functional magnetic resonance imaging (fMRI) [3], magnetoencephalography (MEG) [4] [5]). In this thesis, the emphasis will be on the non-invasive method of using EEG brain data to detect inner speech with deep neural network techniques. Previously EcoG has been used in research on inner speech decoding [6], however that is a method that requires sensors to be implanted inside the skull, thus making it risky. One new paradigm that has popped up is inner speech decoding on EEG signals. Methods like support vector machines and Spatial Patterns combined with ANN's have shown promising results [7] [8]. These start by extracting feature vectors and then training a classifier on them. A convolutional neural network (CNN) does feature extraction with a series of convolutions and then feeds these into a classifier. This matches the methodology of previously used methods, thus CNNs are a great choice for this as the network learns to do the feature extraction and classification at the same time.

1.2 Problem Description

Currently EEG decoding is in the research stage, one of the end goals being that it can be used in to create a BCI which could be utilised in healthcare and commercially. Of

course this would require any decoding technique to reach accuracies above 90% as no one would want to use something that only works 50% of the time. This thesis will not implement a working BCI, instead it will investigate different machine learning methods to increase the performance of EEG decoding models.

In 2021 a new dataset containing EEG recordings from ten subjects was published by Nieto et.al [9]. The dataset used a much higher number of sensors and is the most detailed one to date. This opens up for opportunities to investigate the inner speech paradigm with EEG signals further. Since us humans do not fully understand human brain signals the idea is to let a machine learning model try to find patterns in them instead. This thesis work will include the following steps.

The experiments will test three different model architectures and a few different methods to answer the following research questions.

- **Q1:** How does downsampling the data affect the training and performance of the models?

- **Q2:** Does using only the action interval increase the performance of the models?

- **Q3:** Can the classification accuracy be increased by using transfer learning and which of the transfer learning methods works the best?

- **Q4:** Which of the proposed model architectures perform the best on the Nieto et. al dataset?

1.3   Motivation

The impact of a simple working BCI would be monumental as there are a vast number of areas where it could be used. Generally speaking, a BCI could replace any of the "interfaces" to our surroundings. It can replace our voice, our motor functions and more. The following are some examples of what a BCI could be used for.

- People that have lost their ability to communicate verbally with the surrounding, i.e., people in Locked-In-Syndrome [10]. The results in [11] show exactly how important this ability can be for people.

- Control over a smart house, a computer, or any other technology could be implemented using a BCI.

- A new interface to virtual reality.

These applications assume that the BCI needs to be portable and easy to use. Here EEG has a great advantage over EcoG or magnetic resonance imaging (MRI) scans

as it is portable and does not require any risky procedures. Another advantage is that the user only needs to have a functioning brain, nothing else. In the example of ACAT (Assistive Context Aware Toolkit) the user needs to be able to for example blink, which is not required in a BCI [12].

1.4 Challenges

Compared to EcoG where the electrodes are placed directly on the surface of the brain, EEG has a low signal-to-noise ratio. Even though the data collection had many error preventing methods the dataset can still contain a lot of unclear data. It can come from unfocused subjects, wandering thoughts, noise and many other sources.

Since us humans do not yet have enough knowledge of exactly how the brain works to be able to know for sure what connections a neural network finds, it's more of a black box and therefore it could react on the wrong things. This is explained more in chapter 6.

1.5 Ethics

This work contributes to the progress of non-invasive BCIs, thus avoiding the ethical questions surrounding the perilous procedure of inserting devices into the brain. However there are still some ethical concerns left. Many new inventions and technologies can be used in a way that they are not intended, in some cases with malicious intent. This is something that is hard to avoid entirely and these inventions can help many people, thus perhaps making the risks with them worth it. Despite this, the thought of anyone being able to discern your inner dialogue is quite frightening.

The machine learning models trained for inner speech decoding in this thesis are subject dependent, meaning that a model trained on one persons brain signals has a hard time decoding another persons brain signals. Training a model requires labeled recordings of when the person thinks of a certain word. Lastly, in order to decode a persons inner speech the person would need to wear an EEG setup. With these three facts in mind, it would be unfeasible to decode a persons brain signals without them knowing and consenting. An exception to this is if a person willingly has provided all the required data, and this data ends up being used in a non-ethical way. Hence it is of great importance that any data recorded from this kind of technology is protected.

The dataset used in this thesis is a publicly available dataset, the subjects are anonymous and willingly participated.

1.6   Scope of work and delimitations

This thesis work is conducted with a research purpose, quite far away from any usable BCI application. This is because creating a fully working BCI is a monumental challenge. The data used was collected in a shielded environment with as little noise and disturbances as possible, which does not reflect real life scenarios of a potential user. Data recorded with fully healthy subjects could also differentiate from data from disabled subjects.

The networks will be trained to do non real time decoding. They will be trained on a finite sequence of data instead of a constant stream (online/real time). The data is pre-recorded and the thesis will focus on the preprocessing and decoding techniques, not the data collection. The evaluation will not measure the amount of computational resources used, but will address it in general.

1.7   Thesis structure

The thesis is divided into seven chapters where the first chapter contains some background of the research area followed by the problem description of the thesis. Chapter 1 also contains a short motivation that describes the benefits this research could have, lastly some challenges and delimitations are addressed. Chapter 2 gives an overview of related work in EEG decoding and describes the current state of the art on the Nieto et. al dataset. Chapter 3 contains a bit of theory around EEG, artificial neural networks (ANNs) in general and CNNs in particular. Chapter 4 describes the dataset and explains the methods used for preprocessing the data as well as the training and evaluation methods of the models. The model architectures are visualised and a description of all experiments is provided. The results are presented in chapter 5, each architecture in its own section. Chapter 6 provides some insights and observations of the results along with discussion about what affects the results. Answers to the research questions along with some ideas for future work can also be found in this chapter. Lastly the conclusions of the thesis can be read in chapter 7.

1.8   Contributions

This thesis thoroughly examines machine learning methods for decoding EEG data with the goal of assisting the progress towards a working BCI. The examination includes three CNN architectures, transfer learning and two variations of data preprocessing. The results show promise however the need for more precise data is pressing.

All code implemented for the thesis is publically available for anyone who wants to reproduce the results or continue the work. The same goes for the results from all experiments

along with graphs and confusion matrixes, available for future examination.

Chapter 2

Related work

Previous work has shown that inner speech activates regions associated with language comprehension primarily located in the left hemisphere [13]. Imagined speech, which is a very similar paradigm, was identified to activate Wernicke's and Broca's area [14].

Cooney et. al has published several papers on the subject of decoding EEG signals. In [15] they do an extensive evaluation of which hyperparameters give the best results for EEG classification. Their trials find good hyperparameters for the Shallow CNN and Deep CNN [16] as well as EEGNet [17]. They found 0.01 learning rate (LR) to be the best across all architectures except for EEGNet, which benefitted from a higher LR. When it comes to epochs they found that all architectures except EEGNet were improving up to 80 epochs, however EEGNet did not get much better after 20 epochs. According to their experiments, there was no significant findings pointing to either of the loss functions, cross entropy and negative log likelihood (NLL). Shallow and Deep CNNs performed best with LeakyRelu activation function while EEGNet worked best with exponential linear unit (ELU). They also compared some older methods that have shown good results before such as SVM, Random Forests and RLDA. Compared to these, all of the CNNs performed better.

In another paper [18] Cooney et. al investigates the impact of transfer learning (TL) on EEG datasets. They try fine tuning and feature extraction, both of which gave better classification accuracies than non-transfer learning. In this paper they recommend more work do be done with TL.

In [8] Singh et. al presents an extensive experiment where many different classic machine learning methods are used for EEG classification. They all follow the same pattern; first find/create feature vectors based on the EEG signal, then feed these into a classifier to get the final prediction. Many of the winners of the BCI competition [19] used similar methods, first finding features and then classifying.

Schirrmeister et. al [16] proposed the deep and shallow CNN architectures for EEG

signals and Lawhern proposed the EEGNet architecture [17]. They all have the concept of spatial and temporal convolutions to find patterns and features in time and space respectively.

Currently there is only one paper published where the Nieto et. al dataset is used for Inner speech classification. In [20] they use the inner speech paradigm, with only the sensors from the left side of the head to train a classifier, EEGNet, to differentiate between the four classes. They achieved a best performance of 29,67%. They used the preprocessing provided by the authors of the dataset [9] and an implementation of EEGNet [17] publically available on GitHub [21]. During training four-fold cross validation was utilised and seemingly no test set is used, but no other details are given.

Chapter 3

Theory

This chapter introduces the basic knowledge required to understand the thesis work. Firstly, the advantages and drawbacks of EEG is explained more in depth. Secondly the inner workings of ANNs and CNNs are explained. Thirdly, a machine learning method called transfer learning is introduced along with a motivation as to why it is used. Lastly, a performance metric is described.

3.1 Electroencephalography

Electroencephalography (EEG) is a non-invasive way to measure electric activity in the brain by placing electrodes on the scalp. The first paper on EEG in humans was published in 1929 by Hans Berger, making EEG almost a century old. Although it is a quite old technique researchers still find new ways to improve or use it [22].

The electrodes can capture postsynaptic potential changes that result from neurotransmitter release between a presynaptic axon and a postsynaptic dendrite. To be exact, EEG measures the voltage changes in the soma (dipoles). To measure these a small electrode made from a metal disc and a small cable is attached to the scalp, connection is improved by adding conductive gel between the electrode and the scalp.
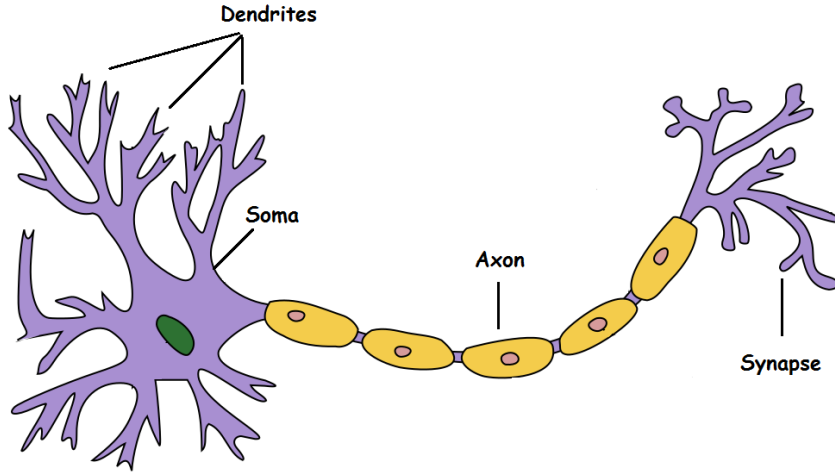
Figure 3.1: Model of a neuron, source: [23]

It is important to note that EEG cannot measure the activity of a single neuron, instead it detects potential changes in larger groups of neurons. One of its weaknesses is that it has to be very sensitive to be able to pick up on the very small potential changes, thus it also picks up artefacts from non-brain activity sources such as blinking or moving. EEG also suffers from low signal-to-noise ratios since there is a lot of materia between the electrode and the source of the potential it measures.

The measurement of EEG requires some reference or base. This often comes from electrodes placed on some other part of the body considered to have neutral voltage, this can of course never be exactly neutral. The idea is to have a reference signal that has as little brain or nerve potentials as possible to use as a baseline.

Other forms of electrography used in this thesis work are electrooculography (EOG) and electromyography (EMG). EOG electrodes are placed around the eyes and temples to detect and record eye movements. EMG electrodes can be placed near muscles to detect and record electrical potential of the underlying skeletal muscles. Lastly there is an intra-cranial version of EEG called EcoG where electrodes are implanted directly onto the surface of the brain. This method has a much higher signal-to-noise ratio but comes with higher risks.

3.2   Neural networks

Neural networks or Artificial Neural Networks are a machine learning method meant to imitate how biological neuron networks work. The networks are computational models built up of layers of artificial neurons. Each neuron connects with a weight to all neurons in the next layer. Figure 3.2 shows an artificial neuron, its output will be calculated according to equation 3.1.
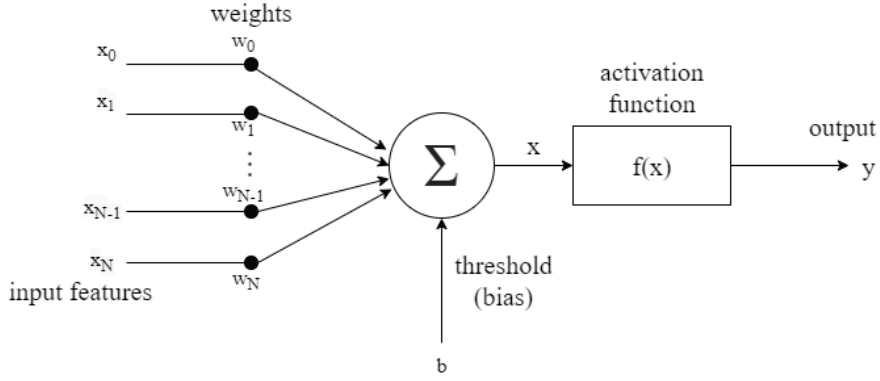
Figure 3.2: Model of a perceptron which is an artificial neuron.

Here x_i is the output of another neuron and w_i is the weight of the connection to that neuron. An activation function, here denoted by $f(x)$ is used to introduce non-linearity to the network. This computation moves through the network, passing each layer until an output is produced and is called a forward pass.

$$y = f\left(\sum_i w_i x_i + bias\right) \tag{3.1}$$

The process of training a neural network is in essence nudging these weights in the right directions until the model performs better. Most commonly an algorithm called backpropagation is used to alter the weights. In short it will first use a loss function that calculates how far from the ground truth the networks guess is, and then calculate the derivative of the loss with respect to the weights $\frac{dL}{dw_i}$. This will indicate how to change the weights in order for the next forward pass to be a better prediction. There are a number of hyperparameters that can be changed to alter the model and the computations it does. The ones that will be used in this work are bias, batch size, dropout and learning rate. Bias can be seen in equation 3.1, learning rate is used to scale the weight changes of backpropagation. Batch size controls how many trials each training step should include, as the backpropagation algorithm is performed after each batch a smaller batch size will increase training time. The dropout parameter is used to make the model generalise better by disabling a percentage of the artificial neurons each training round. In this thesis we will focus on CNNs as described in section 1.1.

3.3 Convolutional neural networks

CNNs are a sub-type of artificial neural network. They are most commonly used to classify images and other grid-like data. Much like an artificial neural network a CNN is built up of layers, consisting of convolutional layers, pooling layers and one or more normal neuron layers at the end that act as a classifier. The convolutional layers have

a kernel, also called a filter, of a given size, this filter will slide across the data matrix and perform convolution calculations. The convolutions are what find features in the data, each layer finding higher level features than the previous. An easy example is with an image, the first convolutional layer could find a straight line, the next layer could combine several straight lines to a stripe pattern, this pattern could be identified to be whiskers, and so on. Pooling layers also have kernels, they are often used to downsize the data with picking the highest value (max pooling), or an average of all values (mean pooling) within the kernel size. CNN's are chosen in this work since they are capable of finding high level features in the data and use these to classify the trials.

3.4   Transfer learning

Transfer learning is a method in machine learning in which a model trained on one dataset is used as a base initialization for another dataset. This has been used quite a lot in image recognition, where large pretrained models are available for transfer learning on similar datasets. One of the benefits with this base initialization really shines when there is only small amounts of data available for a given task. Since there is not much data to train on, it is a great boost to already have a model that is trained on some similar data or task. There are two main ways of doing transfer learning, namely feature extraction and fine tuning. In feature extraction the initial layers are *frozen*, meaning that they are not trained. This means that only the latter parts of a model are trained, including the classifier. Most often this method is used when the pretrained model is trained on data that is similar to the data that is being used in the transfer learning, but the classes are different. Fine tuning is the opposite of feature extraction as it *freezes* the final layers and trains the initial ones. This is useful when the classes and high level features are the same for the pretraining dataset and the dataset that is used in the transfer learning.

Transfer learning is tested in this thesis for two main reasons. First, the dataset is very small, only containing between 180 to 240 inner speech trials per subject. As mentioned earlier it is useful to have a half decent initialization when so few trials are available for training. Secondly, in [18] transfer learning was successful in increasing the classification accuracies.

3.5   Confusion matrixes

A confusion matrix is in essence a table layout which visualises the predictions of a model, and hence, its performance. It is a square matrix of dimensions $[N \ x \ N]$ where N is the number of classes. Each row represents the correct class and each column represents the predicted class. For each prediction that the model does, the number at

position [t,p] is incremented by one. Here t is the true class and p is the predicted class. Ideal performance will produce a confusion matrix with zeroes except on the diagonal. Confusion matrixes allow us to see if the models are making any misinterpretations that perhaps are not visible in the accuracy.

Chapter 4

Methods and data

This chapter describes the dataset and the preprocessing that the authors of the dataset did, as well as my additions and considerations. Secondly all experiments and the experimental setup is described, lastly the methods used to evaluate the results are explained.

4.1 Dataset

The dataset used is "Thinking out loud" by Nieto et al. [9] which was published in 2021, hereafter called "the dataset". Selected words/classes were *arriba, abajo, derecha, izquierda (up, down, left, right)*.

The dataset contains recorded EEG from 10 subjects with three different paradigms, which are inner speech, pronounced speech and visualized condition. A BioSemi ActiveTwo high resolution bipotential measuring system [24] was used to record a total of 136 channels, where 128 were EEG. Out of the remaining 8 channels two were EMG channels that captured muscle activation and mouth movement, four were EOG channels meant to detect eye movement and blinking. The last two were placed on the earlobes of the subject and used as reference signals. Data collection was at 24 bit resolution with 1024 Hz sampling rate.

The software used to record was ActiView, which facilitates a way to check the quality of the data, including the impedance (resistance) of the incoming data. A threshold of 40Ω was used and all electrodes where checked to have impedance less than this. At the time of recording a 208 Hz low-pass filter was used.

All subjects had no prior experience of BCI and were healthy with no hearing or speech loss. Four females and six males participated, all were right-handed and spoke spanish. Subjects mean age was 34 years old with std ± 10 years.

Each subject performed between 475 and 570 trials which were all recorded during the

same day, this to keep the surrounding conditions of the subjects lives as similar as possible throughout the dataset. The recording was split into three sessions to allow the subject some rest breaks. The variation in the number of trials is explained by some of the sujects choosing to end the recordings early as they stated they were getting tierd. There was approximately 2 hours of recorded data per subject.

Each trial followed the schedule in figure 4.1, starting with concentration, followed by showing the cue for which word to perform one of the three actions on. The subject then performed the action (inner speech, pronounced speech or visualized condition) before being allowed to relax before the next trial starts.
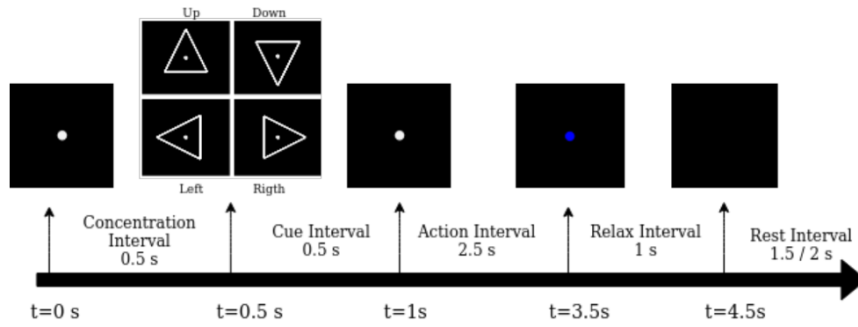
Figure 4.1: Figure explaining the steps of each trial, source: [9].

The authors took several steps to prevent noise and artefacts in the EEG signals during recording. All recordings took place in an electrically shielded room where the subjects were asked to stay still and avoid blinking and moving their eyes during the trials. As mentioned in the delimitations 1.6 this gives good conditions for data gathering, but has the downside of being quite far away from the every day situations in which a BCI could be used.

4.2   Preprocessing

The preprocessing follows the general methodology presented in [25]. Most of the preprocessing was done utilizing the Python MNE library [26]. Even though the BioSemi ActiveTwo has active electrodes that are capable of recording data without a reference signal it can still be beneficial re-reference the EEG signal as mentioned in section 3.1[27]. Data from the two electrodes placed on the subject's earlobes was used as a reference signal. This steady potential is used as a baseline which all other potentials are relative to, eliminating noise and data drift [28].

A zero-phase bandpass finite impulse response (FIR) filter between 0.5Hz and 100 Hz was applied to remove non-biological noise. It is a broad filter which will keep the data as raw as possible which opens up for future experimentation of the preprocessing. A

50Hz notch filter was also used, dampening or removing frequencies close to 50Hz. The authors of the dataset downsampled the data from 1024Hz to 254Hz.

After the filtering of the raw data it was split into 4.5 second trials. Each trial was stored in a matrix of dimensions $[136x1143]$ where $136 = 128 + 8$ is the number of electrodes and $1143 = 4.5 \cdot 254$ is the number of samples.

As mentioned in 3.1 EEG data is prone to artefacts so in order to remove these, Independent Component Analysis (ICA) was used on all 128 channels. Independent component analysis is a blind source separation technique which extracts the original signal components from a mixed signal. Blind source separation means that it does need to know anything about the components beforehand. This trait is great as we do not know anything about the individual components of the EEG signal.

ICA transforms a set of signals into a maximal independent set, by the method described in [29].

> Given a measured signal X find a matrix W such that the set s_i are maximally independent. Meaning that the components should share minimal mutual information.

$$s_i = \sum_j w_{ij} x_i \qquad (4.1)$$

ICA is used to split the EEG signals into their additive components. Each component is inspected and compared to data from the EMG and EOG channels to find any potential correlations. If a component is correlated to EMG or EOG activity, then it is probably an artefact from some eye or mouth movement. The components that were deemed to have a correlation to EMG and EOG events were excluded when the EEG signal was reconstructed. The result is a signal where artefact sources have been filtered out.

In addition to the removal of EMG and EOG related sources with ICA they also control the EMG to detect mouth movement during inner speech trials. Using the single threshold method they mark any trial where the EMG surpasses a threshold as contaminated. The baseline recorded at the beginning of each session is the baseline and all activity above that counts towards the threshold. They calculate the threshold with a sliding window of size 0.5 seconds. This resulted in 2.5% of the trials being marked as contaminated.

The final preprocessed dataset has the trials as matrixes of dimension $[128x1143]$ in a tensor. Along with each trial comes additional information in a $[1x4]$ vector on this format [sample   class   condition   session]. Here, *sample* is the sample that the trial started at, which can be seen as a timestamp.

During this thesis work the preprocessing was re-done with one changing factor. The

data was kept at 1024Hz in an attempt to keep all information. Due to a higher sample rate the dimensions of the matrixes for the 1024 Hz data are $[128x4609]$. The preprocessing that did not downsample the data took around two days of computation time to complete.

4.3   Experiments

To answer the research questions in section 1.2 the experiments shown in the list below were performed. Three model architectures called Shallow CNN, Deep CNN and EEGNet are used in the experiments, these are described in section 4.5.

- Hyperparameter tests to find the best batch size, bias, dropout and learning rate.

- Comparison between the full trial and the action interval.

- Different tweaks to the architecture.

- Transfer learning tests comparing fine tuning and feature extraction.

As mentioned in 4.2 there are two sets of data with slightly different preprocessing, one being downsampled to 254 Hz and one keeping its original sample rate 1024 Hz. All of the experiments described in the list above are run on all models and for both sets of data. This is to investigate whether downsampling the data to 254 Hz leads to any loss of information, hence also a decrease in classification accuracy. Hereinafter these datasets will be called the downsampled and non-downsampled datasets. The hyperparameter and interval experiments are the same regardless of model architecture. Batch sizes of 4, 10 and 20 were tested and learning rates of 0.1, 0.01, 0.001 and 0.0001 were tried in the learning rate experiments. In the bias experiments only the bias for the classifier in each model was tested, comparing bias *True* and *False*.

The matrix for each data sample, also called trial, contains all recorded data from the entire trial shown in figure 4.1. This contains rest, visual que and action interval. As the action interval is the interval where the subject actively thinks about a given word we wanted to investigate whether training and testing on only the action interval could improve the classification accuracy. The hypothesis was that the relax intervals, where the subject could think about anything could mislead the network or act as noise. Thus experiments comparing the full trial and the action interval were conducted. These were run on identical hyperparameters, save for the classifier size as the data had different dimensions.

A few architectural alterations were tested for each model. The Deep CNN architecture had the most tweaks: increasing the number of filters, reducing filter sizes, increasing filter sizes and combinations of those. Adding another layer to the classifier was also

tested, making it a two layer softmax classifier. The Shallow CNN architecture had two changes: increasing the number of filters and using LeakyReLU activation function instead of ELU. Lastly EEGNet was tested with an increased number of filters.

In [18] transfer learning showed promise as they were able to increase classification accuracies with transfer learning. Due to time constraints no hyperparameter optimization was done with this method, instead the hyperparameters that gave the best result in previous experiments were used. Since all of the best performing models were trained on the downsampled data, all transfer learning was done on downsampled data.

For all model architectures three methods were compared: single subject training, fine tuning and feature extraction. For each architecture and subject one model was pretrained using all other subjects data. For example, when pretraining a model for subject one, all inner speech trials from subjects two to ten were merged into one array and that data would be used to pretrain the model. The transfer learning itself was done with the cross validation loop described in section 4.4.3 just like all intra-subject training. The one exception being that instead of creating a new randomly initialized model, the pretrained model was loaded in.

4.4 Experimental setup / Code

In this section I will describe the code setup for the experiments. Most of the code was written as re-usable methods such that it can be used throughout all experiments. All of the code can be found at https://github.com/lisajonsson/inner-speech-detection.

4.4.1 Data handling utilities

The file *datahandler.ipynb* contains all utility functions for data handling, this includes loading subject data, extracting labels, selecting the inner speech trials, moving data to device (gpu), extracting only the action inverval and a function to print information about pre-split data. All of these have been written in such a way that they can handle both 254 Hz and 1024 Hz data.

4.4.2 Training, validation and testing

The bulk of the *train_model.ipynb* file is a method used for training a model. This function will train the given model for a number of epochs. It will keep a snapshot of the model that has the highest validation accuracy and return this. In addition it will print a graph that displays the train loss, validation loss and validation accuracy of the training. The model training is configurable with parameters such as epochs, batch size, loss function and optimizer. Aside from the model training function there are also

methods for accuracy checks, getting a confusion matrix along with saving and loading a model.

4.4.3 Experimental crossvalidation loop

Each experiment runs in its own Jupyter notebook [30] where all plots and training information is also saved.

These experimental files look very much alike as they all run the *cross_validation_loop* with different parameters. The cross-validation loop will use the functions mentioned above to perform one or more experiments, doing the following for each subject.

- Load subject data, extract inner speech trials and labels. In action interval experiments it will also isolate the action interval data.

- Perform a five-fold stratified split to select test data and then choose 20% of the training data for validation.

- Train a new model for each of the five splits.

- Calculate train, validation and test accuracies for the model returned from the train_model function. Also print a confusion matrix of the models performance on test data.

- Write all results to a file. This includes accuracies from all five folds as well as calculated averages.

All of the experimental files have a name starting with either "1024EX" or "EX" in the github repository for those curious to see all graphs and confusion matrixes.

4.5 Classification architectures

CNN architectures were chosen since they do the same calculations as previously successful methods [8]. These methods most often start by finding feature vectors, and then training a classifier on those feature vectors. CNN's perform the same steps by first finding features with the convolutions, and then feeding these into a classifier. An advantage of CNN's is that they train both feature finding and classification at the same time. Experiments were done on three different CNN architectures. These are based on architectures previously presented by [17] and [16]. Code for all three architectures can be found in the github repository.

The figures that show the architectures are color coded such that yellow boxes represent convolutional layers, red boxes represent intermediate layers such as batch normalization

and pooling, and blue boxes represent classifiers. Next to each convolutional layer will be text such as $a(b,c)$, here a is the number of filters, and (b,c) is the kernel size.

4.5.1 Shallow CNN

The idea behind the Shallow CNN architecture is to capture both spatial and temporal relationships in the data. Spatial meaning the "space"-dimension and temporal meaning the "time"-dimension. In our case space is the 128 electrodes. In the data each column in the matrix is a timestamp of all 128 electrodes, so we can imagine the x-axis being time and the y-axis being space.

Now, we want to find correlations in both space and time and we will use two convolutional layers to achieve this. The first convolution in figure 4.2 is the temporal convolution, spanning 25 time steps with the (1,25) kernel. The second convolution is the spatial convolution, spanning across the data from all 128 electrodes for each time sample with the (128,1) kernel. The result from these two convolutional layers is put through batch normalization, ELU activation function, dropout and average pooling with a (1,75) kernel. Lastly it's fed into a softmax classifier which produces the final prediction. The number before each kernel size represents the number of filters of that convolution.

40 (1,25)

40 (128,1)   **batchNorm
ELU
dropout
meanpool
(1,75)**

classifier

right

left

down

up
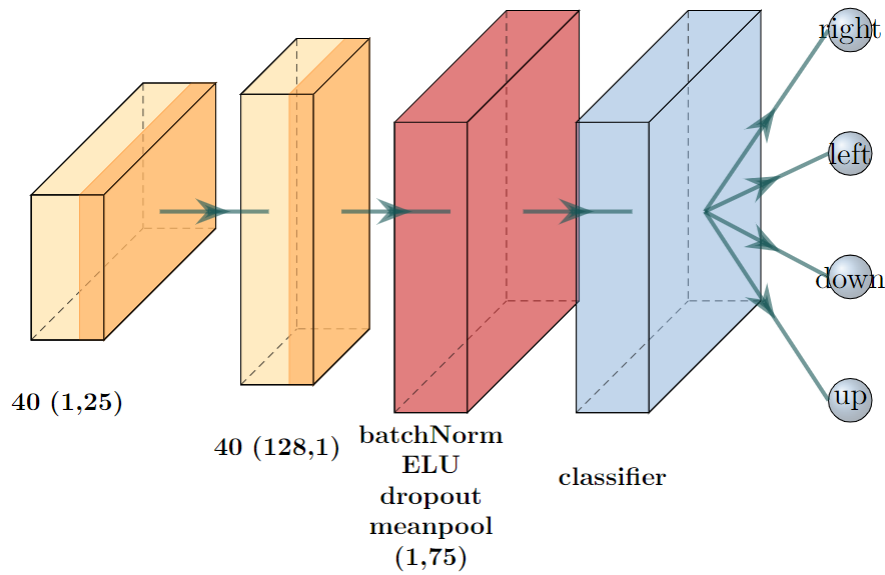
Figure 4.2: The shallow CNN architecture.

4.5.2 Deep CNN

The Deep CNN is based on the same idea as the Shallow CNN. The first three boxes in figure 4.3 are the same as in the Shallow CNN, with the exception that the temporal convolution only spans across 10 time steps instead of 25. The average pool has also

been replaced by a max pool with a kernel of size (1,3). The addition to the Deep CNN architecture is that there are three extra convolutional layers before the classifier. These are meant to create higher level features based on the temporal and spatial correlations found in the previous convolutional layers. The base architecture has a kernel size of (1,10) in all three convolutional layers with an increasing number of filters, 50, 100 and 200 respectively.
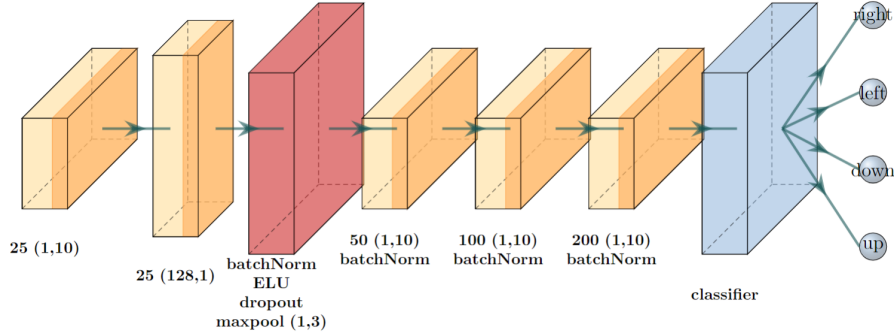
Figure 4.3: The deep CNN architecture.

4.5.3   EEGNet

The EEGNet architecture includes the same ideas as the Shallow and Deep CNNs when it comes to temporal and spatial convolution. The first two convolutional layers therefore look quite similar to the first layers of those architectures. Some small differences is the number of filters as well as the kernel size of the temporal convolution is based on the sample rate of the data. These convolutions are followed by an ELU activation function, dropout and an average pool with kernel size (1,4). The addition that EEGNet brings is a depthwise separable convolution [31] which is formed by convolution three and four in figure 4.4. Convolution three is a depthwise convolution, which learns a temporal summary for each feature map individually. Convolution four is a pointwise convolution which will learn to mix the feature maps together optimally. After the depthwise separable convolution another round of batch normalization, ELU activation function, dropout and average pool with kernel size (1,8) is applied. The last layer is a softmax classifier.
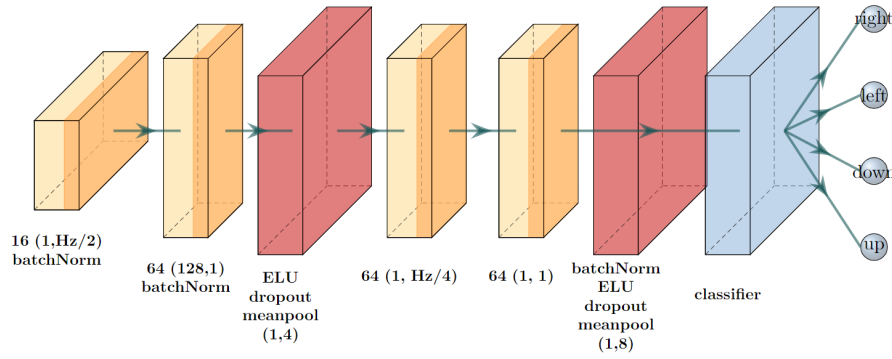
Figure 4.4: The EEGNet architecture.

4.6 Performance evaluation

This section explains the methods used in evaluating the results as well as the methodology behind choosing the best performing models. Lastly it describes how the results are utilized in calculating a models performance.

4.6.1 Cross validation

A basic concept in machine learning is to split the dataset into three different parts, these are training, validation and testing sets. The training set is used in backpropagation to train the models parameters. The validation set is used during the training phase to check for overfitting and to select the best model. No backpropagation is ever done on validation data. Lastly, after the training is done and the best model is selected the test set is used to evaluate how well the model performs on previously unseen data. The test set may look similar to the validation set as neither of them is used in backpropagation, however the test set is very important. If one was to evaluate the performance of the model on the validation set, which we also used to select the best model, then the evaluation would be highly optimistic as we select the model that performs the best on the validation. The test data works as if we were to test the model out in the world.

Now if we were to randomly split the data in such a manner that the train and test data is very similar, we could get lucky and it would be misleading on how well the model performs. Cross validation is a way to counteract this "luckyness".
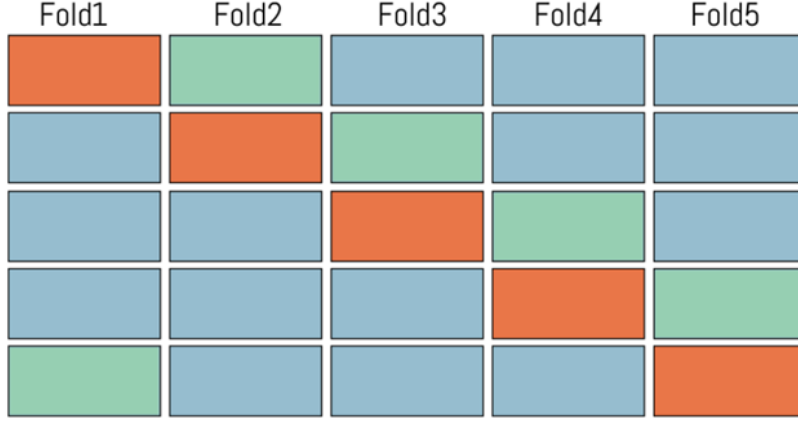
Figure 4.5: Five fold cross validation. One model is trained for each row with the orange fold as testing data, green fold as validation data and the blue folds as training data.

In short the method will divide the data into k folds with an equal number of data points in them. Then k models will be trained, each with a different fold as the test set. Figure [4.5] shows an example where model 1 is trained on folds 3 to 5, validation was done on fold 2 and tested on fold 1. Model 2 is trained on folds 1,4,5, validated on fold 3 and tested on fold 2 etc. The accuracy for each fold is calculated according to equation 4.2, and hows what percentage of the predictions are correct.

$$Accuracy = \frac{Number\ of\ correct\ predictions}{Total\ number\ of\ predictions} \tag{4.2}$$

Test accuracies for all folds and the average accuracy per subject is recorded. The mean value of all subjects average accuracies is the models performance. As the dataset is balanced to begin with, the folds were selected in a stratified fashion, meaning that the different classes will be distributed evenly in all folds. In this work five folds were used, meaning that 20% of the data was used for testing, 20% for validation and 60% for training.

4.6.2   Selecting the best model

It is quite standard to use validation loss to check for overfitting when training neural networks, the same method is often used to select the best model which will be used to get the final accuracy of the test set. During some initial experiments when the utility code for training and validation was set up the graph of train and validation accuracy followed the pattern shown in figure [4.6].
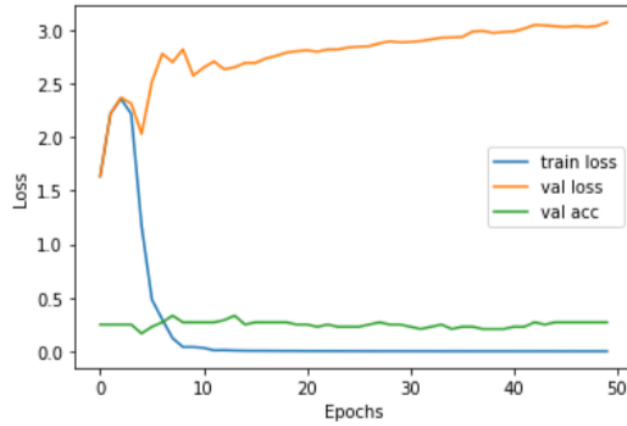
Figure 4.6: Example of graph showing train and validation loss as well as validation accuracy.

It's quite clear that if the training loop were to select the best model based on the lowest validation loss, it would very often pick the model from the first epoch. In epoch 0 the model weights have not been trained, they are only just initialized. This means that the best model would select an untrained model most of the time, resulting in the test accuracies being 25% every time. Figure [4.7] shows the confusion matrix on the test data of a model selected on epoch 3 while figure [4.8] shows a model selected on epoch 15. It's clear that the one selected on epoch 3 will only guess one class the entire time and achieve a classification accuracy of 25% and the one from epoch 15 has benefitted from some training.
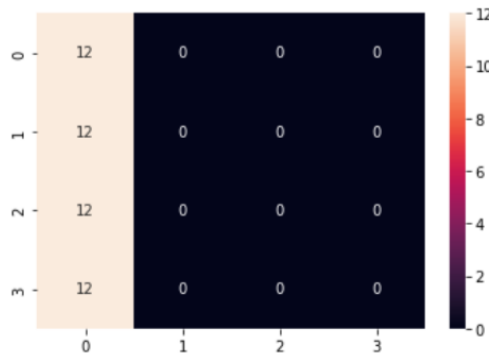
Figure 4.7: Confusion matrix of a model selected on epoch 3.
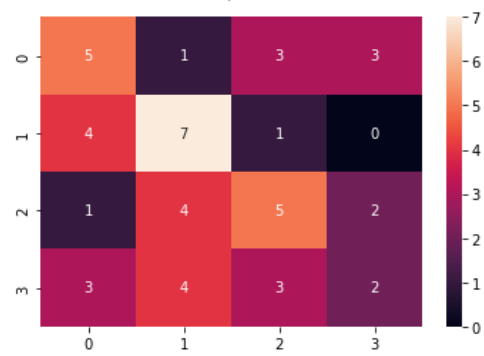
Figure 4.8: Confusion matrix of a model selected on epoch 15.

It's established that it is not good to use validation loss to select the best model and if we look back at figure [4.6] we can see that even though the validation loss increases, the validation accuracy increases slightly. The training code written for this thesis will check validation accuracy instead of validation loss to select the best model. Of course this is not foolproof as it still chooses models from early epochs occasionally, which shows up as a 25% accuracy.

4.6.3   Performance analysis

As mentioned in section 4.4.3 all experimental results are saved. This includes graphs of train loss, validation loss and validation accuracy, confusion matrixes that show the model performance on test data as well as train, validation and test accuracies for all folds.

For each subject in an experiment the mean accuracy and standard deviation between the folds is calculated. Accuracies and standard deviations for all subjects are averaged to measure the models overall performance. A given models performance is thus given by the average accuracy on the test set across all subjects. The standard deviation is used to check that models are consistent. In case anything stands out the training graphs and confusion matrixes are inspected.

Chapter 5

Results

In this chapter the results from the experiments described in chapter 4 are presented. The results for each model architecture are presented in their own section. Each subsection will contain results from one type of experiment, which includes experiments conducted on both sets of data, being 254 Hz and 1024 Hz. The exact hyperparameters and other information about each experiment will be presented before the results. In addition to the raw results each section will contain a few comments and reflections. All experiments used the Adam optimizer, and all except one architecture experiment used the Exponential Linear Unit (ELU) activation function. Almost all experiments were run on 50 epochs, however the number of epochs is not too important as the best model is often chosen depending on performance and not epoch number.

5.1 Deep CNN

5.1.1 Hyperparameter testing

After extensive hyperparameter testing the highest average accuracy for the downsampled data was actually achieved in the very first experiment. The model was trained with a learning rate of 0.001, the dropout rate was set to 0.5, classifier bias was False and the full trial length was used. A batch size of 4 resulted in 28.08%, table 5.1 shows all folds for the test set for this model. Subject 8 had a test accuracy of 50% on one of the folds (marked in green).

Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	35.00%	25.00%	35.00%	22.50%	27.50%	29.00%	05.15%
2	27.08%	16.67%	31.25%	33.33%	33.33%	28.33%	06.26%
3	22.22%	27.78%	19.44%	27.78%	33.33%	26.11%	04.84%
4	27.08%	22.92%	27.08%	27.08%	29.17%	26.67%	02.04%
5	33.33%	27.08%	29.17%	18.75%	25.00%	26.67%	04.82%
6	22.73%	23.26%	25.58%	23.26%	20.93%	23.15%	01.49%
7	22.92%	16.67%	27.08%	25.00%	22.92%	22.92%	03.49%
8	32.50%	40.00%	37.50%	27.50%	50.00%	37.50%	07.58%
9	20.83%	39.58%	25.00%	33.33%	35.42%	30.83%	06.90%
10	25.00%	16.67%	41.67%	33.33%	31.25%	29.58%	08.37%
					Avg	28.08%	05.09%

Table 5.1: Classification accuracies for all folds for the model that achieved the best average accuracy on the downsampled dataset for the Deep CNN.

For the non-downsampled data the best accuracy was 27.45%, which is slightly lower than the best result for the downsampled data. Table 5.2 shows all folds from the best performing model for the non-downsampled data. This model was trained with a learning rate of 0.001, a dropout rate of 0.001, bias set to False, batch size 4 and full trial length of the data. Numerous of the folds result in classification accuracies of 25%, this is most likely due to the training code selecting a model from one of the first epochs as explained in section 4.6.2.

Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	40.00%	20.00%	22.50%	25.00%	25.00%	26.50%	07.00%
2	31.25%	25.00%	22.92%	31.25%	31.25%	28.33%	03.63%
3	16.67%	25.00%	30.56%	27.78%	33.33%	26.67%	05.72%
4	29.17%	22.92%	25.00%	31.25%	25.00%	26.67%	03.06%
5	29.17%	31.25%	18.75%	29.17%	20.83%	25.83%	05.03%
6	27.27%	30.23%	25.58%	18.60%	27.91%	25.92%	03.95%
7	27.08%	37.50%	29.17%	22.92%	29.17%	29.17%	04.75%
8	32.50%	25.00%	20.00%	25.00%	22.50%	25.00%	04.18%
9	31.25%	22.92%	27.08%	43.75%	25.00%	30.00%	07.41%
10	20.83%	33.33%	35.42%	35.42%	27.08%	30.42%	05.68%
					Avg	27.45%	05.04%

Table 5.2: Classification accuracies for all folds for the model that achieved the best average accuracy on the non-downsampled dataset for the Deep CNN.

The selected hyperparameters for both datasets were identical save for the dropout

which was 0.5 for the downsampled data and 0.001 for the non-downsampled data.

5.1.2 Full vs. action interval

When comparing models trained on the full trial versus the action interval for the downsampled data the results did not look promising for the usage of the action interval. The models trained on the action interval achieved an average accuracy of 25.29% which doesn't come close to the previous best result for the Deep CNN architecture which was 28.08%. Thus training on the action interval was deemed to not result in any performance gain. The same goes for the non-downsampled data as the average accuracy for the model trained on the action interval was 26.7%. This is lower than the previous best, 27.45%, hence training on the action interval did not increase performance for this data either.

5.1.3 Architectural tweaks

Six different architecture changes were tested for the Deep CNN for both downsampled and non-downsampled data. Version 1 increased the number of filters in the convolutional layers from 25, 50, 100 and 200 to 40, 100, 250 and 500, see figure 4.3 for clarification on the layers. Version 2 reduced kernel sizes of the last three convolutional layers from (1,10) to (1,3). Version 3 is a combination of version 1 and 2, increasing the number of filters and decreasing kernel sizes. Version 4 increased the size of the last three convolutional layers from (1,10) to (1,20). Version 5 is a combination of version 1 and 4, increasing the number of filters and the kernel sizes. Lastly, version 6 added another layer to the classifier, making it a 2 layer softmax classifier.

Table 5.3 shows the average accuracies and standard deviations for the architectural experiments. It shows that models with the version 1 architecture achieves the best results (marked in green), closely followed by version 2. Version 5 is also a close contender as it's accuracy is only 0.1% lower than version 1. These results point to that it could be beneficial to increase the number of filters.

	Train		Validation		Test	
Version	**Acc**	**Std dev**	**Acc**	**Std dev**	**Acc**	**Std dev**
V1	89.16%	08.98%	34.14%	03.89%	27.09%	05.92%
V2	85.74%	13.14%	33.29%	03.30%	27.03%	05.52%
V3	84.54%	11.54%	33.32%	04.33%	25.78%	05.42%
V4	89.22%	15.26%	32.35%	05.03%	26.81%	05.06%
V5	86.29%	13.52%	32.71%	03.79%	26.99%	04.75%
V6	85.37%	12.13%	34.19%	04.27%	25.50%	05.28%

Table 5.3: Average accuracies and standard deviations from Deep CNN architecture experiments on the downsampled data.

Table 5.4 shows a summary of the results from the architectural experiments done on the non-downsampled data. Similarly to the architectural results for the downsampled data, version 1 performs the best out of the architecture variations. In this case it also out-performs the previous best result for the non-downsampled data. Increasing the number of filters resulted in an accuracy increase from 27.45% to 27.65% (marked in green).

	Train		Validation		Test	
Version	**Acc**	**Std dev**	**Acc**	**Std dev**	**Acc**	**Std dev**
Original	86.27%	18.77%	30.79%	04.24%	27.17%	04.53%
V1	93.86%	10.44%	31.39%	04.05%	27.65%	04.80%
V2	91.07%	17.67%	31.53%	04.67%	27.17%	04.18%
V3	91.94%	12.85%	32.30%	04.42%	27.31%	04.79%
V4	91.72%	15.15%	31.70%	05.15%	27.61%	04.42%
V5	90.04%	14.22%	30.46%	04.01%	26.21%	04.35%
V6	90.27%	12.26%	32.44%	04.53%	26.41%	05.00%

Table 5.4: Average accuracies and standard deviations from Deep CNN architecture experiments on the non-downsampled data.

5.1.4 Transfer learning

The hyperparameters that previously resulted in the highest performance for the Deep CNN were used during this transfer learning experiment as well. Learning rate was set to 0.001, a batch size of 4 was used, the dropout rate set to 0.5 and bias was set to False. Table 5.5 shows a summary of the results for feature extraction and fine tuning. Both methods resulted in almost identical classification accuracies, however if one is to pick a winner it is fine tuning. None of them surpass the performance achieved previously without transfer learning and frankly, none of them even come close.

	Train		Validation		Test	
Method	**Acc**	**Std dev**	**Acc**	**Std dev**	**Acc**	**Std dev**
Feature extract	96.01%	05.94%	30.05%	05.74%	26.27%	05.95%
Fine tuning	93.24%	07.39%	30.71%	04.79%	26.34%	05.55%

Table 5.5: Average accuracies and standard deviations from transfer learning experiments on the Deep CNN.

5.1.5 Summary

Out of all the experiments done on the Deep CNN architecture, the best classification accuracy was 28.08%. This was the result of a model trained on the downsampled data with intra-subject training. The models trained on the non-downsampled data did not perform any better overall. None of the architectural tweaks led to any improvements for the downsampled data, it did however improve the results for the non-downsampled data. Training and evaluating on the action interval only led to a steep decrease in performance. Neither of the transfer learning methods resulted in any high accuracies.

5.2 Shallow CNN

5.2.1 Hyperparameter testing

The best performing model on the downsampled data was trained with a learning rate of 0.001 with bias set to True. The full trial length was used, batch size was 4 and the dropout rate was set to 0.001. Table 5.6 shows all folds for this model, which achieved an average test accuracy of 28.92%. Despite the relatively high average accuracy two of the subjects have accuracies at or below chance level, namely subject one and subject six.

Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	25.00%	25.00%	30.00%	17.50%	27.50%	25.00%	04.18%
2	33.33%	31.25%	25.00%	27.08%	18.75%	27.08%	05.10%
3	33.33%	19.44%	33.33%	27.78%	27.78%	28.33%	05.09%
4	33.33%	22.92%	31.25%	33.33%	35.42%	31.25%	04.37%
5	31.25%	33.33%	25.00%	25.00%	20.83%	27.08%	04.56%
6	25.00%	20.93%	23.26%	25.58%	20.93%	23.14%	01.96%
7	29.17%	39.58%	27.08%	29.17%	31.25%	31.25%	04.37%
8	40.00%	32.50%	30.00%	32.50%	35.00%	34.00%	03.39%
9	16.67%	33.33%	22.92%	33.33%	27.08%	26.67%	06.37%
10	37.50%	45.83%	37.50%	22.92%	33.33%	35.42%	07.45%
					Avg	28.92%	04.69%

Table 5.6: Classification accuracies for all folds for the model that achieved the best average accuracy on the downsampled dataset for the Shallow CNN.

The best hyperparameters for the non-downsampled data was a learning rate of 0.001, dropout rate set to 0.5, bias True and full trial length. Training with batch size 10 resulted in an average test accuracy of 28.4% which is the highest accuracy for this data. Table 5.7 contains results from all folds for the model that achieved 28.4% accuracy. Note that subject ten has one fold with a test accuracy reaching 50% and the average accuracy for this subject was 40% (marked in green). This high accuracy makes up for several subjects being at or below chance level.

Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	32.50%	25.00%	35.00%	22.50%	25.00%	28.00%	04.85%
2	25.00%	27.08%	35.42%	27.08%	33.33%	29.58%	04.04%
3	25.00%	22.22%	25.00%	22.22%	30.56%	25.00%	03.04%
4	33.33%	22.92%	33.33%	29.17%	27.08%	29.17%	03.95%
5	20.83%	18.75%	16.67%	25.00%	31.25%	22.50%	05.17%
6	27.27%	25.58%	16.28%	25.58%	32.56%	25.45%	05.25%
7	31.25%	31.25%	22.92%	22.92%	22.92%	26.25%	04.08%
8	40.00%	37.50%	25.00%	25.00%	37.50%	33.00%	06.60%
9	20.83%	20.83%	25.00%	31.25%	27.08%	25.00%	03.95%
10	29.17%	43.75%	50.00%	39.58%	37.50%	40.00%	06.90%
					Avg	28.40%	04.78%

Table 5.7: Classification accuracies for all folds for the model that achieved the best average accuracy on the non-downsampled dataset for the Shallow CNN.

Figure 5.1 shows the confusion matrix of the highest classification accuracy achieved on

a single fold, not only for the Shallow CNN but for the entire thesis. This is of course only a single fold and thus not statistically significant, but it is included for the curious as it shows that it is not impossible to train a model achieving this performance. This accuracy was recorded for subject 10 with a batch size of 10, learning rate of 0.001, bias set to True. The full length non-downsampled data was used.
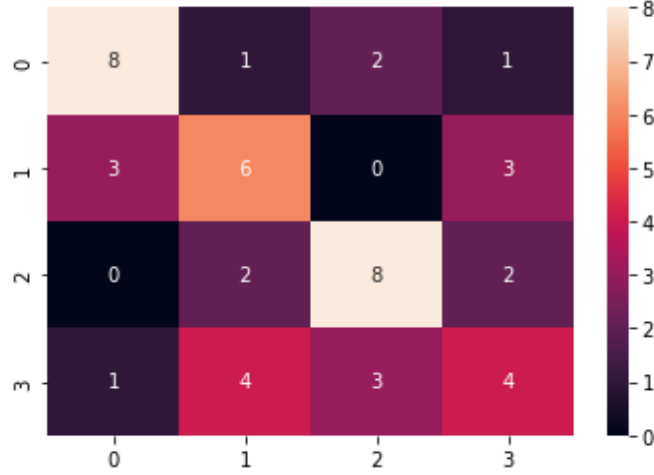
Figure 5.1: Confusion matrix of a 54.2% classification accuracy on a single fold.

5.2.2 Full vs. action interval

The interval experiments for the Shallow CNN architecture led to the same conclusion as the ones conducted on the Deep CNN architecture. The average test accuracies for the models trained on the action interval were 25.74% and 25.95% for the downsampled and non-downsampled data respectively. These are barely above chance level and are much lower than the highest accuracies achieved by the Shallow CNN architecture.

5.2.3 Architectural tweaks

Two versions of the architecture were tried, version 1 switched activation function from ELU to LeakyReLU and version 2 increased the number of filters in the initial convolutional layers. In the model trained on the downsampled data the number of filters were increased from 40 to 80. The non-downsampled data is a lot larger and was causing memory problems when filters were increased to 80, thus the models trained on that data had 60 filters instead of 80.

Models trained on the downsampled data seemed to benefit more from increasing the number of layers than the switch of activation function. Version 2 was slightly better than version 1 as can be seen in table 5.8. However both of these accuracies are far outmatched by the previous best result of the original architecture.

	Train		Validation		Test	
Version	**Acc**	**Std dev**	**Acc**	**Std dev**	**Acc**	**Std dev**
V1	93.25%	10.84%	32.28%	03.14%	26.64%	04.90%
V2	87.02%	18.13%	32.93%	04.28%	26.85%	05.79%

Table 5.8: Average accuracies and standard deviations from the Shallow CNN architecture experiments on the downsampled data.

On the contrary to the architecture results of the downsampled data, the models trained on the non-downsampled data benefitted more from a switch to the LeakyReLU activation function than increased number of layers as can be seen in table 5.4. It is not a completely fair comparison as the non-downsampled version could not increase the number of layers as much as the downsampled version. Nevertheless the results from the architectural changes are still worse than the best from the original architecture.

	Train		Validation		Test	
Version	**Acc**	**Std dev**	**Acc**	**Std dev**	**Acc**	**Std dev**
V1	75.29%	18.82%	35.76%	04.10%	27.10%	06.25%
V2	91.37%	08.95%	37.16%	03.62%	26.37%	05.63%

Table 5.9: Average accuracies and standard deviations from the Shallow CNN architecture experiments on the non-downsampled data.

5.2.4   Transfer learning

The hyperparameters that previously achieved the best result for the Shallow CNN were selected for the transfer learning experiments. These being a learning rate of 0.001, classifier bias set to True, a batch size of 4 and a dropout rate set to 0.001. Table 5.10 shows the average results from the transfer learning experiments done on the Shallow CNN. Feature extraction seems to be the better option here. Just as the results for the Deep CNN, neither of the transfer learning methods achieved accuracies higher than the previously best results.

	Train		Validation		Test	
Method	**Acc**	**Std dev**	**Acc**	**Std dev**	**Acc**	**Std dev**
Feature extract	85.68%	18.86%	32.94%	05.40%	26.87%	05.61%
Fine tuning	87.50%	15.59%	33.98%	04.83%	26.25%	04.81%

Table 5.10: Average accuracies and standard deviations from transfer learning experiments on the Shallow CNN.

5.2.5 Summary

The highest average test accuracy achieved for the Shallow CNN architecture was 28.92%, this model was trained on the downsampled data. Models trained on the non-downsampled data performed about the same, or worse in some cases, compared to the downsampled data. Neither of the architectural changes managed to beat the original architecture. Isolating the action interval and training on only that gave no increases in performance. Transfer learning did not lead to any accuracy increases, but out of the two approaches feature extraction was slightly better.

5.3 EEGNet

5.3.1 Hyperparameter testing

The best performing model for the downsampled data achieved an average test accuracy of 29.05%. It was trained on the full trial length with a learning rate of 0.001, batch size set to 4, dropout rate 0.5 and bias set to False. Table 5.11 shows the complete results from the model that achieved the top accuracy. All of the subject averages are well above the chance level.

Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	32.50%	27.50%	25.00%	37.50%	17.50%	28.00%	06.78%
2	25.00%	29.17%	25.00%	27.08%	35.42%	28.33%	03.86%
3	38.89%	27.78%	30.56%	22.22%	27.78%	29.44%	05.44%
4	18.75%	27.08%	33.33%	33.33%	22.92%	27.08%	05.74%
5	25.00%	25.00%	20.83%	27.08%	33.33%	26.25%	04.08%
6	29.55%	37.21%	25.58%	32.56%	25.58%	30.10%	04.42%
7	33.33%	25.00%	31.25%	29.17%	20.83%	27.92%	04.49%
8	25.00%	32.50%	27.50%	25.00%	40.00%	30.00%	05.70%
9	27.08%	16.67%	33.33%	18.75%	35.42%	26.25%	07.52%
10	33.33%	39.58%	43.75%	37.50%	31.25%	37.08%	04.45%
					Avg	29.05%	05.25%

Table 5.11: Classification accuracies for all folds for the model that achieved the best average accuracy on the downsampled dataset for EEGNet.

Since this was the best performing model in this thesis figures 5.2 shows some more details. They are both snapshots of fold three on subject ten on the best performing model. The highest validation accuracy was obtained on epoch 17 and hence the best performing model was selected on epoch 17 as well.
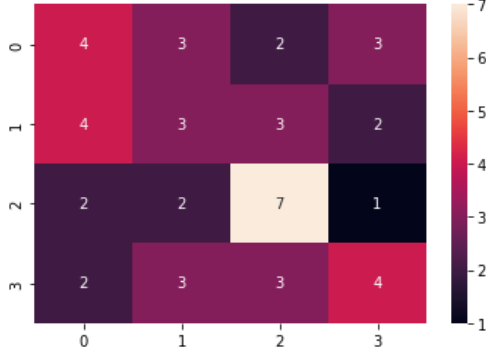
(a) Confusion matrix from epoch 17.
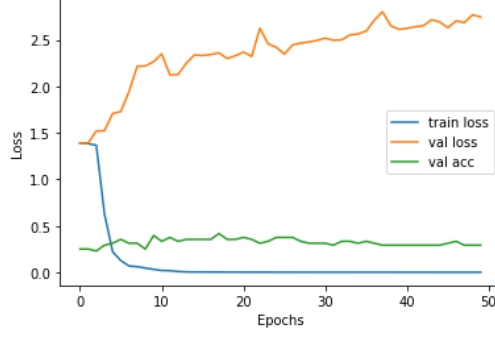
(b) Train and validation loss as well as validation accuracy.

Figure 5.2: Confusion matrix and train graph for subject 10 on the best EEGNet model.

The best model for the non-downsampled data was found to have identical hyperparameters. Table 5.12 shows all folds for the best performing model for the non-downsampled dataset, which reached an average test accuracy of 27.62%. This result once again confirms that the models trained on the non-downsampled data gains no performance over the models trained on the downsampled data. In fact, the models trained on the downsampled data beat the models trained on the non-downsampled data in all experiments run on the EEGNet architecture.

Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	25.00%	25.00%	22.50%	35.00%	25.00%	26.50%	04.36%
2	33.33%	27.08%	25.00%	27.08%	20.83%	26.67%	04.04%
3	16.67%	25.00%	13.89%	22.22%	38.89%	23.33%	08.71%
4	29.17%	31.25%	35.42%	37.50%	20.83%	30.83%	05.80%
5	16.67%	25.00%	29.17%	20.83%	25.00%	23.33%	04.25%
6	22.73%	23.26%	27.91%	23.26%	16.28%	22.68%	03.71%
7	29.17%	25.00%	31.25%	25.00%	29.17%	27.92%	02.50%
8	27.50%	22.50%	37.50%	30.00%	30.00%	29.50%	04.85%
9	33.33%	37.50%	33.33%	33.33%	25.00%	32.50%	04.08%
10	39.58%	31.25%	29.17%	31.25%	33.33%	32.92%	03.58%
				Avg		27.62%	04.59%

Table 5.12: Classification accuracies for all folds for the model that achieved the best average accuracy on the non-downsampled dataset for EEGNet.

5.3.2   Full vs. action interval

As with the Deep and Shallow CNN architectures, EEGNet did not benefit from being trained on isolated action intervals. Models trained on the action interval resulted in an average test accuracy of 25.01% for the downsampled data and 24.05% for the non-

downsampled data. These results just further confirm that training on the full interval is far superior.

5.3.3 Architectural tweaks

Only one architectural tweak was tested for EEGNet, namely increasing the number of filters. For the downsampled data the filters were increased from 16 and 4 to 32 and 16. Because of memory issues the number of filters were increased to 24 and 8 for the non-downsampled data. Tables 5.13 and 5.13 show a summary of the results from training with an increased number of filters for both datasets. Neither of them beat the previous best results, namely 29.05% for the downsampled data and 27.62% for the non-downsampled data.

	Train		Validation		Test	
Version	**Acc**	**Std dev**	**Acc**	**Std dev**	**Acc**	**Std dev**
V1	90.73%	10.03%	32.43%	04.51%	27.37%	05.09%

Table 5.13: Average accuracies and standard deviations from EEGNet architecture experiments on the downsampled data.

	Train		Validation		Test	
Version	**Acc**	**Std dev**	**Acc**	**Std dev**	**Acc**	**Std dev**
V1	78.63%	22.95%	31.43%	04.73%	27.17%	04.33%

Table 5.14: Average accuracies and standard deviations from EEGNet architecture experiments on the non-downsampled data.

5.3.4 Transfer learning

Transfer learning experiments on EEGNet ran with a learning rate of 0.001, batch size set to 4 and a dropout rate of 0.5. Bias was False and full length data was used. In table 5.15 it is clear that fine tuning outperforms feature extraction in this experiment. Just like with the other architectures the transfer learning approach did not show results higher than the intra-subject training.

	Train		Validation		Test	
Method	**Acc**	**Std dev**	**Acc**	**Std dev**	**Acc**	**Std dev**
Feature extract	95.64%	06.29%	31.51%	04.33%	26.21%	04.18%
Fine tuning	91.06%	11.07%	32.77%	04.60%	27.38%	06.35%

Table 5.15: Average accuracies and standard deviations from transfer learning experiments on EEGNet.

5.3.5   Summary

From the results presented for the EEGNet architecture it's clear that the downsampled data outperforms the non-downsampled data as the best model, which reached an accuracy of 29.05%, was trained using downsampled data. In every experiment the models trained on downsampled data reached higher accuracies than models trained on data with the original sample rate. As with the other model architectures, training on isolated action intervals did not increase model performance at all. Transfer learning did not improve the results, however fine tuning gives better accuracies than feature extraction if transfer learning is used.

Chapter 6

Discussion

6.1 Results evaluation

Evaluating the results from this thesis work is quite straight forward. There is one main metric, and one supporting metric. The main being the classification accuracy on test data, and the supporting being the standard deviation calculated between all folds for a subject, only meant to catch if a model does not have stable performance. Deciding what worked the best is quite simple, but determining why is a challenge. The answers to the research questions below include possible explanations to some of the "why"s, but none of them are certain as neural networks are "black boxes" in many ways.

Table 6.1 contains the results for the models that performed the best for each model architecture. Marked in green is the best accuracy achieved during this thesis work, 29.05%.

	Downsampled	non-Downsampled	Transfer learning
Deep CNN	$28.08\% \pm 5.09\%$	$27.65\% \pm 4.8\%$	$26.34\% \pm 5.55\%$
Shallow CNN	$28.92\% \pm 4.69\%$	$28.40\% \pm 4.78\%$	$26.87\% \pm 5.61\%$
EEGNet	$29.05\% \pm 5.25\%$	$27.62\% \pm 4.59\%$	$27.38\% \pm 6.35\%$

Table 6.1: This table shows a summary of all results in this thesis. It contains the average accuracy and standard deviation for the best models trained on downsampled data, non-downsampled data and transfer learning.

When comparing the results of different subjects across all experiments done a few interesting things pop up. Subject 8 and subject 10 perform really well in a majority of the experiments, often achieving average classification accuracies far over 30%. The best subject average classification accuracy was 40% for subject 10. This occured during the batch size experiments for the non-downsampled data using the Shallow CNN architecture, with batch size 10. Subject 10 is also the one that achieved the highest

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found accuracy on a single fold, 54.2%. This was recorded during the same experiment but with batch size set to 4. Subject 8 had a few folds with classification accuracies over 50%. Results for other subjects vary a bit more. This shows that the results can differ quite a lot depending on the subject. It is impossible to verify that a subject does not think about anything else than the given word. It must also be difficult for the subjects to be focused during the numerous recordings. The data recording is not part of this thesis work, however these observations show how crucial that step is.

Comparing my results to the current state of the art results presented in [20] is difficult as not much is known about their experimental setup. They trained with 4-fold cross validation, but the rest is unclear. They could have used the optimistic evaluation that does not involve a test set, instead only using train and validation sets. The hyperparameters that led to their results are not mentioned, thus making it hard to reproduce and no code is available. However assuming that they used the same thorough methods as this work, their result of 29.67% is better. One distinctive difference between their study and this thesis work is that they use only the left side sensors as there is some evidence that pronounced and inner speech activate those areas. It is possible that isolating the left side sensors gives the models mode exact data compared to using all the sensors as this thesis have done.

6.2   Research questions

Four research questions were presented in section 1.2 as part of the problem description. This section will answer these research questions based on related work, theory, method and results.

Q1: How does downsampling the data affect the training and performance of the models?

As mentioned in 4.6.3 the performance of a model is measured by it's average classification accuracy on the test set. The results show that the best performing setup for all three model architectures was trained and tested using the data that was downsampled to 254 Hz. When comparing the overall performance across multiple experiments, models trained on downsampled data performed just as well, or better than, models trained on non-downsampled data. For the EEGNet architecture models trained on the downsampled data out-performed models trained on the non-downsampled data in all experiments. Apart from the obvious performance metric, using the non-downsampled data consumes more computational resources. The first example of this is that the pre-processing that kept the original sample rate took over two days to complete, especially the ICA calculations took very long. In addition to this the computational resources needed during training increase, as well as the size of the networks. This was clearly

visible during the architectural experiments as some of the alterations caused the GPU to run out of memory for the non-downsampled data, but worked fine for the downsampled data. Since the non-downsampled data gave no performance gains, and took more resources, one can conclude that it's not worth using.

Q2: Does using only the action interval increase the performance of the models?

No, the contrary. Across all three models and the two different datasets a total of six experiments comparing the action interval to the full length were done. None of models trained on the action interval performed better than the ones trained on full length data. All but one of them achieved classification accuracies below 26% and some of them were below chance level, see appendix for full results tables. The best performing model trained on the action interval reached an accuracy of 26.7%, this was for the Deep CNN on non-downsampled data. Two theories as to why this is the case arose. First, there is a chance that the data becomes to *small* when a short time interval of it is extracted. Generally neural networks trained on small or little data perform worse, so that could be a cause. Secondly the networks could find some correlations in other parts of the data. For example it could detect some pattern when the que is shown in the concentration interval. Since humans cannot interpret EEG signals it's hard to determine exactly what the network is looking at. No matter the reason, extracting the action interval did not result in any performance gains.

Q3: Can the classification accuracy be increased by using transfer learning and which of the transfer learning methods works the best?

In the limited experiments done in this thesis there is no evidence that indicates that transfer learning increases performance over intra-subject training. Neither of the transfer learning methods resulted in any performance increase. It is worth to note that due to time constraints no hyperparameter tuning was done for the transfer learning, instead the best hyperparameters from previous experiments were used and no other values were tested. There could exist some other hyperparameters that are a better setup for transfer learning. Because of this we cannot draw a clear conclusion that transfer learning is not useful in the area of EEG decoding. Fine tuning was better than feature extraction in two of the three model architectures, the Shallow CNN architecture being the exception where feature extraction performed half a percent better.

Q4: Which of the proposed model architectures perform the best on the Nieto dataset?

Looking at the top results from each model architecture, EEGNet performed the best with a top accuracy of 29.05%, the Shallow CNN was close with a top accuracy of 28.92%. The Deep CNN's highest accuracy was 28.05%, making it the worst performing architecture in these experiments. Across all experiments the EEGNet architecture was the most stable performance wise. None of the architectural tweaks led to any improved results and just as using the non-downsampled data most of them increase the computational resources needed.

6.3   Future work

It is clear that much progress must be made before BCIs can be used in healthcare or commercially. The current state of the art and the results obtained in this thesis are far from the accuracies that would be required. Much higher accuracies are needed before these kinds of technologies can be used outside of the safe environments of a lab. In machine learning the data is just as important as the models. I believe that the data needs to become better before research can achieve any monumental increases in classification performance. EEG has great temporal resolution but not very good spatial resolution, meaning that it is quite precise in the time domain, but not so precise in the space domain.

While effective in identifying which areas are used during different brain activity it may be too clouded to result in any high accuracies in the kind of task that this thesis involves. As inner speech has been identified to activate the left side of the brain, more specifically the Wernicke's and Broca's area [14], each word that a person thinks about will activate that part.

Imagine there are two populations of neurons, one closely related to the word *up* and the second closely related to the word *left*. Now, assume these two populations are located very close to each other, perhaps even overlapping. Considering the low spatial resolution of EEG, the same sensor would pick up on both of these two populations, making it difficult to tell them apart. Neural networks can do incredible things, given enough data, and I believe that the data needs to become more detailed before any outstanding decoding results can be achieved.

Apart from the development of more precise data collection methods, more extensive experiments with transfer learning could lead to higher accuracies. It has been shown to give great improvements in [18]. Because of time restrictions no hyperparameter tuning was done during the transfer learning experiments. The experimental situation is quite different from intra-subject training and hence it is possible different hyperparameters

would perform better for this purpose.

Chapter 7

Conclusions

This master's thesis investigates different machine learning methods for decoding EEG data. Three different model architectures were used as the base for all experiments, namely the Shallow CNN, Deep CNN and EEGNet. Two different preprocessed datasets were used to investigate the effect of the sample rate of the data. Intra-subject training was compared to transfer learning and different intervals of the data was tested against each other. Hyperparameter tuning for each architecture and dataset was performed to find any significant differences.

The results showed that a smaller batch size combined with a high dropout rate led to the highest classification accuracies for most models. The EEGNet architecture especially performed really well with these hyperparameters as it was the base for the best performing model in the entire thesis. Transfer learning did not reach accuracies that could rival intra-subject training, however fine tuning was deemed to be slightly better compared to feature extraction. From the results it is clear that it is not required to use extra computational resources on higher sample rate data, nor does it help to train models on a small concentrated interval of the data. All code and every result from the thesis has been made public so that the results can be reproduced and examined. The code can also be used in future work.

Finally, as a last conclusion I would like to point the attention of future work in the area towards obtaining more precise data. The spatial resolutions of the signal recording methods that we have today are perhaps not enough to reach sky high classification accuracies, and hence cannot lead to any usable BCI.

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Chapter 8

Appendix

Appendix: Deep CNN results

Deep CNN	batch size: 4	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	0.9917	0.3667	0.4333	1	1	0.7583	0.2934
2	1	0.8194	0.9028	0.9931	0.8403	0.9111	0.0750
3	1	0.5463	1	1	0.6481	0.8389	0.1999
4	1	0.2847	0.4306	1	0.9375	0.7306	0.3088
5	0.9931	0.3472	0.8681	1	0.25	0.6917	0.3258
6	0.6124	0.6977	0.5504	0.3023	0.4961	0.5318	0.1329
7	1	1	1	0.9931	1	0.9986	0.0028
8	1	1	1	0.9917	1	0.9983	0.0033
9	1	1	1	0.9306	1	0.9861	0.0278
10	0.25	0.9167	0.9722	1	0.6944	0.7667	0.2798
					Avg	0.8212	0.1649

Deep CNN	batch size: 4	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	0.25	0.25	0.25	0.4	0.45	0.3200	0.0872
2	0.3125	0.4583	0.2917	0.3125	0.3542	0.3458	0.0598
3	0.2778	0.3056	0.25	0.2778	0.3889	0.3000	0.0478
4	0.4375	0.2708	0.3333	0.375	0.375	0.3583	0.0550
5	0.3125	0.2708	0.2917	0.3125	0.25	0.2875	0.0243
6	0.3023	0.3182	0.2727	0.25	0.2955	0.2877	0.0239
7	0.3333	0.2917	0.3125	0.3333	0.4167	0.3375	0.0425
8	0.45	0.375	0.325	0.375	0.3	0.3650	0.0515
9	0.3125	0.3958	0.3125	0.3542	0.3542	0.3458	0.0312
10	0.25	0.3333	0.3333	0.25	0.2917	0.2917	0.0373
					Avg	0.3239	0.0460

Deep CNN	batch size: 4	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	0.35	0.25	0.35	0.225	0.275	0.2900	0.0515
2	0.2708	0.1667	0.3125	0.3333	0.3333	0.2833	0.0626
3	0.2222	0.2778	0.1944	0.2778	0.3333	0.2611	0.0484
4	0.2708	0.2292	0.2708	0.2708	0.2917	0.2667	0.0204
5	0.3333	0.2708	0.2917	0.1875	0.25	0.2667	0.0482
6	0.2273	0.2326	0.2558	0.2326	0.2093	0.2315	0.0149
7	0.2292	0.1667	0.2708	0.25	0.2292	0.2292	0.0348
8	0.325	0.4	0.375	0.275	0.5	0.3750	0.0758
9	0.2083	0.3958	0.25	0.3333	0.3542	0.3083	0.0690
10	0.25	0.1667	0.4167	0.3333	0.3125	0.2958	0.0837
					Avg	0.2808	0.0509

Table 8.1: 254 Hz

Deep CNN	batch size: 10	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	1	1	1	1	0.25	0.8500	0.3000
2	1	1	0.8542	0.8958	1	0.9500	0.0626
3	1	1	1	1	1	1.0000	0.0000
4	1	1	1	0.4306	1	0.8861	0.2278
5	1	1	1	0.4931	0.6319	0.8250	0.2188
6	1	1	1	1	0.2791	0.8558	0.2884
7	1	0.9583	0.9653	1	0.2847	0.8417	0.2790
8	1	1	1	1	1	1.0000	0.0000
9	0.9861	1	0.8194	1	1	0.9611	0.0711
10	1	0.8264	0.9583	1	0.8403	0.9250	0.0765
					Avg	0.9095	0.1524

Deep CNN	batch size: 10	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	0.3	0.275	0.35	0.375	0.25	0.3100	0.0464
2	0.3333	0.3125	0.3542	0.25	0.375	0.3250	0.0429
3	0.3889	0.5278	0.3333	0.3056	0.3333	0.3778	0.0797
4	0.3125	0.2917	0.375	0.2917	0.3125	0.3167	0.0306
5	0.3958	0.2917	0.3125	0.4167	0.2708	0.3375	0.0580
6	0.2558	0.2727	0.2955	0.2727	0.25	0.2693	0.0159
7	0.2708	0.2917	0.3542	0.3125	0.25	0.2958	0.0359
8	0.3	0.325	0.375	0.35	0.475	0.3650	0.0604
9	0.3125	0.3958	0.4167	0.2917	0.4375	0.3708	0.0580
10	0.3125	0.375	0.3958	0.375	0.25	0.3417	0.0537
					Avg	0.3310	0.0482

Deep CNN	batch size: 10	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	0.35	0.225	0.2	0.125	0.25	0.2300	0.0731
2	0.2292	0.2708	0.25	0.2708	0.1875	0.2417	0.0312
3	0.3333	0.3056	0.3611	0.25	0.1389	0.2778	0.0786
4	0.25	0.25	0.3542	0.2708	0.3542	0.2958	0.0483
5	0.25	0.25	0.2708	0.2708	0.2917	0.2667	0.0156
6	0.2273	0.1628	0.2326	0.1395	0.2326	0.1990	0.0398
7	0.3125	0.2917	0.25	0.375	0.2917	0.3042	0.0408
8	0.25	0.275	0.275	0.375	0.35	0.3050	0.0485
9	0.1042	0.2917	0.2708	0.2292	0.2708	0.2333	0.0677
10	0.2708	0.25	0.2917	0.2917	0.2708	0.2750	0.0156
					Avg	0.2628	0.0459

Table 8.2: 254 Hz

Deep CNN	batch size: 20	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	1	1	0.9917	0.3583	1	0.8700	0.2559
2	0.6875	1	1	1	0.4931	0.8361	0.2099
3	1	1	1	1	1	1.0000	0.0000
4	0.5139	1	0.3819	0.8333	0.5	0.6458	0.2319
5	1	1	0.7569	1	1	0.9514	0.0972
6	1	0.9922	1	1	1	0.9984	0.0031
7	0.5	1	1	0.9861	1	0.8972	0.1987
8	1	1	1	1	1	1.0000	0.0000
9	1	0.9931	1	1	1	0.9986	0.0028
10	0.9861	1	1	1	1	0.9972	0.0056
					Avg	0.9195	0.1005

Deep CNN	batch size: 20	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.25	0.3	0.325	0.275	0.275	0.2850	0.0255
2	0.2708	0.375	0.3542	0.3125	0.2708	0.3167	0.0425
3	0.3889	0.3333	0.3611	0.3611	0.3889	0.3667	0.0208
4	0.3125	0.4167	0.2708	0.3333	0.3125	0.3292	0.0483
5	0.2917	0.375	0.2708	0.3333	0.3125	0.3167	0.0358
6	0.3023	0.3409	0.2955	0.2727	0.3636	0.3150	0.0328
7	0.2917	0.3542	0.375	0.2708	0.4375	0.3458	0.0598
8	0.4	0.25	0.325	0.4	0.25	0.3250	0.0671
9	0.4167	0.3125	0.2708	0.2917	0.375	0.3333	0.0543
10	0.3333	0.4375	0.3958	0.3125	0.3125	0.3583	0.0500
					Avg	0.3292	0.0437

Deep CNN	batch size: 20	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.2	0.375	0.275	0.225	0.275	0.2700	0.0600
2	0.2292	0.1042	0.3542	0.2708	0.2708	0.2458	0.0816
3	0.25	0.2778	0.25	0.3333	0.2222	0.2667	0.0377
4	0.2917	0.2917	0.2292	0.2292	0.3125	0.2709	0.0349
5	0.3125	0.2083	0.2292	0.2708	0.2292	0.2500	0.0373
6	0.3636	0.2093	0.2326	0.3721	0.2093	0.2774	0.0744
7	0.3125	0.25	0.2083	0.3125	0.25	0.2667	0.0404
8	0.275	0.375	0.2	0.375	0.25	0.2950	0.0696
9	0.2292	0.3125	0.3125	0.2708	0.25	0.2750	0.0333
10	0.3542	0.25	0.2292	0.3125	0.2917	0.2875	0.0445
					Avg	0.2705	0.0514

Table 8.3: 254 Hz

Deep CNN	batch size: 4	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	0.2500	0.2500	0.8250	0.4417	0.4417	0.4417	0.2100
2	0.4861	1.0000	0.7986	0.9931	0.8819	0.8319	0.1884
3	0.2500	0.7963	0.8889	0.7685	0.4630	0.6333	0.2392
4	0.9097	0.9931	0.7500	1.0000	1.0000	0.9306	0.0965
5	0.7361	0.5833	1.0000	0.8681	0.9792	0.8333	0.1563
6	0.7364	0.8217	0.9302	1.0000	0.7209	0.8419	0.1086
7	1.0000	0.9444	1.0000	1.0000	0.9722	0.9833	0.0222
8	0.8917	0.9417	0.9500	0.8167	0.9500	0.9100	0.0515
9	0.8472	0.2986	0.7431	0.5694	0.9583	0.6833	0.2311
10	1.0000	0.8889	0.9444	0.7778	0.8264	0.8875	0.0796
					Avg	0.7977	0.1383

Deep CNN	batch size: 4	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	0.2500	0.2500	0.3250	0.3250	0.2750	0.2850	0.0339
2	0.3333	0.3542	0.3750	0.3333	0.3958	0.3583	0.0243
3	0.2500	0.3056	0.2778	0.3333	0.2778	0.2889	0.0283
4	0.3542	0.3542	0.3542	0.3125	0.2708	0.3292	0.0333
5	0.3958	0.3542	0.3542	0.2500	0.3333	0.3375	0.0482
6	0.3023	0.2727	0.3409	0.2500	0.3409	0.3014	0.0363
7	0.3542	0.4167	0.2708	0.3125	0.3750	0.3458	0.0503
8	0.3000	0.3750	0.3250	0.4250	0.3500	0.3550	0.0430
9	0.3958	0.2708	0.3750	0.3125	0.2917	0.3292	0.0482
10	0.3333	0.3333	0.2917	0.3333	0.3958	0.3375	0.0333
					Avg	0.3268	0.0379

Deep CNN	batch size: 4	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1	0.2500	0.2500	0.2500	0.2750	0.2750	0.2600	0.0122
2	0.3125	0.4375	0.2083	0.4375	0.2917	0.3375	0.0888
3	0.2500	0.2222	0.1667	0.2778	0.2778	0.2389	0.0416
4	0.1875	0.1875	0.2292	0.1875	0.2500	0.2083	0.0264
5	0.2292	0.2292	0.2917	0.1875	0.2083	0.2292	0.0349
6	0.2500	0.2791	0.2791	0.1860	0.2326	0.2453	0.0346
7	0.2292	0.3333	0.2083	0.1667	0.2917	0.2458	0.0595
8	0.3000	0.3000	0.5250	0.3250	0.2750	0.3450	0.0914
9	0.3125	0.2083	0.2917	0.2083	0.2917	0.2625	0.0449
10	0.3125	0.3958	0.2917	0.3750	0.2708	0.3292	0.0482
					Avg	0.2702	0.0482

Table 8.4: 1024Hz

Deep CNN	batch size: 10	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.7667	0.9500	0.6083	0.8333	0.7333	0.7783	0.1127
2	0.6528	0.5000	0.4792	0.2847	0.8472	0.5528	0.1880
3	0.2593	0.8796	0.2500	0.4722	0.3148	0.4352	0.2361
4	0.4861	0.9931	0.8403	1.0000	0.7708	0.8181	0.1880
5	1.0000	1.0000	0.2500	0.2569	1.0000	0.7014	0.3657
6	0.4264	1.0000	0.4496	0.3566	0.6667	0.5798	0.2343
7	0.2500	1.0000	0.9097	0.7917	1.0000	0.7903	0.2808
8	0.9417	0.6333	0.3667	0.4500	1.0000	0.6783	0.2546
9	0.2986	1.0000	0.9375	1.0000	0.7639	0.8000	0.2652
10	0.9931	0.9861	0.8056	0.9028	0.6111	0.8597	0.1417
					Avg	0.6994	0.2267

Deep CNN	batch size: 10	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.3500	0.2750	0.2500	0.2500	0.3000	0.2850	0.0374
2	0.3125	0.2708	0.2708	0.2500	0.2708	0.2750	0.0204
3	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.0000
4	0.3125	0.2917	0.2917	0.3542	0.3750	0.3250	0.0339
5	0.3333	0.3333	0.2500	0.2500	0.2708	0.2875	0.0382
6	0.2558	0.2727	0.2500	0.2500	0.2727	0.2603	0.0104
7	0.2500	0.3333	0.3125	0.3333	0.3125	0.3083	0.0306
8	0.3000	0.3250	0.3250	0.2500	0.3000	0.3000	0.0274
9	0.2708	0.2500	0.3125	0.3333	0.2500	0.2833	0.0339
10	0.3958	0.3125	0.2708	0.2917	0.2917	0.3125	0.0437
					Avg	0.2887	0.0276

Deep CNN	batch size: 10	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.2750	0.3000	0.2500	0.1500	0.3250	0.2600	0.0604
2	0.3125	0.2708	0.3125	0.2500	0.2500	0.2792	0.0283
3	0.2500	0.2778	0.2500	0.2222	0.2222	0.2444	0.0208
4	0.3125	0.2292	0.3750	0.2917	0.2500	0.2917	0.0510
5	0.2708	0.2500	0.2500	0.2500	0.1667	0.2375	0.0363
6	0.2500	0.3721	0.2558	0.3023	0.2093	0.2779	0.0556
7	0.2500	0.2708	0.2500	0.1458	0.2917	0.2417	0.0503
8	0.2500	0.2500	0.3250	0.2500	0.2500	0.2650	0.0300
9	0.2292	0.2708	0.2292	0.2708	0.3333	0.2667	0.0382
10	0.3333	0.3958	0.3750	0.2917	0.2292	0.3250	0.0598
					Avg	0.2689	0.0431

Table 8.5: 1024 Hz

Deep CNN	batch size: 20	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.3750	1.0000	0.2667	0.9333	0.5833	0.6317	0.2926
2	0.3819	0.7569	1.0000	0.5278	0.4792	0.6292	0.2226
3	0.2593	0.2500	0.3148	0.2593	0.5093	0.3185	0.0981
4	0.9861	0.9931	0.6597	1.0000	0.9583	0.9194	0.1306
5	0.3056	0.7778	0.2986	0.4028	0.9792	0.5528	0.2759
6	1.0000	0.9302	0.7442	0.2868	0.9380	0.7798	0.2609
7	0.5972	1.0000	1.0000	0.2778	0.8125	0.7375	0.2737
8	0.4833	0.4083	0.5500	0.9917	0.6500	0.6167	0.2036
9	0.9167	1.0000	0.9861	0.8958	0.9097	0.9417	0.0427
10	0.9722	0.2778	0.7083	0.9792	0.9931	0.7861	0.2754
					Avg	0.6913	0.2076

Deep CNN	batch size: 20	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.2500	0.3000	0.2500	0.3000	0.3750	0.2950	0.0458
2	0.2917	0.3333	0.3542	0.2917	0.2500	0.3042	0.0363
3	0.2500	0.2500	0.2500	0.2500	0.3889	0.2778	0.0556
4	0.3333	0.3125	0.3125	0.3125	0.3958	0.3333	0.0323
5	0.2500	0.3125	0.2917	0.3125	0.3333	0.3000	0.0283
6	0.3256	0.3409	0.2955	0.2727	0.2727	0.3015	0.0277
7	0.2708	0.2917	0.2708	0.2500	0.2917	0.2750	0.0156
8	0.3250	0.2500	0.2750	0.3000	0.4000	0.3100	0.0515
9	0.2708	0.3958	0.2708	0.2500	0.2708	0.2917	0.0527
10	0.4583	0.2708	0.2917	0.2917	0.3125	0.3250	0.0680
					Avg	0.3013	0.0414

Deep CNN	batch size: 20	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.2750	0.2250	0.2500	0.2500	0.1750	0.2350	0.0339
2	0.2708	0.2500	0.2708	0.2500	0.2917	0.2667	0.0156
3	0.1944	0.2500	0.2222	0.2500	0.2778	0.2389	0.0283
4	0.2917	0.3750	0.2500	0.2083	0.2083	0.2667	0.0624
5	0.2708	0.3333	0.2500	0.3125	0.1458	0.2625	0.0654
6	0.1591	0.2093	0.2093	0.2558	0.3023	0.2272	0.0485
7	0.1875	0.1458	0.2083	0.2500	0.2292	0.2042	0.0358
8	0.2000	0.1750	0.2750	0.2000	0.3000	0.2300	0.0485
9	0.2708	0.1875	0.3125	0.1667	0.2500	0.2375	0.0537
10	0.2917	0.2500	0.2292	0.3542	0.2708	0.2792	0.0429
					Avg	0.2448	0.0435

Table 8.6: 1024 Hz

Deep CNN	bias: False	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	1.0000	0.9917	1.0000	1.0000	0.3500	0.8683	0.2592
2	0.9028	0.9861	0.6944	0.9931	0.7014	0.8556	0.1326
3	0.9722	1.0000	1.0000	1.0000	1.0000	0.9944	0.0111
4	1.0000	0.9306	0.7917	0.9583	0.9931	0.9347	0.0758
5	1.0000	1.0000	0.8889	1.0000	0.9167	0.9611	0.0484
6	0.2481	0.3876	0.2481	0.9147	0.2481	0.4093	0.2584
7	1.0000	1.0000	0.9653	1.0000	0.2500	0.8431	0.2968
8	1.0000	0.9833	1.0000	0.8917	1.0000	0.9750	0.0422
9	1.0000	1.0000	0.8125	1.0000	1.0000	0.9625	0.0750
10	0.4236	1.0000	0.8194	1.0000	1.0000	0.8486	0.2237
					Avg	0.8653	0.1423

Deep CNN	bias: False	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.2750	0.3000	0.2750	0.2500	0.2750	0.2750	0.0158
2	0.3125	0.3333	0.3125	0.3958	0.3542	0.3417	0.0312
3	0.3333	0.3333	0.2500	0.3333	0.3611	0.3222	0.0377
4	0.4167	0.3542	0.3958	0.2500	0.3542	0.3542	0.0574
5	0.3750	0.2708	0.3750	0.2500	0.4375	0.3417	0.0705
6	0.2558	0.2955	0.2500	0.3636	0.2500	0.2830	0.0438
7	0.2917	0.2708	0.3125	0.3958	0.2500	0.3042	0.0503
8	0.4000	0.2500	0.4000	0.4000	0.3250	0.3550	0.0600
9	0.2917	0.3333	0.3333	0.4167	0.3958	0.3542	0.0456
10	0.3125	0.3125	0.2708	0.4375	0.3125	0.3292	0.0565
					Avg	0.3260	0.0469

Deep CNN	bias: False	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.2500	0.3500	0.1750	0.2000	0.2000	0.2350	0.0624
2	0.2500	0.2292	0.2708	0.3125	0.2708	0.2667	0.0276
3	0.3889	0.3333	0.2500	0.2778	0.3056	0.3111	0.0478
4	0.2917	0.2292	0.2292	0.2292	0.2708	0.2500	0.0264
5	0.3333	0.2708	0.3333	0.2292	0.2292	0.2792	0.0468
6	0.2500	0.2326	0.2558	0.1860	0.2558	0.2360	0.0264
7	0.2292	0.1458	0.2917	0.2500	0.2500	0.2333	0.0482
8	0.2250	0.3000	0.3000	0.2250	0.2750	0.2650	0.0339
9	0.3750	0.2292	0.2708	0.3333	0.2708	0.2958	0.0517
10	0.2708	0.2708	0.3333	0.3333	0.2083	0.2833	0.0468
					Avg	0.2655	0.0418

Table 8.7: 254 Hz

Deep CNN	bias: True	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	1.0000	1.0000	1.0000	1.0000	0.4167	0.8833	0.2333
2	0.4653	1.0000	0.9583	1.0000	0.8264	0.8500	0.2026
3	1.0000	0.2500	1.0000	1.0000	0.4259	0.7352	0.3291
4	0.9583	0.8542	0.7917	1.0000	0.7361	0.8681	0.0990
5	1.0000	1.0000	0.9028	0.9514	1.0000	0.9708	0.0389
6	1.0000	0.9690	0.3721	1.0000	0.3023	0.7287	0.3206
7	0.9583	0.9028	0.9861	1.0000	1.0000	0.9694	0.0366
8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9	0.9931	1.0000	1.0000	0.8750	0.9514	0.9639	0.0480
10	0.8750	0.6181	1.0000	1.0000	0.8750	0.8736	0.1395
					Avg	0.8843	0.1448

Deep CNN	bias: True	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.3000	0.3750	0.2750	0.2500	0.3000	0.3000	0.0418
2	0.3125	0.3333	0.3958	0.4167	0.2917	0.3500	0.0482
3	0.3611	0.2500	0.2778	0.3611	0.2778	0.3056	0.0465
4	0.3125	0.4167	0.3125	0.3333	0.2917	0.3333	0.0437
5	0.3125	0.3958	0.2708	0.2917	0.3542	0.3250	0.0449
6	0.3256	0.2727	0.2955	0.2727	0.2727	0.2878	0.0208
7	0.3750	0.3125	0.3333	0.3750	0.2917	0.3375	0.0333
8	0.3750	0.3750	0.3500	0.2500	0.4000	0.3500	0.0524
9	0.3542	0.4375	0.2708	0.3333	0.3333	0.3458	0.0537
10	0.3750	0.3333	0.3542	0.4375	0.3958	0.3792	0.0358
					Avg	0.3314	0.0421

Deep CNN	bias: True	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.2250	0.2000	0.3000	0.3000	0.2500	0.2550	0.0400
2	0.2292	0.2500	0.2708	0.2292	0.2708	0.2500	0.0186
3	0.2222	0.2500	0.2500	0.3056	0.2500	0.2556	0.0272
4	0.2500	0.2917	0.2708	0.1667	0.3125	0.2583	0.0503
5	0.1875	0.2292	0.2708	0.3125	0.2708	0.2542	0.0425
6	0.1591	0.3023	0.2093	0.2791	0.2558	0.2411	0.0513
7	0.2500	0.1667	0.2292	0.3125	0.2708	0.2458	0.0482
8	0.2000	0.3500	0.3250	0.3000	0.2000	0.2750	0.0632
9	0.2292	0.3333	0.2500	0.2708	0.2292	0.2625	0.0386
10	0.2708	0.2292	0.2917	0.2292	0.2292	0.2500	0.0264
					Avg	0.2548	0.0406

Table 8.8: 254 Hz

Deep CNN	bias: False	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.9167	0.9000	0.8833	1.0000	0.2500	0.7900	0.2730
2	0.7222	0.9722	0.6181	0.7778	0.9167	0.8014	0.1288
3	0.7778	0.5926	0.7407	0.6296	0.5926	0.6667	0.0777
4	0.7153	0.5764	0.9861	0.9444	0.7083	0.7861	0.1550
5	0.7569	0.6458	0.9444	0.9792	0.6806	0.8014	0.1363
6	0.9302	0.9690	0.5504	0.8992	0.9767	0.8651	0.1598
7	0.9722	0.8264	0.9167	0.2847	0.8472	0.7694	0.2478
8	0.8750	0.8667	1.0000	0.8167	0.9417	0.9000	0.0639
9	0.9792	0.5486	0.6458	0.9583	0.6875	0.7639	0.1734
10	0.8681	0.8958	0.7500	0.6458	0.8750	0.8069	0.0954
					Avg	0.7951	0.1511

Deep CNN	bias: False	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.2750	0.3500	0.2750	0.2500	0.2500	0.2800	0.0367
2	0.4167	0.2917	0.3333	0.2708	0.2500	0.3125	0.0589
3	0.2778	0.2778	0.2778	0.3056	0.2500	0.2778	0.0176
4	0.3125	0.3542	0.4167	0.3542	0.2917	0.3458	0.0429
5	0.3125	0.3333	0.3333	0.2708	0.3333	0.3167	0.0243
6	0.3023	0.2955	0.3182	0.2955	0.3182	0.3059	0.0103
7	0.3750	0.3125	0.3542	0.2500	0.3125	0.3208	0.0429
8	0.4000	0.3750	0.4500	0.3750	0.3250	0.3850	0.0406
9	0.4375	0.3333	0.3750	0.3125	0.2708	0.3458	0.0568
10	0.3750	0.4375	0.2917	0.3542	0.3542	0.3625	0.0468
					Avg	0.3253	0.0378

Deep CNN	bias: False	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.2500	0.2500	0.2500	0.2750	0.2500	0.2550	0.0100
2	0.1875	0.2917	0.3542	0.3125	0.3125	0.2917	0.0559
3	0.1944	0.2778	0.2778	0.3333	0.1667	0.2500	0.0609
4	0.2083	0.1667	0.3958	0.2500	0.3333	0.2708	0.0833
5	0.2083	0.1458	0.1875	0.2292	0.3542	0.2250	0.0702
6	0.2500	0.3023	0.2093	0.3721	0.2326	0.2733	0.0581
7	0.1458	0.1875	0.1667	0.2708	0.2292	0.2000	0.0449
8	0.3000	0.3250	0.2750	0.3000	0.2500	0.2900	0.0255
9	0.2500	0.2500	0.3125	0.3125	0.3333	0.2917	0.0349
10	0.3125	0.2708	0.2500	0.3125	0.2708	0.2833	0.0250
					Avg	0.2631	0.0469

Table 8.9: 1024 Hz

Deep CNN	bias: True	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.8500	0.6333	0.9167	0.8083	0.8417	0.8100	0.0951
2	0.6111	0.9097	0.7153	0.6806	0.6944	0.7222	0.1001
3	0.6019	0.7870	0.4537	0.2593	0.5000	0.5204	0.1737
4	0.6597	0.9167	1.0000	0.6667	0.6806	0.7847	0.1443
5	0.9583	0.2500	0.7361	0.8056	0.9931	0.7486	0.2667
6	1.0000	0.7209	0.4574	0.2481	0.2558	0.5364	0.2888
7	0.7917	0.9306	1.0000	0.8264	0.9236	0.8944	0.0755
8	0.8917	0.7917	0.8500	0.7750	0.9750	0.8567	0.0723
9	0.8958	0.9514	0.8958	0.9306	0.7708	0.8889	0.0627
10	0.9583	0.9514	0.9722	0.7361	0.9653	0.9167	0.0905
					Avg	0.7679	0.1370

Deep CNN	bias: True	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.3250	0.3000	0.3250	0.3250	0.3250	0.3200	0.0100
2	0.2708	0.3750	0.3750	0.3750	0.2917	0.3375	0.0464
3	0.2500	0.4444	0.2778	0.2500	0.3611	0.3167	0.0758
4	0.3958	0.3958	0.4583	0.3333	0.2917	0.3750	0.0574
5	0.3125	0.2500	0.2917	0.2500	0.2708	0.2750	0.0243
6	0.3023	0.3023	0.2955	0.2500	0.2500	0.2800	0.0246
7	0.3125	0.3125	0.3750	0.2917	0.2708	0.3125	0.0349
8	0.3000	0.2500	0.3750	0.3750	0.4250	0.3450	0.0620
9	0.3542	0.3750	0.3958	0.3125	0.3125	0.3500	0.0333
10	0.4167	0.3125	0.4167	0.3125	0.4375	0.3792	0.0550
					Avg	0.3291	0.0424

Deep CNN	bias: True	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1	0.1500	0.2500	0.2250	0.2000	0.1500	0.1950	0.0400
2	0.1875	0.2708	0.2500	0.2500	0.3750	0.2667	0.0610
3	0.2222	0.2778	0.2500	0.2500	0.3333	0.2667	0.0377
4	0.2708	0.2083	0.3958	0.2708	0.2708	0.2833	0.0612
5	0.2292	0.2500	0.3125	0.2083	0.2500	0.2500	0.0349
6	0.3409	0.3256	0.2791	0.2558	0.2326	0.2868	0.0410
7	0.2083	0.1667	0.3542	0.1875	0.2708	0.2375	0.0680
8	0.1500	0.3000	0.3000	0.2750	0.2750	0.2600	0.0561
9	0.2292	0.2708	0.2500	0.2708	0.1875	0.2417	0.0312
10	0.1875	0.2292	0.3125	0.3333	0.3542	0.2833	0.0640
					Avg	0.2571	0.0495

Table 8.10: 1024 Hz

Deep CNN	dropout = 0.001	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.9000	1.0000	0.2750	1.0000	0.8350	0.2827
2.0000	0.9514	0.9792	0.9306	0.6111	0.5347	0.8014	0.1887
3.0000	1.0000	1.0000	0.2500	1.0000	1.0000	0.8500	0.3000
4.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
5.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
6.0000	1.0000	0.2481	0.3953	0.2636	0.2558	0.4326	0.2889
7.0000	1.0000	1.0000	1.0000	0.2500	1.0000	0.8500	0.3000
8.0000	0.9667	0.7667	1.0000	1.0000	1.0000	0.9467	0.0909
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	1.0000	0.9861	0.9861	1.0000	0.9944	0.0068
					Avg	0.8710	0.1458

Deep CNN	dropout = 0.001	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.2500	0.2750	0.2500	0.2750	0.2750	0.0274
2.0000	0.3542	0.2917	0.2917	0.3333	0.2708	0.3083	0.0306
3.0000	0.3611	0.3333	0.2500	0.3056	0.3611	0.3222	0.0416
4.0000	0.2708	0.4167	0.3542	0.3333	0.2917	0.3333	0.0510
5.0000	0.2708	0.2708	0.2708	0.2708	0.3542	0.2875	0.0333
6.0000	0.4186	0.2500	0.2727	0.2500	0.2500	0.2883	0.0658
7.0000	0.2500	0.2708	0.3333	0.2500	0.2917	0.2792	0.0312
8.0000	0.3750	0.3750	0.3250	0.3500	0.3250	0.3500	0.0224
9.0000	0.3750	0.3125	0.2917	0.3333	0.3333	0.3292	0.0276
10.0000	0.3958	0.2917	0.3542	0.2917	0.3542	0.3375	0.0404
					Avg	0.3110	0.0371

Deep CNN	dropout = 0.001	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.2500	0.1250	0.2500	0.2000	0.2150	0.0490
2.0000	0.2500	0.3125	0.2708	0.2292	0.2917	0.2708	0.0295
3.0000	0.3056	0.0556	0.2500	0.3611	0.2500	0.2444	0.1030
4.0000	0.3333	0.2292	0.2083	0.2708	0.2917	0.2667	0.0445
5.0000	0.2292	0.2292	0.2083	0.1875	0.2500	0.2208	0.0212
6.0000	0.2955	0.2558	0.2791	0.2558	0.2326	0.2637	0.0216
7.0000	0.2292	0.2917	0.2500	0.2500	0.2292	0.2500	0.0228
8.0000	0.2750	0.3250	0.1750	0.3000	0.2250	0.2600	0.0539
9.0000	0.2500	0.2292	0.2708	0.2083	0.3125	0.2542	0.0358
10.0000	0.2917	0.2292	0.1667	0.2917	0.2708	0.2500	0.0475
					Avg	0.2496	0.0429

Table 8.11: 254 Hz

Deep CNN	dropout = 0.002	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
2.0000	0.9514	1.0000	1.0000	0.4306	1.0000	0.8764	0.2237
3.0000	1.0000	1.0000	0.3148	0.8148	1.0000	0.8259	0.2654
4.0000	1.0000	1.0000	0.8333	0.9444	1.0000	0.9556	0.0648
5.0000	0.9861	1.0000	1.0000	0.9861	1.0000	0.9944	0.0068
6.0000	1.0000	1.0000	1.0000	1.0000	0.2481	0.8496	0.3008
7.0000	0.6528	1.0000	0.2500	1.0000	1.0000	0.7806	0.2974
8.0000	1.0000	0.9833	1.0000	0.6917	0.7500	0.8850	0.1354
9.0000	1.0000	0.9514	1.0000	1.0000	1.0000	0.9903	0.0194
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.9158	0.1314

Deep CNN	dropout = 0.002	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.2500	0.4000	0.2750	0.2750	0.3000	0.0524
2.0000	0.3750	0.4375	0.3542	0.2917	0.2708	0.3458	0.0598
3.0000	0.4722	0.3056	0.2778	0.2778	0.2500	0.3167	0.0797
4.0000	0.2708	0.4375	0.3125	0.3750	0.3125	0.3417	0.0583
5.0000	0.2500	0.2500	0.3125	0.2708	0.3542	0.2875	0.0404
6.0000	0.3488	0.2500	0.3864	0.2727	0.2500	0.3016	0.0558
7.0000	0.3125	0.3542	0.2500	0.3125	0.3542	0.3167	0.0382
8.0000	0.4000	0.3500	0.4250	0.3000	0.4000	0.3750	0.0447
9.0000	0.4167	0.3333	0.3542	0.2708	0.3333	0.3417	0.0468
10.0000	0.3750	0.3125	0.2708	0.3333	0.2708	0.3125	0.0395
					Avg	0.3239	0.0516

Deep CNN	dropout = 0.002	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.1750	0.3000	0.3250	0.1500	0.3000	0.2500	0.0725
2.0000	0.2708	0.3333	0.2500	0.2292	0.3333	0.2833	0.0429
3.0000	0.1944	0.2500	0.2222	0.2222	0.2222	0.2222	0.0176
4.0000	0.3333	0.3125	0.1458	0.2083	0.1667	0.2333	0.0761
5.0000	0.3333	0.2500	0.1250	0.2083	0.1042	0.2042	0.0837
6.0000	0.2955	0.3023	0.2558	0.2326	0.2558	0.2684	0.0264
7.0000	0.2292	0.2917	0.2500	0.1458	0.2500	0.2333	0.0482
8.0000	0.4250	0.2500	0.2750	0.2250	0.3000	0.2950	0.0696
9.0000	0.2708	0.4167	0.3542	0.2917	0.1875	0.3042	0.0775
10.0000	0.2708	0.3125	0.1875	0.3542	0.2292	0.2708	0.0589
					Avg	0.2565	0.0574

Table 8.12: 254 Hz

Deep CNN	dropout = 0.01	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.5083	1.0000	0.9333	0.9083	1.0000	0.8700	0.1844
2.0000	1.0000	1.0000	1.0000	0.9375	1.0000	0.9875	0.0250
3.0000	1.0000	0.2500	1.0000	0.8148	1.0000	0.8130	0.2905
4.0000	0.9167	0.9375	1.0000	0.9514	1.0000	0.9611	0.0336
5.0000	1.0000	1.0000	1.0000	1.0000	0.9306	0.9861	0.0278
6.0000	0.6977	1.0000	1.0000	0.9767	1.0000	0.9349	0.1189
7.0000	0.3056	0.7500	1.0000	1.0000	1.0000	0.8111	0.2707
8.0000	1.0000	1.0000	0.9917	1.0000	1.0000	0.9983	0.0033
9.0000	1.0000	1.0000	1.0000	1.0000	0.9931	0.9986	0.0028
10.0000	0.3056	1.0000	1.0000	0.9931	1.0000	0.8597	0.2771
					Avg	0.9220	0.1234

Deep CNN	dropout = 0.01	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.3750	0.3750	0.2750	0.3750	0.3350	0.0490
2.0000	0.2917	0.2917	0.3333	0.2500	0.4167	0.3167	0.0565
3.0000	0.3889	0.2500	0.3889	0.2778	0.4167	0.3444	0.0671
4.0000	0.2917	0.2500	0.3542	0.2708	0.3125	0.2958	0.0358
5.0000	0.3333	0.2917	0.3750	0.3333	0.2708	0.3208	0.0363
6.0000	0.3256	0.2500	0.2500	0.4545	0.2727	0.3106	0.0771
7.0000	0.2500	0.2917	0.2500	0.2917	0.3125	0.2792	0.0250
8.0000	0.3750	0.3500	0.3250	0.4000	0.4750	0.3850	0.0515
9.0000	0.3750	0.2917	0.2708	0.3542	0.4375	0.3458	0.0598
10.0000	0.2500	0.3125	0.3542	0.4167	0.3750	0.3417	0.0568
					Avg	0.3275	0.0515

Deep CNN	dropout = 0.01	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2000	0.2500	0.3000	0.2500	0.3500	0.2700	0.0510
2.0000	0.2292	0.3542	0.2500	0.1667	0.3542	0.2708	0.0734
3.0000	0.2222	0.2500	0.1944	0.1944	0.3333	0.2389	0.0515
4.0000	0.2500	0.1667	0.2708	0.2292	0.4167	0.2667	0.0827
5.0000	0.2708	0.2083	0.2500	0.1875	0.1875	0.2208	0.0339
6.0000	0.3182	0.2558	0.1860	0.2093	0.2558	0.2450	0.0455
7.0000	0.2500	0.2708	0.3958	0.2917	0.2500	0.2917	0.0543
8.0000	0.4000	0.3000	0.3250	0.2000	0.3250	0.3100	0.0644
9.0000	0.2917	0.2917	0.3542	0.3125	0.4583	0.3417	0.0626
10.0000	0.2500	0.2292	0.2292	0.3333	0.2917	0.2667	0.0404
					Avg	0.2722	0.0560

Table 8.13: 254 Hz

Deep CNN	dropout = 0.1	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	0.2500	0.5333	0.7567	0.3112
2.0000	0.5833	0.9514	0.9306	0.9861	1.0000	0.8903	0.1554
3.0000	1.0000	1.0000	1.0000	0.2500	1.0000	0.8500	0.3000
4.0000	0.9236	0.9792	1.0000	0.8750	1.0000	0.9556	0.0490
5.0000	1.0000	0.9167	0.9931	1.0000	1.0000	0.9819	0.0327
6.0000	0.2481	1.0000	1.0000	1.0000	1.0000	0.8496	0.3008
7.0000	0.9306	0.5625	1.0000	0.9514	1.0000	0.8889	0.1654
8.0000	1.0000	0.3250	0.9000	0.9833	1.0000	0.8417	0.2610
9.0000	1.0000	1.0000	0.9931	1.0000	0.9792	0.9944	0.0081
10.0000	1.0000	0.9653	1.0000	1.0000	1.0000	0.9931	0.0139
					Avg	0.9002	0.1598

Deep CNN	dropout = 0.1	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.3500	0.4250	0.2500	0.3000	0.3250	0.0592
2.0000	0.3958	0.2917	0.2917	0.2500	0.3333	0.3125	0.0493
3.0000	0.3056	0.3333	0.3333	0.2500	0.3333	0.3111	0.0324
4.0000	0.3750	0.2500	0.3125	0.3750	0.3750	0.3375	0.0500
5.0000	0.3125	0.2708	0.3125	0.3125	0.3542	0.3125	0.0264
6.0000	0.2558	0.2500	0.2727	0.3409	0.3182	0.2875	0.0358
7.0000	0.2708	0.2708	0.2500	0.3125	0.4167	0.3042	0.0598
8.0000	0.3750	0.2500	0.3250	0.4000	0.3000	0.3300	0.0534
9.0000	0.2500	0.3542	0.2917	0.2917	0.3750	0.3125	0.0456
10.0000	0.3542	0.3542	0.3125	0.3958	0.3333	0.3500	0.0276
					Avg	0.3183	0.0440

Deep CNN	dropout = 0.1	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2000	0.3500	0.2000	0.2500	0.1750	0.2350	0.0624
2.0000	0.1667	0.2083	0.2917	0.3542	0.3333	0.2708	0.0722
3.0000	0.4167	0.1389	0.1111	0.2500	0.1944	0.2222	0.1083
4.0000	0.2083	0.2917	0.2500	0.1667	0.2292	0.2292	0.0417
5.0000	0.2917	0.2500	0.2292	0.3125	0.1667	0.2500	0.0510
6.0000	0.2500	0.2558	0.3721	0.2093	0.1395	0.2453	0.0758
7.0000	0.2292	0.2500	0.1250	0.3333	0.1875	0.2250	0.0690
8.0000	0.1750	0.2500	0.2750	0.4500	0.3500	0.3000	0.0935
9.0000	0.2917	0.3542	0.3125	0.3125	0.1875	0.2917	0.0559
10.0000	0.2917	0.3542	0.2708	0.2083	0.2500	0.2750	0.0482
					Avg	0.2544	0.0678

Table 8.14: 254 Hz

Deep CNN	dropout = 0.25	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	0.7250	1.0000	1.0000	0.9450	0.1100
2.0000	1.0000	1.0000	0.9861	0.9167	1.0000	0.9806	0.0324
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	0.9375	0.9375	0.8681	1.0000	0.9931	0.9472	0.0476
5.0000	0.8958	1.0000	0.7361	1.0000	0.9236	0.9111	0.0968
6.0000	0.9922	0.4806	1.0000	1.0000	0.9225	0.8791	0.2013
7.0000	0.6944	0.9931	1.0000	0.9028	0.9167	0.9014	0.1106
8.0000	1.0000	0.7667	1.0000	1.0000	0.9917	0.9517	0.0926
9.0000	1.0000	0.9028	1.0000	1.0000	1.0000	0.9806	0.0389
10.0000	0.9722	0.8958	1.0000	1.0000	1.0000	0.9736	0.0403
					Avg	0.9470	0.0771

Deep CNN	dropout = 0.25	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.3250	0.3000	0.3000	0.3000	0.2950	0.0245
2.0000	0.4375	0.3542	0.2917	0.3125	0.3542	0.3500	0.0500
3.0000	0.2500	0.2778	0.3056	0.3333	0.3333	0.3000	0.0324
4.0000	0.3333	0.3542	0.3542	0.2917	0.3125	0.3292	0.0243
5.0000	0.3542	0.2917	0.2917	0.3333	0.2708	0.3083	0.0306
6.0000	0.2791	0.2727	0.2955	0.2727	0.3864	0.3013	0.0434
7.0000	0.2708	0.3125	0.4583	0.3333	0.3542	0.3458	0.0626
8.0000	0.3750	0.3000	0.3250	0.2750	0.4250	0.3400	0.0539
9.0000	0.3125	0.3125	0.4167	0.3125	0.3750	0.3458	0.0429
10.0000	0.3542	0.3333	0.4167	0.4583	0.3750	0.3875	0.0449
					Avg	0.3303	0.0409

Deep CNN	dropout = 0.25	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.3000	0.1750	0.2500	0.3750	0.2850	0.0682
2.0000	0.3125	0.3125	0.2083	0.1250	0.3125	0.2542	0.0761
3.0000	0.2500	0.2778	0.2500	0.2778	0.2778	0.2667	0.0136
4.0000	0.2292	0.3125	0.3125	0.1667	0.1875	0.2417	0.0612
5.0000	0.2292	0.2500	0.3125	0.2292	0.2083	0.2458	0.0358
6.0000	0.2500	0.2791	0.2326	0.2326	0.2326	0.2453	0.0182
7.0000	0.1875	0.2083	0.3125	0.1667	0.2292	0.2208	0.0503
8.0000	0.2250	0.3000	0.4250	0.3250	0.3500	0.3250	0.0652
9.0000	0.3125	0.2083	0.3333	0.2292	0.2500	0.2667	0.0482
10.0000	0.2708	0.1875	0.3125	0.2083	0.2917	0.2542	0.0482
					Avg	0.2605	0.0485

Table 8.15: 254 Hz

Deep CNN	dropout = 0.5	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	0.9250	1.0000	0.7167	1.0000	0.9283	0.1097
2.0000	0.8056	1.0000	1.0000	1.0000	1.0000	0.9611	0.0778
3.0000	1.0000	1.0000	0.9907	0.8981	0.7593	0.9296	0.0934
4.0000	1.0000	0.7778	0.9931	0.6319	0.9236	0.8653	0.1414
5.0000	1.0000	0.4444	0.8819	1.0000	0.2500	0.7153	0.3098
6.0000	0.8605	0.6744	0.9535	0.9767	0.4961	0.7922	0.1824
7.0000	1.0000	1.0000	1.0000	0.9375	0.9236	0.9722	0.0343
8.0000	0.2667	1.0000	0.9333	0.6250	1.0000	0.7650	0.2852
9.0000	0.6806	0.9583	0.7292	1.0000	0.8264	0.8389	0.1245
10.0000	0.6111	0.8750	0.8125	0.7083	1.0000	0.8014	0.1341
					Avg	0.8569	0.1493

Deep CNN	dropout = 0.5	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3250	0.3500	0.2750	0.2500	0.3500	0.3100	0.0406
2.0000	0.2917	0.3333	0.3125	0.2708	0.2917	0.3000	0.0212
3.0000	0.3056	0.3056	0.4167	0.3611	0.2500	0.3278	0.0567
4.0000	0.3333	0.3958	0.3333	0.3333	0.3333	0.3458	0.0250
5.0000	0.3333	0.2708	0.4375	0.3958	0.2500	0.3375	0.0714
6.0000	0.3023	0.3182	0.3409	0.2500	0.2955	0.3014	0.0301
7.0000	0.3542	0.2708	0.3125	0.3750	0.2917	0.3208	0.0386
8.0000	0.2500	0.4250	0.2750	0.3500	0.4250	0.3450	0.0731
9.0000	0.4167	0.2917	0.3750	0.3750	0.3333	0.3583	0.0425
10.0000	0.3542	0.2708	0.4167	0.3333	0.3750	0.3500	0.0482
					Avg	0.3297	0.0448

Deep CNN	dropout = 0.5	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.2750	0.2500	0.3000	0.1750	0.2550	0.0430
2.0000	0.3125	0.1875	0.2708	0.2917	0.2708	0.2667	0.0425
3.0000	0.2222	0.2500	0.3611	0.2500	0.2222	0.2611	0.0515
4.0000	0.2500	0.2917	0.3333	0.2917	0.3125	0.2958	0.0276
5.0000	0.3333	0.3125	0.2917	0.2292	0.2500	0.2833	0.0386
6.0000	0.2955	0.2558	0.4419	0.2326	0.1395	0.2730	0.0988
7.0000	0.2500	0.2917	0.2500	0.3333	0.2083	0.2667	0.0425
8.0000	0.2500	0.2500	0.3500	0.2250	0.4000	0.2950	0.0678
9.0000	0.4167	0.1875	0.2500	0.3125	0.3125	0.2958	0.0761
10.0000	0.2500	0.2500	0.3125	0.2500	0.4375	0.3000	0.0729
					Avg	0.2792	0.0561

Table 8.16: 254 Hz

Deep CNN	dropout = 0.001	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.9583	0.7583	1.0000	0.9417	0.2500	0.7817	0.2785
2.0000	0.9861	0.5903	0.7292	1.0000	0.9931	0.8597	0.1692
3.0000	1.0000	0.2500	0.9444	1.0000	0.9074	0.8204	0.2873
4.0000	0.6944	1.0000	0.8194	0.9514	0.8611	0.8653	0.1066
5.0000	1.0000	0.7361	0.9097	0.9861	0.9722	0.9208	0.0974
6.0000	0.9225	0.6589	0.9225	0.9147	0.8295	0.8496	0.1016
7.0000	1.0000	0.9792	1.0000	1.0000	0.9375	0.9833	0.0243
8.0000	1.0000	0.8083	0.9750	0.9833	1.0000	0.9533	0.0731
9.0000	0.9097	0.9375	0.7431	0.9792	0.9306	0.9000	0.0816
10.0000	0.8472	0.9653	1.0000	0.9236	0.6944	0.8861	0.1085
					Avg	0.8820	0.1328

Deep CNN	dropout = 0.001	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3750	0.3000	0.2500	0.3750	0.2500	0.3100	0.0561
2.0000	0.3750	0.3542	0.3542	0.3750	0.2917	0.3500	0.0306
3.0000	0.3333	0.2500	0.3056	0.2778	0.2500	0.2833	0.0324
4.0000	0.3333	0.3750	0.2500	0.3958	0.3542	0.3417	0.0503
5.0000	0.3125	0.3333	0.4375	0.2708	0.2917	0.3292	0.0580
6.0000	0.3256	0.2955	0.2727	0.3409	0.3409	0.3151	0.0269
7.0000	0.2917	0.3333	0.3125	0.3750	0.2917	0.3208	0.0312
8.0000	0.3250	0.4000	0.5500	0.3500	0.2750	0.3800	0.0941
9.0000	0.3542	0.3333	0.2917	0.3542	0.3542	0.3375	0.0243
10.0000	0.3958	0.3333	0.4167	0.3750	0.2917	0.3625	0.0449
					Avg	0.3330	0.0449

Deep CNN	dropout = 0.001	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4000	0.2000	0.2250	0.2500	0.2500	0.2650	0.0700
2.0000	0.3125	0.2500	0.2292	0.3125	0.3125	0.2833	0.0363
3.0000	0.1667	0.2500	0.3056	0.2778	0.3333	0.2667	0.0572
4.0000	0.2917	0.2292	0.2500	0.3125	0.2500	0.2667	0.0306
5.0000	0.2917	0.3125	0.1875	0.2917	0.2083	0.2583	0.0503
6.0000	0.2727	0.3023	0.2558	0.1860	0.2791	0.2592	0.0395
7.0000	0.2708	0.3750	0.2917	0.2292	0.2917	0.2917	0.0475
8.0000	0.3250	0.2500	0.2000	0.2500	0.2250	0.2500	0.0418
9.0000	0.3125	0.2292	0.2708	0.4375	0.2500	0.3000	0.0741
10.0000	0.2083	0.3333	0.3542	0.3542	0.2708	0.3042	0.0568
					Avg	0.2745	0.0504

Table 8.17: 1024 Hz

Deep CNN	dropout = 0.002	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.9917	0.9500	0.9417	1.0000	0.9767	0.0255
2.0000	1.0000	0.8611	1.0000	0.9931	0.9931	0.9694	0.0543
3.0000	1.0000	1.0000	1.0000	1.0000	0.9907	0.9981	0.0037
4.0000	0.7569	1.0000	1.0000	0.9375	1.0000	0.9389	0.0941
5.0000	1.0000	1.0000	0.8681	0.9514	0.8958	0.9431	0.0537
6.0000	0.9535	0.9922	0.5426	0.4729	0.4031	0.6729	0.2492
7.0000	0.5903	0.9792	0.9583	0.8750	0.2500	0.7306	0.2775
8.0000	1.0000	1.0000	1.0000	0.9917	0.7000	0.9383	0.1192
9.0000	0.9097	0.3125	0.3125	0.9306	0.9514	0.6833	0.3031
10.0000	0.2500	1.0000	1.0000	0.8125		0.7656	0.3074
					Avg	0.8617	0.1488

Deep CNN	dropout = 0.002	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3500	0.3000	0.3250	0.3000	0.3000	0.3150	0.0200
2.0000	0.4167	0.2500	0.3542	0.2917	0.2917	0.3208	0.0583
3.0000	0.3889	0.2500	0.3611	0.2500	0.5000	0.3500	0.0940
4.0000	0.2917	0.3750	0.4167	0.3542	0.2708	0.3417	0.0537
5.0000	0.3542	0.3333	0.3333	0.2708	0.2708	0.3125	0.0349
6.0000	0.3256	0.3409	0.3182	0.3182	0.2955	0.3197	0.0147
7.0000	0.3750	0.2917	0.2708	0.3958	0.2500	0.3167	0.0580
8.0000	0.3250	0.3000	0.4750	0.4000	0.3500	0.3700	0.0620
9.0000	0.3542	0.2500	0.2708	0.2917	0.2708	0.2875	0.0358
10.0000	0.2500	0.4792	0.3333	0.3333	0.4375	0.3667	0.0819
					Avg	0.3300	0.0513

Deep CNN	dropout = 0.002	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.3000	0.3500	0.2750	0.2500	0.2950	0.0332
2.0000	0.3750	0.3542	0.2292	0.3125	0.2292	0.3000	0.0612
3.0000	0.2500	0.2500	0.1389	0.2222	0.3333	0.2389	0.0624
4.0000	0.2292	0.2917	0.3333	0.3333	0.3333	0.3042	0.0408
5.0000	0.1875	0.2083	0.1875	0.1250	0.2708	0.1958	0.0468
6.0000	0.2955	0.3256	0.2093	0.1860	0.3023	0.2637	0.0554
7.0000	0.2708	0.1667	0.2917	0.3542	0.2500	0.2667	0.0610
8.0000	0.3250	0.3250	0.2250	0.4500	0.3250	0.3300	0.0714
9.0000	0.2083	0.2292	0.2708	0.2083	0.2708	0.2375	0.0283
10.0000	0.2500	0.3542	0.2500	0.3542	0.2917	0.3000	0.0468
					Avg	0.2732	0.0507

Table 8.18: 1024 Hz

Deep CNN	dropout = 0.01	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.9833	0.8417	0.8167	0.9000	0.2833	0.7650	0.2476
2.0000	0.8264	0.7778	0.9931	0.4722	0.9514	0.8042	0.1837
3.0000	0.9907	1.0000	0.9630	1.0000	0.9815	0.9870	0.0139
4.0000	0.8750	0.4375	0.9722	1.0000	0.6597	0.7889	0.2125
5.0000	0.9861	0.6528	0.9097	0.8472	1.0000	0.8792	0.1259
6.0000	0.9845	0.4884	0.9612	0.9690	0.9845	0.8775	0.1948
7.0000	1.0000	1.0000	0.9861	0.9931	1.0000	0.9958	0.0056
8.0000	0.9917	0.9333	1.0000	0.8750	1.0000	0.9600	0.0493
9.0000	0.9792	0.8750	1.0000	1.0000	0.9653	0.9639	0.0464
10.0000	0.8750	0.9028	1.0000	0.8403	0.9931	0.9222	0.0639
					Avg	0.8944	0.1143

Deep CNN	dropout = 0.01	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.3000	0.3250	0.3000	0.2750	0.3000	0.0158
2.0000	0.3333	0.3125	0.3958	0.3333	0.3125	0.3375	0.0306
3.0000	0.3611	0.3611	0.2500	0.3889	0.3333	0.3389	0.0478
4.0000	0.3542	0.3125	0.3542	0.3958	0.3333	0.3500	0.0276
5.0000	0.2917	0.3750	0.3542	0.3125	0.3542	0.3375	0.0306
6.0000	0.2791	0.2500	0.2727	0.2955	0.2500	0.2695	0.0175
7.0000	0.3125	0.2708	0.2917	0.3542	0.3333	0.3125	0.0295
8.0000	0.3000	0.4750	0.3750	0.4000	0.3250	0.3750	0.0612
9.0000	0.2917	0.3750	0.2500	0.3125	0.3958	0.3250	0.0537
10.0000	0.3750	0.3333	0.3333	0.3750	0.2917	0.3417	0.0312
					Avg	0.3288	0.0346

Deep CNN	dropout = 0.01	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2250	0.2250	0.2750	0.4000	0.2500	0.2750	0.0652
2.0000	0.2708	0.5200	0.1250	0.2292	0.2292	0.2748	0.1317
3.0000	0.1389	0.1944	0.2778	0.2778	0.2500	0.2278	0.0539
4.0000	0.2917	0.3333	0.2917	0.3333	0.2500	0.3000	0.0312
5.0000	0.2500	0.2292	0.2708	0.2083	0.2500	0.2417	0.0212
6.0000	0.2727	0.2326	0.2558	0.1395	0.1628	0.2127	0.0523
7.0000	0.2500	0.2917	0.3125	0.2292	0.1667	0.2500	0.0510
8.0000	0.3750	0.2500	0.3750	0.2000	0.3750	0.3150	0.0752
9.0000	0.2292	0.1875	0.2083	0.2500	0.2292	0.2208	0.0212
10.0000	0.1875	0.3333	0.3125	0.2500	0.3125	0.2792	0.0537
					Avg	0.2597	0.0557

Table 8.19: 1024 Hz

Deep CNN	dropout = 0.1	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.6083	0.9833	0.8583	1.0000	0.9833	0.8867	0.1482
2.0000	0.2500	0.9722	1.0000	1.0000	0.8542	0.8153	0.2877
3.0000	0.9722	0.6759	1.0000	0.7500	0.8704	0.8537	0.1250
4.0000	0.2500	0.9722	0.9444	1.0000	0.9236	0.8181	0.2852
5.0000	1.0000	1.0000	0.2500	0.8333	0.7222	0.7611	0.2764
6.0000	0.9612	0.9147	1.0000	0.9845	1.0000	0.9721	0.0320
7.0000	1.0000	0.9861	0.8889	0.2500	0.9861	0.8222	0.2889
8.0000	1.0000	1.0000	0.6083	1.0000	0.9750	0.9167	0.1545
9.0000	0.8333	0.9653	0.9514	0.9514	0.3403	0.8083	0.2389
10.0000	0.8611	1.0000	0.7986	0.9444	1.0000	0.9208	0.0795
					Avg	0.8575	0.1916

Deep CNN	dropout = 0.1	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3750	0.3750	0.3000	0.3750	0.2750	0.3400	0.0436
2.0000	0.2500	0.3542	0.3125	0.4375	0.3750	0.3458	0.0626
3.0000	0.3333	0.2778	0.3889	0.3333	0.3889	0.3444	0.0416
4.0000	0.2500	0.3125	0.3333	0.2917	0.2708	0.2917	0.0295
5.0000	0.2917	0.3958	0.2500	0.2708	0.3333	0.3083	0.0517
6.0000	0.3721	0.3182	0.3182	0.3409	0.2955	0.3290	0.0259
7.0000	0.3125	0.4167	0.3333	0.2500	0.3542	0.3333	0.0543
8.0000	0.3250	0.3500	0.3000	0.3250	0.4000	0.3400	0.0339
9.0000	0.3542	0.2917	0.3125	0.3333	0.3333	0.3250	0.0212
10.0000	0.3333	0.2917	0.3958	0.2917	0.3958	0.3417	0.0468
					Avg	0.3299	0.0411

Deep CNN	dropout = 0.1	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.2000	0.2000	0.1500	0.1750	0.2050	0.0510
2.0000	0.2500	0.2292	0.2708	0.2917	0.3125	0.2708	0.0295
3.0000	0.4167	0.3056	0.3333	0.2500	0.3056	0.3222	0.0544
4.0000	0.2500	0.3333	0.3125	0.2292	0.2708	0.2792	0.0386
5.0000	0.3542	0.1667	0.2500	0.2500	0.2292	0.2500	0.0604
6.0000	0.2500	0.2791	0.2093	0.1860	0.1860	0.2221	0.0368
7.0000	0.2708	0.2083	0.2917	0.2500	0.3750	0.2792	0.0553
8.0000	0.3500	0.2750	0.3000	0.2250	0.3000	0.2900	0.0406
9.0000	0.1458	0.2500	0.2917	0.1875	0.2917	0.2333	0.0580
10.0000	0.2292	0.3125	0.2500	0.2917	0.2708	0.2708	0.0295
					Avg	0.2623	0.0454

Table 8.20: 1024 Hz

Deep CNN	dropout = 0.25	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.9667	0.9000	0.4583	0.9833	0.9917	0.8600	0.2034
2.0000	0.8889	1.0000	1.0000	0.3681	0.8542	0.8222	0.2345
3.0000	0.6667	0.2963	0.2500	0.9907	0.4074	0.5222	0.2752
4.0000	0.9653	0.8681	0.7431	1.0000	0.7292	0.8611	0.1109
5.0000	1.0000	0.9931	0.9722	0.4722	0.9931	0.8861	0.2072
6.0000	0.5349	0.8140	0.9612	0.2481	0.9922	0.7101	0.2820
7.0000	0.6667	0.5903	1.0000	0.9931	0.8194	0.8139	0.1664
8.0000	0.8667	1.0000	0.4250	0.8417	0.9083	0.8083	0.1991
9.0000	0.2500	0.9931	0.9444	0.9097	0.9306	0.8056	0.2791
10.0000	0.8542	0.9444	0.9722	0.8611	0.7014	0.8667	0.0945
					Avg	0.7956	0.2052

Deep CNN	dropout = 0.25	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.2750	0.3750	0.2750	0.2500	0.2950	0.0430
2.0000	0.3333	0.4167	0.3333	0.2917	0.2917	0.3333	0.0456
3.0000	0.2778	0.2500	0.2500	0.2500	0.3333	0.2722	0.0324
4.0000	0.2917	0.3542	0.3542	0.3750	0.2917	0.3333	0.0349
5.0000	0.3125	0.4167	0.2917	0.2917	0.4167	0.3458	0.0583
6.0000	0.2558	0.2955	0.2955	0.2500	0.2955	0.2784	0.0209
7.0000	0.3542	0.4167	0.3542	0.3333	0.3125	0.3542	0.0349
8.0000	0.3250	0.3000	0.3250	0.4000	0.4500	0.3600	0.0561
9.0000	0.2917	0.2917	0.3125	0.2917	0.3333	0.3042	0.0167
10.0000	0.2708	0.3125	0.2708	0.4167	0.3542	0.3250	0.0553
					Avg	0.3201	0.0398

Deep CNN	dropout = 0.25	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.3750	0.3000	0.2250	0.2250	0.2750	0.0570
2.0000	0.3542	0.2917	0.2292	0.2292	0.2500	0.2708	0.0475
3.0000	0.2222	0.1944	0.2500	0.2222	0.2222	0.2222	0.0176
4.0000	0.2292	0.2708	0.3125	0.3125	0.1667	0.2583	0.0553
5.0000	0.3333	0.2083	0.3333	0.2917	0.2292	0.2792	0.0520
6.0000	0.2273	0.3488	0.1163	0.2558	0.2558	0.2408	0.0746
7.0000	0.2292	0.1458	0.1042	0.2708	0.1667	0.1833	0.0595
8.0000	0.3000	0.2250	0.2500	0.2250	0.3750	0.2750	0.0570
9.0000	0.2500	0.2500	0.2708	0.2917	0.2500	0.2625	0.0167
10.0000	0.3542	0.3958	0.2917	0.2500	0.3333	0.3250	0.0503
					Avg	0.2592	0.0488

Table 8.21: 1024 Hz

Deep CNN	dropout = 0.5	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.5583	0.8917	0.9833	0.8000	0.9667	0.8400	0.1550
2.0000	0.6875	0.8125	0.3958	0.7153	0.9514	0.7125	0.1833
3.0000	0.8889	0.3148	0.8704	0.3056	0.2500	0.5259	0.2897
4.0000	0.8750	0.9653	0.7847	0.9375	0.8542	0.8833	0.0637
5.0000	0.8958	1.0000	0.8819	0.8819	0.8958	0.9111	0.0449
6.0000	0.7984	0.8450	0.8140	0.5969	0.9457	0.8000	0.1138
7.0000	0.7708	1.0000	0.8403	0.2500	0.9722	0.7667	0.2717
8.0000	0.8833	0.9750	0.8833	0.9083	0.9750	0.9250	0.0418
9.0000	0.9167	0.8611	0.3611	0.9792	1.0000	0.8236	0.2363
10.0000	0.9653	0.7014	0.9653	0.6250	0.6389	0.7792	0.1541
					Avg	0.7967	0.1554

Deep CNN	dropout = 0.5	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3500	0.3250	0.3750	0.2750	0.4000	0.3450	0.0430
2.0000	0.3125	0.3125	0.3125	0.3542	0.2917	0.3167	0.0204
3.0000	0.3889	0.2778	0.2500	0.2778	0.2500	0.2889	0.0515
4.0000	0.3333	0.3542	0.3542	0.3125	0.3333	0.3375	0.0156
5.0000	0.3750	0.3125	0.3333	0.2917	0.3333	0.3292	0.0276
6.0000	0.3256	0.2955	0.3182	0.2727	0.2955	0.3015	0.0188
7.0000	0.2708	0.2500	0.2708	0.2500	0.3333	0.2750	0.0306
8.0000	0.3500	0.3250	0.2750	0.3000	0.3500	0.3200	0.0292
9.0000	0.3333	0.2708	0.2708	0.3333	0.3542	0.3125	0.0349
10.0000	0.3958	0.3750	0.3125	0.3750	0.3542	0.3625	0.0283
					Avg	0.3189	0.0300

Deep CNN	dropout = 0.5	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2250	0.3000	0.2750	0.1250	0.3000	0.2450	0.0660
2.0000	0.2500	0.2083	0.3750	0.2708	0.2083	0.2625	0.0612
3.0000	0.2222	0.2500	0.2500	0.2778	0.2500	0.2500	0.0176
4.0000	0.2292	0.2708	0.2500	0.3333	0.1458	0.2458	0.0610
5.0000	0.1250	0.2083	0.2292	0.2292	0.2083	0.2000	0.0386
6.0000	0.2273	0.3023	0.2093	0.2558	0.1860	0.2362	0.0402
7.0000	0.2708	0.1250	0.1250	0.2500	0.1667	0.1875	0.0618
8.0000	0.3000	0.2250	0.3250	0.1750	0.1500	0.2350	0.0682
9.0000	0.2083	0.2500	0.1875	0.3750	0.2083	0.2458	0.0677
10.0000	0.2708	0.2500	0.2917	0.2500	0.3125	0.2750	0.0243
					Avg	0.2383	0.0507

Table 8.22: 1024 Hz

Deep CNN	Interval: Full	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	0.9917	1.0000	0.9983	0.0033
2.0000	0.9931	0.9514	1.0000	0.8403	1.0000	0.9569	0.0611
3.0000	0.9722	0.9537	1.0000	0.9815	0.2500	0.8315	0.2911
4.0000	0.9931	1.0000	0.9583	1.0000	0.8958	0.9694	0.0399
5.0000	1.0000	1.0000	0.5903	1.0000	0.9931	0.9167	0.1632
6.0000	0.2481	0.9845	0.6899	1.0000	0.8992	0.7643	0.2808
7.0000	0.9028	0.9583	1.0000	0.8542	1.0000	0.9431	0.0570
8.0000	0.2500	0.9250	1.0000	1.0000	0.2583	0.6867	0.3542
9.0000	1.0000	0.7292	1.0000	1.0000	0.9653	0.9389	0.1057
10.0000	1.0000	0.9444	0.9931	0.8125	0.9375	0.9375	0.0673
					Avg	0.8943	0.1424

Deep CNN	Interval: Full	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.3000	0.3250	0.3000	0.3250	0.3150	0.0122
2.0000	0.2500	0.3958	0.3333	0.4375	0.3125	0.3458	0.0654
3.0000	0.3611	0.3333	0.4167	0.3611	0.2500	0.3444	0.0544
4.0000	0.3542	0.2500	0.2917	0.2708	0.3125	0.2958	0.0358
5.0000	0.3125	0.3125	0.4167	0.3542	0.2917	0.3375	0.0445
6.0000	0.2558	0.3636	0.3182	0.2727	0.2955	0.3012	0.0377
7.0000	0.3125	0.3333	0.3125	0.2917	0.3542	0.3208	0.0212
8.0000	0.2500	0.3000	0.3250	0.3000	0.2500	0.2850	0.0300
9.0000	0.3958	0.3542	0.3542	0.4583	0.3333	0.3792	0.0445
10.0000	0.3333	0.3333	0.3333	0.3333	0.3125	0.3292	0.0083
					Avg	0.3254	0.0354

Deep CNN	Interval: Full	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.2250	0.2500	0.1750	0.3000	0.2400	0.0406
2.0000	0.2500	0.1875	0.3333	0.3125	0.2292	0.2625	0.0537
3.0000	0.3056	0.1944	0.2500	0.2500	0.2500	0.2500	0.0351
4.0000	0.1875	0.2292	0.2292	0.2917	0.1875	0.2250	0.0382
5.0000	0.2500	0.2708	0.2708	0.1875	0.2500	0.2458	0.0306
6.0000	0.2500	0.1860	0.3256	0.1395	0.3256	0.2453	0.0743
7.0000	0.2708	0.2083	0.2500	0.3125	0.3125	0.2708	0.0395
8.0000	0.2500	0.3500	0.3750	0.3000	0.2500	0.3050	0.0510
9.0000	0.2083	0.2500	0.2708	0.1458	0.3333	0.2417	0.0626
10.0000	0.2708	0.2500	0.3125	0.3333	0.3958	0.3125	0.0510
					Avg	0.2599	0.0477

Table 8.23: 254 Hz

Deep CNN	Interval: Action	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.6583	1.0000	1.0000	1.0000	0.9917	0.9300	0.1359
2.0000	0.6583	1.0000	1.0000	1.0000	0.9917	0.9300	0.1359
3.0000	0.4259	0.2870	0.9815	0.2963	0.9537	0.5889	0.3132
4.0000	0.9861	0.4514	0.9583	0.2500	0.2917	0.5875	0.3214
5.0000	0.9444	0.7569	1.0000	0.9792	1.0000	0.9361	0.0919
6.0000	0.8760	1.0000	1.0000	1.0000	1.0000	0.9752	0.0496
7.0000	1.0000	1.0000	0.9931	1.0000	1.0000	0.9986	0.0028
8.0000	0.9833	1.0000	0.9917	1.0000	1.0000	0.9950	0.0067
9.0000	0.9514	0.8750	0.9583	1.0000	1.0000	0.9569	0.0457
10.0000	0.8750	0.6528	0.9514	0.9375	0.7083	0.8250	0.1220
					Avg	0.8723	0.1225

Deep CNN	Interval: Action	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.3250	0.2750	0.3500	0.4000	0.3300	0.0430
2.0000	0.3000	0.3250	0.2750	0.3500	0.4000	0.3300	0.0430
3.0000	0.3056	0.2500	0.3889	0.2500	0.3056	0.3000	0.0509
4.0000	0.2917	0.2708	0.2500	0.2500	0.2500	0.2625	0.0167
5.0000	0.3333	0.3542	0.2917	0.3958	0.2500	0.3250	0.0503
6.0000	0.3023	0.2727	0.2500	0.3636	0.2500	0.2877	0.0425
7.0000	0.3333	0.3333	0.3125	0.2917	0.2917	0.3125	0.0186
8.0000	0.3250	0.4000	0.3250	0.3250	0.3750	0.3500	0.0316
9.0000	0.3125	0.3542	0.3125	0.3542	0.2917	0.3250	0.0250
10.0000	0.3958	0.2917	0.3542	0.3125	0.3125	0.3333	0.0373
					Avg	0.3156	0.0359

Deep CNN	Interval: Action	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.2250	0.3000	0.1500	0.1000	0.2100	0.0752
2.0000	0.2750	0.2250	0.3000	0.1500	0.1000	0.2100	0.0752
3.0000	0.2500	0.2500	0.2778	0.2500	0.2500	0.2556	0.0111
4.0000	0.2292	0.2708	0.2292	0.2500	0.2708	0.2500	0.0186
5.0000	0.2292	0.2292	0.2083	0.2083	0.2500	0.2250	0.0156
6.0000	0.2727	0.2558	0.1628	0.1860	0.2326	0.2220	0.0415
7.0000	0.3125	0.1875	0.2292	0.2708	0.3958	0.2792	0.0717
8.0000	0.3750	0.2750	0.2250	0.3250	0.3750	0.3150	0.0583
9.0000	0.2292	0.3542	0.2708	0.2500	0.2500	0.2708	0.0437
10.0000	0.2917	0.2708	0.2917	0.3333	0.2708	0.2917	0.0228
					Avg	0.2529	0.0434

Table 8.24: 254 Hz

Deep CNN	Interval: Full	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3833	0.6667	1.0000	1.0000	1.0000	0.8100	0.2494
2.0000	1.0000	0.9722	0.7708	0.7708	0.4653	0.7958	0.1915
3.0000	0.9167	1.0000	0.2500	1.0000	0.9815	0.8296	0.2914
4.0000	0.9722	0.8542	0.9583	0.6111	0.9236	0.8639	0.1328
5.0000	0.7292	1.0000	0.9792	1.0000	1.0000	0.9417	0.1066
6.0000	1.0000	0.7442	0.9922	1.0000	0.6667	0.8806	0.1452
7.0000	0.4792	0.8889	1.0000	0.7361	0.2500	0.6708	0.2735
8.0000	0.9750	1.0000	0.9833	1.0000	0.9833	0.9883	0.0100
9.0000	0.9931	0.5000	0.9444	0.9931	0.9931	0.8847	0.1933
10.0000	0.8542	0.8681	0.8611	0.4236	0.8194	0.7653	0.1717
					Avg	0.8431	0.1765

Deep CNN	Interval: Full	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.4000	0.3000	0.3750	0.4000	0.3550	0.0458
2.0000	0.3333	0.3542	0.3333	0.3333	0.2708	0.3250	0.0283
3.0000	0.3889	0.4444	0.2500	0.3056	0.2778	0.3333	0.0724
4.0000	0.3333	0.3125	0.2917	0.3333	0.3333	0.3208	0.0167
5.0000	0.3750	0.2708	0.3750	0.2500	0.2708	0.3083	0.0550
6.0000	0.3721	0.2955	0.3636	0.4318	0.2727	0.3471	0.0571
7.0000	0.2917	0.3958	0.2708	0.3542	0.2500	0.3125	0.0543
8.0000	0.4250	0.3750	0.3250	0.3500	0.4000	0.3750	0.0354
9.0000	0.2917	0.2917	0.3542	0.3542	0.3333	0.3250	0.0283
10.0000	0.3750	0.3333	0.3333	0.2917	0.2917	0.3250	0.0312
					Avg	0.3327	0.0424

Deep CNN	Interval: Full	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.2000	0.2250	0.2250	0.2250	0.2400	0.0436
2.0000	0.2500	0.3333	0.1667	0.3125	0.2500	0.2625	0.0583
3.0000	0.1944	0.3889	0.2500	0.2500	0.3333	0.2833	0.0689
4.0000	0.3125	0.2292	0.2292	0.2083	0.3125	0.2583	0.0449
5.0000	0.2917	0.3125	0.2917	0.3750	0.2708	0.3083	0.0358
6.0000	0.2500	0.2326	0.2093	0.3256	0.2791	0.2593	0.0402
7.0000	0.2292	0.2500	0.3333	0.2500	0.2500	0.2625	0.0363
8.0000	0.2750	0.2500	0.2750	0.2250	0.3500	0.2750	0.0418
9.0000	0.1667	0.2292	0.2917	0.3333	0.3333	0.2708	0.0645
10.0000	0.2500	0.2500	0.2292	0.2917	0.2292	0.2500	0.0228
					Avg	0.2670	0.0457

Table 8.25: 1024 Hz

Deep CNN	Interval: Action	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.7583	0.4917	0.2500	0.9500	0.6900	0.2833
2.0000	0.8611	1.0000	0.9028	0.4375	1.0000	0.8403	0.2086
3.0000	0.9722	0.8426	0.2500	0.9444	0.3704	0.6759	0.3041
4.0000	0.8611	0.9097	0.9236	0.2500	0.8264	0.7542	0.2545
5.0000	0.9236	0.8542	0.3889	1.0000	1.0000	0.8333	0.2288
6.0000	0.2481	0.7984	0.9922	1.0000	0.8837	0.7845	0.2784
7.0000	0.9306	0.8611	0.9653	0.2500	1.0000	0.8014	0.2795
8.0000	0.5417	1.0000	0.9417	0.9917	0.9417	0.8833	0.1726
9.0000	0.8958	0.9722	0.8264	0.9653	0.9722	0.9264	0.0577
10.0000	0.9861	1.0000	0.2708	0.9792	0.9861	0.8444	0.2869
					Avg	0.8034	0.2354

Deep CNN	Interval: Action	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.3250	0.2500	0.2500	0.2750	0.2750	0.0274
2.0000	0.3542	0.3333	0.3958	0.3750	0.3750	0.3667	0.0212
3.0000	0.2778	0.3333	0.2500	0.4722	0.2778	0.3222	0.0797
4.0000	0.3333	0.3333	0.3125	0.2500	0.3125	0.3083	0.0306
5.0000	0.2500	0.3125	0.2500	0.3750	0.2500	0.2875	0.0500
6.0000	0.2558	0.2727	0.2727	0.2955	0.3864	0.2966	0.0466
7.0000	0.3333	0.3125	0.2708	0.2500	0.3333	0.3000	0.0339
8.0000	0.2750	0.3500	0.4250	0.3250	0.3500	0.3450	0.0485
9.0000	0.2708	0.3958	0.3125	0.3542	0.3958	0.3458	0.0486
10.0000	0.3542	0.3333	0.2708	0.3125	0.3333	0.3208	0.0283
					Avg	0.3168	0.0415

Deep CNN	Interval: Action	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2250	0.2250	0.2500	0.2500	0.1250	0.2150	0.0464
2.0000	0.2917	0.2292	0.3750	0.2292	0.3542	0.2958	0.0610
3.0000	0.4444	0.2778	0.2500	0.3333	0.2222	0.3056	0.0786
4.0000	0.2083	0.2292	0.2083	0.2500	0.2292	0.2250	0.0156
5.0000	0.2708	0.2500	0.2917	0.3125	0.1875	0.2625	0.0429
6.0000	0.2500	0.1860	0.2093	0.2791	0.2791	0.2407	0.0374
7.0000	0.1458	0.1875	0.2500	0.2500	0.1042	0.1875	0.0574
8.0000	0.3250	0.2500	0.2500	0.2500	0.2750	0.2700	0.0292
9.0000	0.3125	0.2292	0.3750	0.2292	0.2083	0.2708	0.0632
10.0000	0.2500	0.2500	0.2083	0.1667	0.4167	0.2583	0.0850
					Avg	0.2531	0.0517

Table 8.26: 1024 Hz

Deep CNN	LR: 0.1	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9000	0.8250	0.9667	0.5417	0.9417	0.8350	0.1543
2.0000	0.9792	0.3056	0.8125	0.5556	0.7917	0.6889	0.2344
3.0000	0.9630	0.6667	0.8611	0.8704	0.3704	0.7463	0.2113
4.0000	0.4167	0.9792	0.8333	0.9375	0.8958	0.8125	0.2037
5.0000	0.3611	0.3194	0.3681	0.4444	0.3681	0.3722	0.0404
6.0000	0.9612	0.6744	0.7907	0.7519	0.9380	0.8233	0.1100
7.0000	0.2917	0.9514	0.7222	0.5347	0.8542	0.6708	0.2355
8.0000	0.7417	0.6417	0.9750	0.8750	0.9167	0.8300	0.1215
9.0000	0.9444	0.3611	0.3194	0.6806	0.6667	0.5944	0.2303
10.0000	0.4514	0.7917	0.6667	0.5625	0.9167	0.6778	0.1641
					Avg	0.7051	0.1706

Deep CNN	LR: 0.1	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3500	0.4750	0.5250	0.3500	0.4000	0.4200	0.0696
2.0000	0.3958	0.3333	0.2917	0.3542	0.3333	0.3417	0.0339
3.0000	0.3889	0.3889	0.4167	0.3889	0.3889	0.3944	0.0111
4.0000	0.3333	0.3542	0.3958	0.3542	0.3750	0.3625	0.0212
5.0000	0.3125	0.3333	0.3333	0.3750	0.3750	0.3458	0.0250
6.0000	0.4419	0.3409	0.3864	0.3636	0.3409	0.3747	0.0376
7.0000	0.3750	0.3958	0.4167	0.3958	0.3750	0.3917	0.0156
8.0000	0.4000	0.3500	0.3500	0.5000	0.5000	0.4200	0.0678
9.0000	0.4167	0.3333	0.3542	0.3958	0.3542	0.3708	0.0306
10.0000	0.3958	0.4375	0.3958	0.3542	0.4375	0.4042	0.0312
					Avg	0.3826	0.0344

Deep CNN	LR: 0.1	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2250	0.4250	0.2000	0.2250	0.2250	0.2600	0.0831
2.0000	0.2500	0.1458	0.1667	0.2708	0.2708	0.2208	0.0537
3.0000	0.2500	0.3056	0.2778	0.3056	0.1944	0.2667	0.0416
4.0000	0.2292	0.2917	0.3125	0.1667	0.2292	0.2458	0.0517
5.0000	0.2708	0.2083	0.3125	0.2500	0.3125	0.2708	0.0395
6.0000	0.1591	0.3256	0.3256	0.2558	0.3256	0.2783	0.0655
7.0000	0.3750	0.3542	0.2292	0.2292	0.3125	0.3000	0.0612
8.0000	0.3250	0.2500	0.2500	0.3500	0.2500	0.2850	0.0436
9.0000	0.2500	0.2917	0.2708	0.1875	0.2917	0.2583	0.0386
10.0000	0.2500	0.3750	0.2292	0.2708	0.2083	0.2667	0.0580
					Avg	0.2652	0.0537

Table 8.27: 254 Hz

Deep CNN	LR: 0.01	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	0.9000	0.8500	0.4417	0.8383	0.2067
2.0000	0.9375	1.0000	1.0000	0.9167	1.0000	0.9708	0.0363
3.0000	1.0000	0.7593	0.9259	0.9815	0.9630	0.9259	0.0869
4.0000	0.8194	0.5139	0.6458	0.8125	1.0000	0.7583	0.1658
5.0000	0.3750	1.0000	0.7222	0.8403	1.0000	0.7875	0.2313
6.0000	0.5659	1.0000	0.2481	0.2481	0.7674	0.5659	0.2936
7.0000	0.5417	0.5417	0.9931	0.8403	0.9028	0.7639	0.1878
8.0000	0.9583	0.9333	0.5083	0.9833	0.9000	0.8567	0.1763
9.0000	0.5556	0.8542	1.0000	0.8194	0.8750	0.8208	0.1460
10.0000	0.9306	0.7083	1.0000	0.9236	0.9306	0.8986	0.0991
					Avg	0.8187	0.1630

Deep CNN	LR: 0.01	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.3750	0.3250	0.3750	0.3250	0.3400	0.0300
2.0000	0.4375	0.4167	0.2708	0.2708	0.3125	0.3417	0.0717
3.0000	0.3889	0.3889	0.3611	0.4167	0.3889	0.3889	0.0176
4.0000	0.4792	0.3125	0.3958	0.3333	0.3750	0.3792	0.0580
5.0000	0.2708	0.3542	0.3333	0.3542	0.3542	0.3333	0.0323
6.0000	0.3721	0.3409	0.2500	0.2500	0.3182	0.3062	0.0490
7.0000	0.3958	0.3958	0.3125	0.3750	0.3542	0.3667	0.0312
8.0000	0.3750	0.4250	0.4250	0.4250	0.3750	0.4050	0.0245
9.0000	0.3333	0.3125	0.3333	0.2917	0.3750	0.3292	0.0276
10.0000	0.3542	0.3958	0.4375	0.2708	0.3333	0.3583	0.0565
					Avg	0.3548	0.0398

Deep CNN	LR: 0.01	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.4500	0.1500	0.2250	0.2500	0.2800	0.1017
2.0000	0.3542	0.2292	0.3750	0.2500	0.3125	0.3042	0.0568
3.0000	0.1667	0.2222	0.2778	0.2500	0.2778	0.2389	0.0416
4.0000	0.2917	0.3125	0.2917	0.2292	0.2083	0.2667	0.0404
5.0000	0.3125	0.3750	0.2500	0.1458	0.2708	0.2708	0.0757
6.0000	0.3182	0.1860	0.2558	0.2558	0.2558	0.2543	0.0418
7.0000	0.1875	0.1875	0.2292	0.1875	0.2500	0.2083	0.0264
8.0000	0.3250	0.4000	0.1750	0.2000	0.3250	0.2850	0.0846
9.0000	0.2500	0.2917	0.2917	0.2292	0.1667	0.2458	0.0464
10.0000	0.2708	0.3125	0.2292	0.2500	0.2917	0.2708	0.0295
					Avg	0.2625	0.0545

Table 8.28: 254 Hz

Deep CNN	LR: 0.001	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.9917	0.9417	0.9417	1.0000	0.9750	0.0274
2.0000	0.9097	1.0000	0.9028	1.0000	0.9722	0.9569	0.0427
3.0000	1.0000	1.0000	0.8056	1.0000	1.0000	0.9611	0.0778
4.0000	0.2917	0.9236	0.9653	0.9861	0.8750	0.8083	0.2611
5.0000	1.0000	1.0000	0.8819	1.0000	1.0000	0.9764	0.0472
6.0000	0.9922	0.9457	1.0000	1.0000	0.9922	0.9860	0.0205
7.0000	1.0000	0.8681	0.9375	1.0000	1.0000	0.9611	0.0524
8.0000	1.0000	1.0000	1.0000	0.9167	0.8333	0.9500	0.0667
9.0000	0.9792	1.0000	0.8889	0.7917	1.0000	0.9319	0.0813
10.0000	0.9931	0.8333	0.7986	0.9931	0.8125	0.8861	0.0880
					Avg	0.9393	0.0765

Deep CNN	LR: 0.001	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.3500	0.4250	0.2500	0.4000	0.3400	0.0682
2.0000	0.3125	0.3125	0.2708	0.2917	0.3333	0.3042	0.0212
3.0000	0.3056	0.3056	0.2500	0.3889	0.3611	0.3222	0.0484
4.0000	0.3333	0.3333	0.3333	0.4167	0.2917	0.3417	0.0408
5.0000	0.2708	0.2917	0.3125	0.2917	0.2917	0.2917	0.0132
6.0000	0.3721	0.2955	0.2727	0.3636	0.3409	0.3290	0.0387
7.0000	0.3125	0.3333	0.3333	0.3750	0.2917	0.3292	0.0276
8.0000	0.3000	0.4250	0.3500	0.3750	0.3250	0.3550	0.0430
9.0000	0.3750	0.3542	0.2708	0.2917	0.4375	0.3458	0.0598
10.0000	0.3750	0.3333	0.2708	0.3958	0.2708	0.3292	0.0517
					Avg	0.3288	0.0413

Deep CNN	LR: 0.001	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.3000	0.2250	0.3750	0.2250	0.2750	0.0570
2.0000	0.3333	0.2917	0.2083	0.1875	0.3333	0.2708	0.0618
3.0000	0.2778	0.3611	0.2778	0.2222	0.3056	0.2889	0.0451
4.0000	0.2500	0.2500	0.3958	0.2708	0.2500	0.2833	0.0568
5.0000	0.2292	0.2083	0.2500	0.1875	0.3125	0.2375	0.0429
6.0000	0.2273	0.1860	0.2326	0.2326	0.3023	0.2362	0.0374
7.0000	0.2083	0.2708	0.1667	0.2292	0.2500	0.2250	0.0358
8.0000	0.3500	0.2500	0.3000	0.3500	0.2500	0.3000	0.0447
9.0000	0.1875	0.1458	0.2917	0.2083	0.3125	0.2292	0.0632
10.0000	0.3125	0.2708	0.5000	0.1250	0.2500	0.2917	0.1215
					Avg	0.2638	0.0566

Table 8.29: 254 Hz

Deep CNN	LR: 0.0001	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.9167	1.0000	0.9917	0.6583	0.6583	0.8450	0.1552
2.0000	0.9792	1.0000	0.4444	0.8750	0.9792	0.8556	0.2101
3.0000	0.7778	1.0000	0.9722	0.6574	0.7963	0.8407	0.1282
4.0000	1.0000	0.9931	0.9583	1.0000	0.9097	0.9722	0.0349
5.0000	0.9583	0.8194	1.0000	1.0000	0.8125	0.9181	0.0848
6.0000	1.0000	0.9535	1.0000	0.5194	1.0000	0.8946	0.1885
7.0000	1.0000	0.9792	0.9722	1.0000	1.0000	0.9903	0.0121
8.0000	0.9917	1.0000	0.8083	0.9917	0.9583	0.9500	0.0723
9.0000	0.7500	0.8681	1.0000	0.9861	0.8125	0.8833	0.0972
10.0000	0.7361	0.9444	0.4653	0.9653	0.9931	0.8208	0.1997
					Avg	0.8971	0.1183

Deep CNN	LR: 0.0001	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3500	0.3250	0.3250	0.4500	0.3000	0.3500	0.0524
2.0000	0.3333	0.3125	0.2500	0.2708	0.2917	0.2917	0.0295
3.0000	0.3333	0.2778	0.2500	0.3611	0.3611	0.3167	0.0451
4.0000	0.3125	0.3750	0.3750	0.2708	0.3125	0.3292	0.0404
5.0000	0.2708	0.3333	0.3750	0.2500	0.3750	0.3208	0.0520
6.0000	0.3488	0.3409	0.4091	0.3636	0.2727	0.3470	0.0440
7.0000	0.3125	0.2917	0.4167	0.2500	0.3333	0.3208	0.0553
8.0000	0.3750	0.3500	0.2750	0.3250	0.3000	0.3250	0.0354
9.0000	0.3542	0.3125	0.3958	0.3333	0.3750	0.3542	0.0295
10.0000	0.2917	0.3750	0.2708	0.2708	0.3333	0.3083	0.0404
					Avg	0.3264	0.0424

Deep CNN	LR: 0.0001	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3750	0.2000	0.2750	0.2750	0.2500	0.2750	0.0570
2.0000	0.2708	0.2917	0.2500	0.2500	0.2292	0.2583	0.0212
3.0000	0.2222	0.3333	0.2778	0.2222	0.2778	0.2667	0.0416
4.0000	0.2708	0.1875	0.2917	0.2917	0.3750	0.2833	0.0598
5.0000	0.3333	0.2917	0.2708	0.1458	0.2083	0.2500	0.0659
6.0000	0.1591	0.3256	0.2558	0.1628	0.2791	0.2365	0.0656
7.0000	0.3125	0.2292	0.2708	0.2708	0.2917	0.2750	0.0276
8.0000	0.2500	0.2500	0.2000	0.2750	0.2750	0.2500	0.0274
9.0000	0.2500	0.3125	0.2500	0.3333	0.2708	0.2833	0.0339
10.0000	0.2708	0.2917	0.2292	0.2708	0.3125	0.2750	0.0276
					Avg	0.2653	0.0428

Table 8.30: 254 Hz

Deep CNN	LR: 0.1	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.5917	0.8083	0.9333	0.9583	0.5083	0.7600	0.1808
2.0000	0.5694	0.8264	0.9931	0.7639	0.9167	0.8139	0.1450
3.0000	0.7685	0.8426	0.8796	1.0000	0.9352	0.8852	0.0789
4.0000	0.9306	0.7431	0.6319	0.9653	0.8819	0.8306	0.1248
5.0000	0.8264	0.3750	0.9792	0.8264	0.7500	0.7514	0.2024
6.0000	0.7752	0.9845	0.9845	0.8992	0.9070	0.9101	0.0767
7.0000	0.7778	0.4722	0.9444	0.8194	0.7778	0.7583	0.1556
8.0000	0.8417	0.7500	0.8500	0.8750	0.3750	0.7383	0.1865
9.0000	0.9653	0.5556	0.7292	0.9306	0.9583	0.8278	0.1615
10.0000	0.3125	0.8958	0.4028	0.9583	0.9167	0.6972	0.2795
					Avg	0.7973	0.1592

Deep CNN	LR: 0.1	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4250	0.4000	0.5000	0.3500	0.3500	0.4050	0.0557
2.0000	0.3750	0.3958	0.4375	0.3542	0.3542	0.3833	0.0312
3.0000	0.4167	0.4167	0.3611	0.3889	0.3333	0.3833	0.0324
4.0000	0.4375	0.4167	0.3750	0.3125	0.2917	0.3667	0.0568
5.0000	0.3542	0.3125	0.2917	0.3125	0.3333	0.3208	0.0212
6.0000	0.4186	0.4091	0.3636	0.3409	0.3182	0.3701	0.0386
7.0000	0.3125	0.3750	0.3542	0.3333	0.4167	0.3583	0.0358
8.0000	0.4000	0.4500	0.3250	0.4500	0.4250	0.4100	0.0464
9.0000	0.3542	0.3333	0.3333	0.3750	0.3958	0.3583	0.0243
10.0000	0.3125	0.4167	0.3333	0.3750	0.3750	0.3625	0.0363
					Avg	0.3718	0.0379

Deep CNN	LR: 0.1	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.2500	0.2000	0.3250	0.2750	0.2750	0.0474
2.0000	0.2500	0.3125	0.3125	0.2917	0.3542	0.3042	0.0339
3.0000	0.1389	0.3333	0.2778	0.3056	0.1389	0.2389	0.0835
4.0000	0.1875	0.2917	0.2708	0.2083	0.2500	0.2417	0.0386
5.0000	0.3333	0.2708	0.3750	0.2708	0.1875	0.2875	0.0637
6.0000	0.1591	0.2093	0.2326	0.2326	0.1860	0.2039	0.0283
7.0000	0.1667	0.1875	0.2708	0.1667	0.1875	0.1958	0.0386
8.0000	0.2000	0.2750	0.3500	0.1250	0.2250	0.2350	0.0752
9.0000	0.3750	0.2708	0.2708	0.2083	0.2708	0.2792	0.0537
10.0000	0.3333	0.2917	0.2500	0.2292	0.4375	0.3083	0.0738
					Avg	0.2569	0.0537

Table 8.31: 1024 Hz

Deep CNN	LR: 0.01	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.9500	0.3500	0.9167	0.8750	1.0000	0.8183	0.2377
2.0000	0.9306	0.9792	0.9722	0.7847	0.9792	0.9292	0.0745
3.0000	0.8148	0.3519	0.9259	1.0000	0.9167	0.8019	0.2326
4.0000	0.7431	1.0000	1.0000	0.7986	0.9583	0.9000	0.1080
5.0000	0.9653	0.9167	0.7500	0.8333	0.7917	0.8514	0.0793
6.0000	0.9845	0.9922	0.2481	0.8915	0.9690	0.8171	0.2867
7.0000	0.9722	0.8056	0.9583	0.9931	0.9097	0.9278	0.0670
8.0000	0.9583	0.4750	0.9833	0.9833	0.9833	0.8767	0.2011
9.0000	0.9931	0.8403	1.0000	0.9931	0.9514	0.9556	0.0602
10.0000	0.6319	0.6944	1.0000	0.9792	0.8958	0.8403	0.1500
					Avg	0.8718	0.1497

Deep CNN	LR: 0.01	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.3750	0.3250	0.4250	0.3250	0.3550	0.0400
2.0000	0.3958	0.3333	0.3542	0.3750	0.2708	0.3458	0.0429
3.0000	0.3333	0.3056	0.3056	0.3611	0.3056	0.3222	0.0222
4.0000	0.2917	0.4375	0.3542	0.3333	0.4167	0.3667	0.0537
5.0000	0.3125	0.2708	0.2500	0.3125	0.2917	0.2875	0.0243
6.0000	0.3023	0.3182	0.2500	0.3182	0.3636	0.3105	0.0365
7.0000	0.3542	0.2500	0.3333	0.2708	0.3750	0.3167	0.0482
8.0000	0.3750	0.3250	0.4000	0.3250	0.4000	0.3650	0.0339
9.0000	0.3125	0.2500	0.2917	0.3333	0.2917	0.2958	0.0276
10.0000	0.3958	0.4167	0.3333	0.2500	0.2500	0.3292	0.0702
					Avg	0.3294	0.0400

Deep CNN	LR: 0.01	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.2500	0.3250	0.3500	0.4500	0.3300	0.0696
2.0000	0.3125	0.1458	0.2917	0.2917	0.2292	0.2542	0.0610
3.0000	0.2778	0.2500	0.1944	0.3056	0.2500	0.2556	0.0369
4.0000	0.2500	0.2500	0.2917	0.1667	0.2292	0.2375	0.0408
5.0000	0.2917	0.2292	0.3125	0.1875	0.2500	0.2542	0.0445
6.0000	0.2273	0.3023	0.2558	0.1860	0.1163	0.2175	0.0632
7.0000	0.2500	0.2708	0.3125	0.3125	0.2708	0.2833	0.0250
8.0000	0.3000	0.3000	0.4500	0.3250	0.3000	0.3350	0.0583
9.0000	0.2292	0.2708	0.3125	0.3542	0.2292	0.2792	0.0486
10.0000	0.2292	0.2500	0.1667	0.2292	0.2708	0.2292	0.0349
					Avg	0.2676	0.0483

Table 8.32: 1024 Hz

Deep CNN	LR: 0.001	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.8333	1.0000	1.0000	0.8667	0.7167	0.8833	0.1075
2.0000	1.0000	1.0000	0.9722	0.9722	1.0000	0.9889	0.0136
3.0000	0.9815	0.8333	0.8981	1.0000	0.9815	0.9389	0.0635
4.0000	0.5139	0.7014	0.9861	0.9306	0.9236	0.8111	0.1777
5.0000	1.0000	0.8403	0.9306	0.2500	1.0000	0.8042	0.2832
6.0000	1.0000	0.2558	0.9147	1.0000	0.2481	0.6837	0.3539
7.0000	0.9097	0.8194	1.0000	0.9722	0.9444	0.9292	0.0625
8.0000	0.9917	0.9000	1.0000	0.9833	0.9917	0.9733	0.0370
9.0000	0.9167	0.8750	0.7917	1.0000	0.8889	0.8944	0.0672
10.0000	0.9583	0.8889	0.8333	1.0000	0.3333	0.8028	0.2416
					Avg	0.8710	0.1408

Deep CNN	LR: 0.001	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.3750	0.3500	0.2500	0.3250	0.3200	0.0430
2.0000	0.3125	0.3750	0.2917	0.3333	0.3750	0.3375	0.0333
3.0000	0.2500	0.3333	0.2500	0.3056	0.3333	0.2944	0.0377
4.0000	0.3125	0.3125	0.4792	0.3333	0.4167	0.3708	0.0664
5.0000	0.3958	0.3958	0.2708	0.2500	0.3542	0.3333	0.0618
6.0000	0.3256	0.2500	0.3409	0.2500	0.2500	0.2833	0.0411
7.0000	0.3125	0.2917	0.3542	0.2500	0.3750	0.3167	0.0445
8.0000	0.4000	0.3500	0.3000	0.3500	0.3500	0.3500	0.0316
9.0000	0.3542	0.3125	0.2917	0.3333	0.3125	0.3208	0.0212
10.0000	0.4167	0.2917	0.3750	0.3125	0.2917	0.3375	0.0500
					Avg	0.3264	0.0431

Deep CNN	LR: 0.001	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2000	0.2750	0.2000	0.1750	0.4250	0.2550	0.0914
2.0000	0.3125	0.3750	0.2292	0.2083	0.1875	0.2625	0.0705
3.0000	0.3056	0.2222	0.3056	0.0556	0.3333	0.2444	0.1015
4.0000	0.2917	0.3125	0.1875	0.4375	0.2917	0.3042	0.0797
5.0000	0.3542	0.2500	0.1875	0.2500	0.2083	0.2500	0.0574
6.0000	0.3182	0.2326	0.1860	0.1628	0.2558	0.2311	0.0546
7.0000	0.3542	0.1667	0.2292	0.2083	0.2917	0.2500	0.0659
8.0000	0.3000	0.3500	0.3000	0.3750	0.2750	0.3200	0.0367
9.0000	0.2083	0.2292	0.2917	0.3750	0.1667	0.2542	0.0726
10.0000	0.2083	0.3333	0.3333	0.2917	0.2500	0.2833	0.0486
					Avg	0.2655	0.0679

Table 8.33: 1024 Hz

Deep CNN	LR: 0.0001	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	1.0000	0.7667	1.0000	0.7833	0.9100	0.1104
2.0000	1.0000	1.0000	1.0000	0.9861	1.0000	0.9972	0.0056
3.0000	1.0000	1.0000	1.0000	0.3056	1.0000	0.8611	0.2778
4.0000	0.7847	1.0000	1.0000	1.0000	1.0000	0.9569	0.0861
5.0000	0.2500	0.5556	0.9931	1.0000	1.0000	0.7597	0.3071
6.0000	0.9070	1.0000	0.2558	0.4884	1.0000	0.7302	0.3034
7.0000	0.5208	1.0000	1.0000	1.0000	0.8681	0.8778	0.1856
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	1.0000	0.3125	1.0000	1.0000	0.8625	0.2750
					Avg	0.8956	0.1551

Deep CNN	LR: 0.0001	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3250	0.3500	0.2500	0.4000	0.3000	0.3250	0.0500
2.0000	0.4167	0.3333	0.3125	0.3542	0.2917	0.3417	0.0429
3.0000	0.3056	0.3056	0.2778	0.2500	0.3333	0.2944	0.0283
4.0000	0.3750	0.2917	0.3542	0.3333	0.3750	0.3458	0.0312
5.0000	0.2500	0.2500	0.2500	0.2708	0.2708	0.2583	0.0102
6.0000	0.3023	0.2955	0.2500	0.2727	0.3182	0.2877	0.0239
7.0000	0.2500	0.2917	0.4167	0.3333	0.3333	0.3250	0.0553
8.0000	0.4500	0.3000	0.3500	0.4500	0.3000	0.3700	0.0678
9.0000	0.2708	0.3125	0.3750	0.3125	0.3333	0.3208	0.0339
10.0000	0.3542	0.3958	0.2500	0.3958	0.3542	0.3500	0.0534
					Avg	0.3219	0.0397

Deep CNN	LR: 0.0001	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.2750	0.2500	0.2500	0.2750	0.2600	0.0122
2.0000	0.1875	0.2292	0.2917	0.2292	0.2292	0.2333	0.0333
3.0000	0.2222	0.3333	0.1944	0.2500	0.2500	0.2500	0.0465
4.0000	0.2917	0.3125	0.3750	0.3542	0.2292	0.3125	0.0510
5.0000	0.2500	0.2500	0.3333	0.2083	0.2708	0.2625	0.0408
6.0000	0.2273	0.2093	0.2558	0.2791	0.2558	0.2455	0.0244
7.0000	0.2500	0.3542	0.1458	0.3333	0.2083	0.2583	0.0775
8.0000	0.2750	0.3000	0.3750	0.2750	0.2250	0.2900	0.0490
9.0000	0.2500	0.2708	0.2083	0.2917	0.3750	0.2792	0.0553
10.0000	0.3750	0.2292	0.2500	0.3333	0.4583	0.3292	0.0837
					Avg	0.2720	0.0474

Table 8.34: 1024 Hz

Deep CNN	V6	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	0.9833	0.7917	0.7500	0.8250	0.8700	0.1023
2.0000	0.8403	0.9097	0.9861	0.9167	0.7917	0.8889	0.0670
3.0000	1.0000	0.7870	0.4444	0.2500	0.8333	0.6630	0.2743
4.0000	0.7917	0.7847	0.8611	0.3264	0.8958	0.7319	0.2071
5.0000	0.9861	0.9792	0.5625	0.6528	0.8542	0.8069	0.1718
6.0000	0.9147	0.9302	0.8915	0.9535	1.0000	0.9380	0.0370
7.0000	0.7569	0.9792	1.0000	0.7361	0.8403	0.8625	0.1097
8.0000	0.7417	1.0000	0.9833	1.0000	0.8750	0.9200	0.1006
9.0000	0.8819	0.9792	1.0000	0.9861	1.0000	0.9694	0.0445
10.0000	0.7014	0.9583	0.8889	0.9792	0.9028	0.8861	0.0983
					Avg	0.8537	0.1213

Deep CNN	V6	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3750	0.3750	0.4000	0.3250	0.3250	0.3600	0.0300
2.0000	0.3333	0.3750	0.4167	0.3750	0.3542	0.3708	0.0276
3.0000	0.2778	0.2778	0.3611	0.2500	0.3056	0.2944	0.0377
4.0000	0.2917	0.2708	0.3333	0.3333	0.3333	0.3125	0.0264
5.0000	0.3542	0.3333	0.3333	0.4375	0.3542	0.3625	0.0386
6.0000	0.4186	0.3864	0.3182	0.2955	0.4318	0.3701	0.0542
7.0000	0.3333	0.3333	0.3333	0.2500	0.2708	0.3042	0.0363
8.0000	0.3250	0.3000	0.4250	0.3000	0.3500	0.3400	0.0464
9.0000	0.2500	0.3958	0.3750	0.4167	0.3542	0.3583	0.0580
10.0000	0.3542	0.2708	0.3125	0.3125	0.4792	0.3458	0.0717
					Avg	0.3419	0.0427

Deep CNN	V6	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3750	0.3000	0.3000	0.2750	0.2250	0.2950	0.0485
2.0000	0.2500	0.3750	0.2500	0.3750	0.1667	0.2833	0.0808
3.0000	0.3611	0.2222	0.1944	0.2500	0.2500	0.2556	0.0567
4.0000	0.3333	0.2917	0.2083	0.2083	0.2708	0.2625	0.0486
5.0000	0.2083	0.2708	0.2292	0.1667	0.2083	0.2167	0.0339
6.0000	0.1364	0.2558	0.2791	0.2093	0.2326	0.2226	0.0490
7.0000	0.1875	0.2708	0.1875	0.2917	0.2917	0.2458	0.0482
8.0000	0.2750	0.2250	0.3000	0.4000	0.2250	0.2850	0.0644
9.0000	0.2292	0.1875	0.2708	0.2708	0.1875	0.2292	0.0373
10.0000	0.3333	0.1875	0.3125	0.1875	0.2500	0.2542	0.0610
					Avg	0.2550	0.0528

Table 8.35: 254 Hz

Deep CNN	V5	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9583	0.4000	0.5000	0.8917	1.0000	0.7500	0.2494
2.0000	0.8889	0.9375	0.9861	0.8125	0.9653	0.9181	0.0620
3.0000	1.0000	0.7315	0.6667	0.9907	0.8333	0.8444	0.1342
4.0000	0.7917	0.3681	1.0000	0.8264	0.8889	0.7750	0.2155
5.0000	0.7847	1.0000	0.8681	1.0000	0.7986	0.8903	0.0939
6.0000	0.3721	0.9147	0.8062	0.8682	0.9457	0.7814	0.2100
7.0000	0.9861	0.9931	1.0000	1.0000	0.9583	0.9875	0.0155
8.0000	0.9917	0.9833	0.9500	1.0000	0.9667	0.9783	0.0180
9.0000	1.0000	0.2986	1.0000	0.9931	0.7222	0.8028	0.2737
10.0000	0.9514	0.9931	0.9167	0.7569	0.8889	0.9014	0.0802
					Avg	0.8629	0.1352

Deep CNN	V5	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3750	0.3250	0.3000	0.3250	0.3500	0.3350	0.0255
2.0000	0.2500	0.2500	0.3333	0.3750	0.3750	0.3167	0.0565
3.0000	0.2778	0.3889	0.2500	0.2778	0.3333	0.3056	0.0497
4.0000	0.2500	0.3542	0.3333	0.2917	0.3750	0.3208	0.0449
5.0000	0.3125	0.3125	0.3125	0.3125	0.3125	0.3125	0.0000
6.0000	0.2558	0.2500	0.2727	0.2955	0.3409	0.2830	0.0330
7.0000	0.2500	0.3958	0.3958	0.3125	0.3125	0.3333	0.0559
8.0000	0.4250	0.3000	0.3750	0.3750	0.3250	0.3600	0.0436
9.0000	0.3750	0.2917	0.3542	0.3125	0.3333	0.3333	0.0295
10.0000	0.4167	0.3958	0.3125	0.3958	0.3333	0.3708	0.0404
					Avg	0.3271	0.0379

Deep CNN	V5	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2000	0.2750	0.2250	0.2500	0.2250	0.2350	0.0255
2.0000	0.2708	0.3333	0.2500	0.3958	0.2917	0.3083	0.0517
3.0000	0.1667	0.1944	0.2500	0.1944	0.2778	0.2167	0.0408
4.0000	0.1458	0.2917	0.2083	0.2708	0.2708	0.2375	0.0537
5.0000	0.3125	0.2292	0.2708	0.2292	0.2917	0.2667	0.0333
6.0000	0.2500	0.3023	0.3721	0.2791	0.3023	0.3012	0.0403
7.0000	0.2708	0.1875	0.2917	0.2500	0.3333	0.2667	0.0482
8.0000	0.2750	0.4250	0.1750	0.3500	0.3000	0.3050	0.0828
9.0000	0.3333	0.2500	0.3125	0.2917	0.1667	0.2708	0.0589
10.0000	0.2292	0.2917	0.2917	0.3542	0.2917	0.2917	0.0395
					Avg	0.2699	0.0475

Table 8.36: 254 Hz

Deep CNN	V4	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
2.0000	0.2500	1.0000	1.0000	0.9931	0.4722	0.7431	0.3197
3.0000	0.9907	1.0000	0.9907	0.4722	1.0000	0.8907	0.2093
4.0000	1.0000	0.5417	1.0000	0.2500	0.9375	0.7458	0.3012
5.0000	0.9792	1.0000	0.9931	1.0000	0.8681	0.9681	0.0506
6.0000	0.9922	0.9070	0.2481	0.9845	1.0000	0.8264	0.2911
7.0000	0.9583	1.0000	1.0000	0.8542	1.0000	0.9625	0.0565
8.0000	1.0000	0.9750	0.2750	1.0000	0.7417	0.7983	0.2792
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	0.9514	1.0000	0.9931	1.0000	0.9931	0.9875	0.0183
					Avg	0.8922	0.1526

Deep CNN	V4	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.2750	0.3750	0.3000	0.3750	0.3200	0.0458
2.0000	0.2500	0.3750	0.2708	0.3958	0.3125	0.3208	0.0568
3.0000	0.3611	0.4444	0.3333	0.2500	0.3056	0.3389	0.0643
4.0000	0.3125	0.2917	0.3333	0.2500	0.3542	0.3083	0.0358
5.0000	0.3542	0.2500	0.2708	0.2500	0.2708	0.2792	0.0386
6.0000	0.3256	0.2727	0.2500	0.3636	0.2955	0.3015	0.0399
7.0000	0.2500	0.2708	0.3542	0.2917	0.2500	0.2833	0.0386
8.0000	0.4500	0.4000	0.2500	0.3000	0.3250	0.3450	0.0714
9.0000	0.4792	0.2917	0.2917	0.4167	0.3958	0.3750	0.0734
10.0000	0.3125	0.4167	0.3542	0.3958	0.3333	0.3625	0.0386
					Avg	0.3235	0.0503

Deep CNN	V4	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.2750	0.2000	0.3250	0.2000	0.2600	0.0515
2.0000	0.2500	0.2083	0.2708	0.3333	0.2917	0.2708	0.0417
3.0000	0.2778	0.1944	0.3333	0.2500	0.2778	0.2667	0.0451
4.0000	0.2292	0.2917	0.1875	0.2500	0.2292	0.2375	0.0339
5.0000	0.2083	0.2917	0.1875	0.3125	0.2083	0.2417	0.0503
6.0000	0.2955	0.1628	0.2558	0.1860	0.3023	0.2405	0.0567
7.0000	0.3333	0.3542	0.4792	0.2083	0.3125	0.3375	0.0868
8.0000	0.2500	0.1750	0.2500	0.1750	0.3250	0.2350	0.0561
9.0000	0.3542	0.3542	0.2708	0.3333	0.3333	0.3292	0.0306
10.0000	0.3125	0.1875	0.2500	0.3333	0.2292	0.2625	0.0537
					Avg	0.2681	0.0506

Table 8.37: 254 Hz

Deep CNN	V3	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.7583	1.0000	0.7167	0.9083	1.0000	0.8767	0.1192
2.0000	0.9931	0.9653	0.7778	0.8750	0.9583	0.9139	0.0786
3.0000	0.6481	1.0000	0.7407	0.7963	0.9074	0.8185	0.1236
4.0000	0.9167	0.7778	0.9028	0.9653	0.9097	0.8944	0.0623
5.0000	1.0000	0.7361	0.9167	1.0000	0.7222	0.8750	0.1230
6.0000	0.7287	0.7907	0.9147	0.8140	0.8915	0.8279	0.0678
7.0000	1.0000	0.6736	1.0000	0.8056	0.9792	0.8917	0.1312
8.0000	0.9917	0.9500	0.7667	0.6750	0.9333	0.8633	0.1214
9.0000	0.7222	0.5139	0.7431	0.5625	0.9792	0.7042	0.1635
10.0000	0.5625	0.9375	0.8125	0.6458	0.9861	0.7889	0.1633
					Avg	0.8454	0.1154

Deep CNN	V3	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.3500	0.3750	0.3250	0.2500	0.3150	0.0464
2.0000	0.3750	0.3750	0.3333	0.4375	0.3333	0.3708	0.0382
3.0000	0.2778	0.3056	0.3611	0.3056	0.3611	0.3222	0.0333
4.0000	0.3125	0.3958	0.3333	0.3125	0.2500	0.3208	0.0468
5.0000	0.3958	0.2708	0.2917	0.3542	0.3125	0.3250	0.0449
6.0000	0.2791	0.2955	0.2955	0.3636	0.3864	0.3240	0.0427
7.0000	0.3125	0.2708	0.3958	0.2500	0.3542	0.3167	0.0534
8.0000	0.4250	0.4000	0.3000	0.3000	0.3250	0.3500	0.0524
9.0000	0.3958	0.2917	0.3125	0.3750	0.3333	0.3417	0.0386
10.0000	0.2917	0.3958	0.3750	0.3333	0.3333	0.3458	0.0363
					Avg	0.3332	0.0433

Deep CNN	V3	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.4250	0.1750	0.1750	0.2250	0.2750	0.2550	0.0927
2.0000	0.2708	0.1875	0.1875	0.2292	0.3750	0.2500	0.0697
3.0000	0.2222	0.1667	0.2500	0.1111	0.0833	0.1667	0.0633
4.0000	0.2917	0.3542	0.2083	0.2917	0.2083	0.2708	0.0559
5.0000	0.2083	0.3125	0.3125	0.3958	0.2500	0.2958	0.0637
6.0000	0.2727	0.3023	0.1860	0.2326	0.2558	0.2499	0.0392
7.0000	0.2292	0.1667	0.2708	0.2500	0.2708	0.2375	0.0386
8.0000	0.3500	0.2500	0.4000	0.2750	0.3000	0.3150	0.0539
9.0000	0.1875	0.2500	0.2708	0.3125	0.3125	0.2667	0.0464
10.0000	0.2708	0.2917	0.2500	0.2500	0.2917	0.2708	0.0186
					Avg	0.2578	0.0542

Table 8.38: 254 Hz

Deep CNN	V2	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9750	0.5833	0.9750	1.0000	0.7583	0.8583	0.1630
2.0000	0.6875	0.8611	0.7153	0.9792	0.7500	0.7986	0.1079
3.0000	0.8519	0.6111	0.8611	0.9352	0.8333	0.8185	0.1093
4.0000	0.7014	0.8889	0.9931	0.4444	0.8750	0.7806	0.1924
5.0000	0.9306	0.7569	0.9167	0.7778	1.0000	0.8764	0.0936
6.0000	1.0000	1.0000	0.6977	0.8605	1.0000	0.9116	0.1199
7.0000	1.0000	0.6458	0.9444	1.0000	1.0000	0.9181	0.1378
8.0000	0.9167	0.7917	0.9833	0.8750	1.0000	0.9133	0.0758
9.0000	0.9861	0.4514	0.9653	0.9514	0.7431	0.8194	0.2038
10.0000	0.8333	0.7083	1.0000	1.0000	0.8542	0.8792	0.1106
					Avg	0.8574	0.1314

Deep CNN	V2	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3250	0.3750	0.3500	0.3750	0.3250	0.3500	0.0224
2.0000	0.3333	0.2917	0.2917	0.3542	0.3125	0.3167	0.0243
3.0000	0.3333	0.3333	0.3056	0.3333	0.2778	0.3167	0.0222
4.0000	0.3333	0.3542	0.3542	0.3125	0.2708	0.3250	0.0312
5.0000	0.3542	0.3542	0.3125	0.3333	0.2917	0.3292	0.0243
6.0000	0.3721	0.3636	0.2500	0.3864	0.2955	0.3335	0.0522
7.0000	0.3750	0.3125	0.2917	0.3125	0.3333	0.3250	0.0283
8.0000	0.3500	0.3750	0.2750	0.3500	0.3750	0.3450	0.0367
9.0000	0.3333	0.2708	0.2917	0.4167	0.3333	0.3292	0.0500
10.0000	0.3958	0.3542	0.3958	0.2917	0.3542	0.3583	0.0382
					Avg	0.3329	0.0330

Deep CNN	V2	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3250	0.2250	0.3500	0.3500	0.2750	0.3050	0.0485
2.0000	0.2083	0.2917	0.2917	0.3333	0.2917	0.2833	0.0408
3.0000	0.2222	0.2222	0.1944	0.2500	0.2778	0.2333	0.0283
4.0000	0.2500	0.1875	0.2708	0.2917	0.3542	0.2708	0.0543
5.0000	0.1250	0.1875	0.3542	0.3125	0.2708	0.2500	0.0833
6.0000	0.2955	0.3023	0.2093	0.2093	0.1628	0.2358	0.0543
7.0000	0.2292	0.3333	0.2500	0.3125	0.1667	0.2583	0.0598
8.0000	0.2500	0.3250	0.2500	0.2500	0.2750	0.2700	0.0292
9.0000	0.3958	0.2292	0.3333	0.2500	0.3958	0.3208	0.0705
10.0000	0.2708	0.2917	0.4167	0.2292	0.1667	0.2750	0.0827
					Avg	0.2703	0.0552

Table 8.39: 254 Hz

Deep CNN	V1	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.9667	1.0000	1.0000	0.9917	0.9917	0.0129
2.0000	0.9792	1.0000	1.0000	0.9306	1.0000	0.9819	0.0269
3.0000	0.8333	0.8981	0.9074	0.9815	0.5463	0.8333	0.1510
4.0000	0.6667	0.8264	0.6736	0.9861	0.8403	0.7986	0.1189
5.0000	0.8542	0.9514	0.9861	0.8542	0.9236	0.9139	0.0526
6.0000	0.2481	0.9535	1.0000	0.6279	0.8760	0.7411	0.2779
7.0000	0.9375	0.9514	0.9931	1.0000	1.0000	0.9764	0.0266
8.0000	0.8167	0.8250	1.0000	1.0000	0.8083	0.8900	0.0900
9.0000	0.8611	0.9514	0.7708	0.9722	0.8194	0.8750	0.0767
10.0000	0.9722	0.9444	0.7917	0.9514	0.9097	0.9139	0.0643
					Avg	0.8916	0.0898

Deep CNN	V1	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3750	0.3250	0.3250	0.2750	0.4750	0.3550	0.0678
2.0000	0.2708	0.3125	0.3333	0.3333	0.3333	0.3167	0.0243
3.0000	0.3611	0.3889	0.3056	0.3333	0.3056	0.3389	0.0324
4.0000	0.3750	0.3542	0.3125	0.3750	0.3750	0.3583	0.0243
5.0000	0.3333	0.3333	0.3125	0.3542	0.3125	0.3292	0.0156
6.0000	0.2558	0.3864	0.3409	0.3409	0.3409	0.3330	0.0424
7.0000	0.2917	0.3333	0.3958	0.3125	0.3958	0.3458	0.0429
8.0000	0.3500	0.4000	0.3500	0.2750	0.3750	0.3500	0.0418
9.0000	0.3958	0.3542	0.2708	0.2708	0.4375	0.3458	0.0667
10.0000	0.3958	0.3125	0.3333	0.3125	0.3542	0.3417	0.0312
					Avg	0.3414	0.0389

Deep CNN	V1	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2000	0.2500	0.1750	0.2750	0.3250	0.2450	0.0534
2.0000	0.2917	0.1458	0.2917	0.4375	0.3333	0.3000	0.0937
3.0000	0.2500	0.2222	0.3333	0.2222	0.3056	0.2667	0.0451
4.0000	0.2708	0.1458	0.1875	0.2917	0.2292	0.2250	0.0534
5.0000	0.2500	0.3125	0.2292	0.3542	0.2292	0.2750	0.0500
6.0000	0.2500	0.3488	0.2093	0.2093	0.2093	0.2453	0.0541
7.0000	0.3125	0.2292	0.2500	0.2917	0.2708	0.2708	0.0295
8.0000	0.2500	0.2750	0.2750	0.4250	0.3250	0.3100	0.0624
9.0000	0.1875	0.3333	0.1875	0.3750	0.2083	0.2583	0.0797
10.0000	0.2292	0.2708	0.2917	0.4375	0.3333	0.3125	0.0710
					Avg	0.2709	0.0592

Table 8.40: 254 Hz

Deep CNN	V6	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	0.7333	1.0000	0.9833	0.9917	0.9417	0.1043
2.0000	1.0000	1.0000	1.0000	0.5764	0.5556	0.8264	0.2127
3.0000	0.2500	1.0000	1.0000	0.5093	1.0000	0.7519	0.3148
4.0000	1.0000	1.0000	0.9861	1.0000	1.0000	0.9972	0.0056
5.0000	1.0000	0.9097	1.0000	1.0000	0.9861	0.9792	0.0351
6.0000	0.9225	1.0000	0.2481	0.4651	1.0000	0.7271	0.3115
7.0000	1.0000	1.0000	1.0000	0.9375	1.0000	0.9875	0.0250
8.0000	0.9833	1.0000	0.9500	1.0000	1.0000	0.9867	0.0194
9.0000	0.8750	1.0000	0.8819	0.6250	1.0000	0.8764	0.1370
10.0000	1.0000	1.0000	0.9931	0.9236	0.8472	0.9528	0.0601
					Avg	0.9027	0.1226

Deep CNN	V6	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3500	0.3000	0.3250	0.3000	0.4000	0.3350	0.0374
2.0000	0.3750	0.3125	0.3750	0.2708	0.3125	0.3292	0.0404
3.0000	0.2500	0.2778	0.4444	0.2778	0.2500	0.3000	0.0733
4.0000	0.3958	0.4583	0.3958	0.2917	0.3542	0.3792	0.0550
5.0000	0.3333	0.3125	0.3125	0.3125	0.2917	0.3125	0.0132
6.0000	0.2791	0.2727	0.2500	0.2955	0.4773	0.3149	0.0825
7.0000	0.3542	0.3125	0.2708	0.2917	0.2500	0.2958	0.0358
8.0000	0.3750	0.4000	0.3500	0.3000	0.2750	0.3400	0.0464
9.0000	0.3333	0.3542	0.2917	0.2708	0.3333	0.3167	0.0306
10.0000	0.3542	0.3125	0.2500	0.3542	0.3333	0.3208	0.0386
					Avg	0.3244	0.0453

Deep CNN	V6	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.2250	0.3250	0.2250	0.2250	0.2500	0.0387
2.0000	0.2083	0.2708	0.1667	0.3333	0.2917	0.2542	0.0595
3.0000	0.2500	0.2222	0.2500	0.3056	0.2222	0.2500	0.0304
4.0000	0.2708	0.4167	0.2708	0.3125	0.3542	0.3250	0.0553
5.0000	0.3125	0.2917	0.1875	0.3125	0.2917	0.2792	0.0468
6.0000	0.2500	0.2558	0.2558	0.2558	0.1860	0.2407	0.0274
7.0000	0.1667	0.2500	0.2500	0.2708	0.3125	0.2500	0.0475
8.0000	0.1750	0.2750	0.2750	0.4500	0.4500	0.3250	0.1084
9.0000	0.2917	0.2083	0.2083	0.2292	0.2083	0.2292	0.0323
10.0000	0.1667	0.1875	0.2708	0.3125	0.2500	0.2375	0.0537
					Avg	0.2641	0.0500

Table 8.41: 1024 Hz

Deep CNN	V5	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.6333	1.0000	1.0000	1.0000	1.0000	0.9267	0.1467
2.0000	1.0000	1.0000	1.0000	0.9583	1.0000	0.9917	0.0167
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	1.0000	1.0000	0.9097	0.2500	1.0000	0.8319	0.2931
5.0000	0.9931	0.2500	1.0000	1.0000	1.0000	0.8486	0.2993
6.0000	0.2481	0.2791	1.0000	1.0000	0.2636	0.5581	0.3609
7.0000	1.0000	1.0000	0.9792	1.0000	1.0000	0.9958	0.0083
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	0.2569	1.0000	1.0000	1.0000	0.8514	0.2972
					Avg	0.9004	0.1422

Deep CNN	V5	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.2500	0.2750	0.2500	0.3750	0.2850	0.0464
2.0000	0.3333	0.3958	0.3958	0.3542	0.3333	0.3625	0.0283
3.0000	0.3333	0.2500	0.3611	0.2500	0.2778	0.2944	0.0451
4.0000	0.3125	0.2500	0.2708	0.2500	0.3750	0.2917	0.0475
5.0000	0.2708	0.2500	0.2708	0.2500	0.3333	0.2750	0.0306
6.0000	0.2558	0.2500	0.2727	0.3636	0.2500	0.2784	0.0434
7.0000	0.2708	0.2708	0.3125	0.3542	0.2500	0.2917	0.0373
8.0000	0.3500	0.4250	0.2750	0.3000	0.4250	0.3550	0.0620
9.0000	0.2917	0.3542	0.2917	0.2917	0.3333	0.3125	0.0264
10.0000	0.2917	0.2500	0.3125	0.2917	0.3542	0.3000	0.0339
					Avg	0.3046	0.0401

Deep CNN	V5	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.2500	0.1750	0.2750	0.3250	0.2550	0.0485
2.0000	0.3333	0.2292	0.2917	0.2917	0.2708	0.2833	0.0339
3.0000	0.1389	0.1111	0.1389	0.3333	0.2222	0.1889	0.0813
4.0000	0.3333	0.4167	0.2083	0.2500	0.3333	0.3083	0.0726
5.0000	0.2292	0.2500	0.2500	0.2708	0.2500	0.2500	0.0132
6.0000	0.2500	0.2558	0.2326	0.1395	0.2326	0.2221	0.0423
7.0000	0.2917	0.2083	0.2708	0.2083	0.1458	0.2250	0.0517
8.0000	0.3500	0.2750	0.3500	0.3250	0.3500	0.3300	0.0292
9.0000	0.2917	0.3750	0.2500	0.2917	0.2917	0.3000	0.0408
10.0000	0.2917	0.2500	0.2292	0.2708	0.2500	0.2583	0.0212
					Avg	0.2621	0.0435

Table 8.42: 1024 Hz

Deep CNN	V4	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
2.0000	1.0000	0.2569	1.0000	1.0000	0.9792	0.8472	0.2952
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	0.5000	0.7500	1.0000	1.0000	1.0000	0.8500	0.2000
5.0000	1.0000	0.9375	0.3403	1.0000	1.0000	0.8556	0.2588
6.0000	1.0000	0.9147	1.0000	1.0000	1.0000	0.9829	0.0341
7.0000	1.0000	1.0000	1.0000	1.0000	0.2500	0.8500	0.3000
8.0000	1.0000	1.0000	0.6750	1.0000	1.0000	0.9350	0.1300
9.0000	1.0000	1.0000	1.0000	1.0000	0.2569	0.8514	0.2972
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.9172	0.1515

Deep CNN	V4	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.2500	0.4250	0.3500	0.2500	0.3050	0.0714
2.0000	0.3542	0.2500	0.2500	0.2917	0.2708	0.2833	0.0386
3.0000	0.3333	0.2778	0.3333	0.3056	0.2778	0.3056	0.0248
4.0000	0.3125	0.2917	0.3125	0.3333	0.4375	0.3375	0.0517
5.0000	0.4167	0.2708	0.2500	0.3125	0.3750	0.3250	0.0626
6.0000	0.3256	0.2955	0.3182	0.2727	0.4091	0.3242	0.0463
7.0000	0.2500	0.3750	0.3125	0.3333	0.2000	0.2942	0.0620
8.0000	0.4250	0.2500	0.2500	0.3500	0.4500	0.3450	0.0843
9.0000	0.3125	0.3750	0.3542	0.3125	0.2500	0.3208	0.0429
10.0000	0.3125	0.2917	0.3542	0.3125	0.3750	0.3292	0.0306
					Avg	0.3170	0.0515

Deep CNN	V4	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.3750	0.3000	0.3500	0.3000	0.3200	0.0367
2.0000	0.2708	0.2500	0.3750	0.2083	0.2083	0.2625	0.0612
3.0000	0.1667	0.2778	0.1944	0.2500	0.1944	0.2167	0.0408
4.0000	0.2708	0.3125	0.3125	0.3333	0.3542	0.3167	0.0276
5.0000	0.2708	0.2708	0.2500	0.1458	0.3125	0.2500	0.0559
6.0000	0.3409	0.1860	0.1860	0.2326	0.3488	0.2589	0.0723
7.0000	0.2500	0.2500	0.2917	0.2917	0.2500	0.2667	0.0204
8.0000	0.3250	0.3250	0.3000	0.2750	0.2250	0.2900	0.0374
9.0000	0.2917	0.2917	0.2083	0.3542	0.2500	0.2792	0.0486
10.0000	0.2708	0.2708	0.3125	0.2708	0.3750	0.3000	0.0408
					Avg	0.2761	0.0442

Table 8.43: 1024 Hz

Deep CNN	V3	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9917	0.2500	1.0000	1.0000	1.0000	0.8483	0.2992
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	1.0000	1.0000	0.2500	0.6296	1.0000	0.7759	0.2995
4.0000	0.5417	0.6458	1.0000	1.0000	1.0000	0.8375	0.2017
5.0000	1.0000	1.0000	0.5000	1.0000	1.0000	0.9000	0.2000
6.0000	1.0000	0.9845	0.9767	0.9845	1.0000	0.9891	0.0093
7.0000	0.9236	1.0000	1.0000	1.0000	0.5000	0.8847	0.1946
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	0.9792	1.0000	1.0000	0.9931	0.9944	0.0081
10.0000	0.8194	1.0000	1.0000	1.0000	1.0000	0.9639	0.0722
					Avg	0.9194	0.1285

Deep CNN	V3	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.2500	0.3000	0.3000	0.2500	0.2700	0.0245
2.0000	0.3125	0.3542	0.2708	0.4167	0.3333	0.3375	0.0482
3.0000	0.2500	0.3056	0.2500	0.3056	0.2778	0.2778	0.0248
4.0000	0.2917	0.3125	0.3125	0.2500	0.3958	0.3125	0.0475
5.0000	0.2917	0.3542	0.2917	0.3125	0.3125	0.3125	0.0228
6.0000	0.3953	0.2955	0.2955	0.3636	0.4773	0.3654	0.0681
7.0000	0.2708	0.3750	0.2917	0.2917	0.2708	0.3000	0.0386
8.0000	0.4000	0.4750	0.3000	0.3500	0.3500	0.3750	0.0592
9.0000	0.3750	0.3542	0.3125	0.2500	0.4167	0.3417	0.0568
10.0000	0.3750	0.3958	0.3125	0.3542	0.2500	0.3375	0.0517
					Avg	0.3230	0.0442

Deep CNN	V3	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.2500	0.2000	0.3000	0.1750	0.2350	0.0436
2.0000	0.2500	0.1042	0.2500	0.2500	0.2917	0.2292	0.0645
3.0000	0.3333	0.2222	0.2500	0.2778	0.2778	0.2722	0.0369
4.0000	0.2708	0.2917	0.2083	0.2708	0.2917	0.2667	0.0306
5.0000	0.2500	0.1875	0.1875	0.2500	0.3125	0.2375	0.0468
6.0000	0.2727	0.3256	0.3023	0.2791	0.2791	0.2918	0.0197
7.0000	0.2708	0.2083	0.2917	0.2708	0.2917	0.2667	0.0306
8.0000	0.4000	0.3500	0.3250	0.4250	0.2000	0.3400	0.0784
9.0000	0.3542	0.1667	0.3125	0.3958	0.3333	0.3125	0.0780
10.0000	0.2083	0.3542	0.2708	0.3125	0.2500	0.2792	0.0503
					Avg	0.2731	0.0479

Table 8.44: 1024 Hz

Deep CNN	V2	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	1.0000	0.2500	0.8500	0.3000
2.0000	1.0000	1.0000	1.0000	1.0000	0.6736	0.9347	0.1306
3.0000	1.0000	0.4537	1.0000	1.0000	1.0000	0.8907	0.2185
4.0000	1.0000	1.0000	1.0000	1.0000	0.6250	0.9250	0.1500
5.0000	1.0000	1.0000	0.9653	1.0000	1.0000	0.9931	0.0139
6.0000	1.0000	1.0000	0.2481	1.0000	1.0000	0.8496	0.3008
7.0000	1.0000	1.0000	1.0000	0.9861	0.5833	0.9139	0.1654
8.0000	1.0000	1.0000	0.9750	0.5250	1.0000	0.9000	0.1877
9.0000	1.0000	1.0000	0.2500	1.0000	1.0000	0.8500	0.3000
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.9107	0.1767

Deep CNN	V2	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.2500	0.3000	0.4000	0.2500	0.2900	0.0583
2.0000	0.2917	0.2500	0.2708	0.3750	0.3125	0.3000	0.0429
3.0000	0.2778	0.2778	0.3889	0.3333	0.3056	0.3167	0.0416
4.0000	0.3542	0.3958	0.4583	0.3750	0.2708	0.3708	0.0610
5.0000	0.3750	0.2500	0.3542	0.2708	0.2708	0.3042	0.0503
6.0000	0.3721	0.3409	0.2500	0.2727	0.3409	0.3153	0.0461
7.0000	0.3750	0.3125	0.2708	0.3125	0.2500	0.3042	0.0429
8.0000	0.4000	0.3250	0.2750	0.2500	0.3000	0.3100	0.0515
9.0000	0.2917	0.2917	0.2500	0.3333	0.3542	0.3042	0.0363
10.0000	0.3125	0.3333	0.2917	0.3958	0.3542	0.3375	0.0358
					Avg	0.3153	0.0467

Deep CNN	V2	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.2250	0.3250	0.2500	0.2500	0.2600	0.0339
2.0000	0.3333	0.3125	0.2292	0.3125	0.2708	0.2917	0.0373
3.0000	0.1944	0.2500	0.2778	0.2778	0.2500	0.2500	0.0304
4.0000	0.2708	0.3958	0.3333	0.2500	0.2708	0.3042	0.0537
5.0000	0.1875	0.2500	0.2708	0.2500	0.2917	0.2500	0.0349
6.0000	0.2955	0.2093	0.2558	0.3721	0.3256	0.2916	0.0560
7.0000	0.1667	0.2292	0.2083	0.2083	0.1875	0.2000	0.0212
8.0000	0.3000	0.3000	0.3750	0.2750	0.3500	0.3200	0.0367
9.0000	0.1875	0.3750	0.2500	0.2708	0.1875	0.2542	0.0690
10.0000	0.3125	0.2708	0.2708	0.3750	0.2500	0.2958	0.0445
					Avg	0.2717	0.0418

Table 8.45: 1024 Hz

Deep CNN	V1	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
2.0000	1.0000	0.6944	1.0000	1.0000	1.0000	0.9389	0.1222
3.0000	1.0000	1.0000	1.0000	0.3981	1.0000	0.8796	0.2407
4.0000	1.0000	1.0000	1.0000	0.3681	1.0000	0.8736	0.2528
5.0000	1.0000	1.0000	1.0000	0.9931	1.0000	0.9986	0.0028
6.0000	1.0000	0.4961	1.0000	1.0000	0.4884	0.7969	0.2488
7.0000	1.0000	1.0000	0.8194	0.9931	1.0000	0.9625	0.0716
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	0.9653	0.9861	0.8819	1.0000	0.9667	0.0442
10.0000	0.8472	1.0000	1.0000	1.0000	1.0000	0.9694	0.0611
					Avg	0.9386	0.1044

Deep CNN	V1	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.3000	0.3250	0.2750	0.2500	0.2850	0.0255
2.0000	0.2708	0.2500	0.2708	0.3958	0.3333	0.3042	0.0537
3.0000	0.3333	0.4167	0.3333	0.2500	0.4167	0.3500	0.0624
4.0000	0.3333	0.3750	0.2917	0.2500	0.3333	0.3167	0.0425
5.0000	0.2708	0.2917	0.2917	0.2500	0.2917	0.2792	0.0167
6.0000	0.2791	0.2500	0.2955	0.3182	0.2500	0.2785	0.0264
7.0000	0.2708	0.3542	0.3125	0.2917	0.2500	0.2958	0.0358
8.0000	0.3000	0.3000	0.4000	0.2750	0.4750	0.3500	0.0758
9.0000	0.3125	0.3333	0.3125	0.3958	0.3750	0.3458	0.0339
10.0000	0.3333	0.3542	0.3542	0.3542	0.2708	0.3333	0.0323
					Avg	0.3139	0.0405

Deep CNN	V1	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.2250	0.4000	0.2500	0.3000	0.2850	0.0624
2.0000	0.2917	0.2917	0.3125	0.3125	0.1875	0.2792	0.0468
3.0000	0.2500	0.2500	0.3611	0.2500	0.3056	0.2833	0.0444
4.0000	0.1667	0.3125	0.3333	0.2917	0.3125	0.2833	0.0598
5.0000	0.1875	0.2917	0.2292	0.2083	0.2500	0.2333	0.0358
6.0000	0.2955	0.2326	0.2558	0.2326	0.2326	0.2498	0.0245
7.0000	0.2083	0.2500	0.2500	0.2917	0.2083	0.2417	0.0312
8.0000	0.2750	0.2750	0.4250	0.3000	0.3750	0.3300	0.0600
9.0000	0.3125	0.2083	0.2708	0.3750	0.2708	0.2875	0.0550
10.0000	0.2292	0.3542	0.3333	0.2083	0.3333	0.2917	0.0604
					Avg	0.2765	0.0480

Table 8.46: 1024 Hz

Deep CNN	Feature extract	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	1.0000	0.6111	1.0000	1.0000	1.0000	0.9222	0.1556
5.0000	0.6389	0.9861	1.0000	0.6806	0.8750	0.8361	0.1510
6.0000	0.9070	1.0000	1.0000	0.9767	1.0000	0.9767	0.0360
7.0000	1.0000	1.0000	0.7292	1.0000	1.0000	0.9458	0.1083
8.0000	1.0000	0.9917	0.9750	0.9917	0.9917	0.9900	0.0082
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	1.0000	0.6597	0.9931	1.0000	0.9306	0.1354
					Avg	0.9601	0.0594

Deep CNN	Feature extract	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3750	0.2500	0.4000	0.2500	0.2250	0.3000	0.0725
2.0000	0.3125	0.3125	0.2917	0.3958	0.3750	0.3375	0.0404
3.0000	0.3611	0.3333	0.3889	0.2500	0.3056	0.3278	0.0478
4.0000	0.3125	0.3125	0.3333	0.2500	0.2708	0.2958	0.0306
5.0000	0.3333	0.3333	0.2708	0.2500	0.2708	0.2917	0.0349
6.0000	0.2791	0.2727	0.4091	0.3636	0.2955	0.3240	0.0534
7.0000	0.2917	0.2083	0.3750	0.2083	0.1042	0.2375	0.0909
8.0000	0.4500	0.3250	0.3750	0.3500	0.2250	0.3450	0.0731
9.0000	0.2500	0.3542	0.3958	0.1667	0.2917	0.2917	0.0801
10.0000	0.3125	0.3125	0.1875	0.2292	0.2292	0.2542	0.0500
					Avg	0.3005	0.0574

Deep CNN	Feature extract	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2250	0.4000	0.3000	0.2500	0.3500	0.3050	0.0640
2.0000	0.2917	0.2708	0.3542	0.3333	0.2917	0.3083	0.0306
3.0000	0.2500	0.2778	0.2778	0.2500	0.3611	0.2833	0.0408
4.0000	0.2500	0.2708	0.3750	0.1875	0.2917	0.2750	0.0610
5.0000	0.2917	0.2083	0.2500	0.2708	0.3750	0.2792	0.0553
6.0000	0.2500	0.1395	0.1860	0.3256	0.2791	0.2360	0.0661
7.0000	0.1458	0.2292	0.3125	0.2708	0.0625	0.2042	0.0898
8.0000	0.3500	0.2250	0.3500	0.3500	0.3000	0.3150	0.0490
9.0000	0.2708	0.3750	0.1667	0.1250	0.1250	0.2125	0.0972
10.0000	0.1875	0.1458	0.2292	0.2083	0.2708	0.2083	0.0417
					Avg	0.2627	0.0595

Deep CNN	Fine tune	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.8333	1.0000	1.0000	1.0000	0.7667	0.9200	0.1002
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	1.0000	0.6481	1.0000	1.0000	1.0000	0.9296	0.1407
4.0000	0.6875	0.6250	1.0000	1.0000	1.0000	0.8625	0.1696
5.0000	0.6667	0.9653	0.7361	0.9792	0.6875	0.8069	0.1369
6.0000	1.0000	0.8915	0.8450	1.0000	1.0000	0.9473	0.0662
7.0000	0.7847	1.0000	1.0000	0.7500	0.7917	0.8653	0.1109
8.0000	1.0000	1.0000	1.0000	1.0000	0.9917	0.9983	0.0033
9.0000	0.9722	1.0000	1.0000	1.0000	1.0000	0.9944	0.0111
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.9324	0.0739

Deep CNN	Fine tune	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.3500	0.3750	0.3000	0.3750	0.3350	0.0406
2.0000	0.3750	0.3750	0.3333	0.3125	0.2917	0.3375	0.0333
3.0000	0.3611	0.4167	0.2500	0.4167	0.3056	0.3500	0.0648
4.0000	0.3333	0.2917	0.2917	0.2917	0.2917	0.3000	0.0167
5.0000	0.2083	0.4167	0.3542	0.3542	0.3750	0.3417	0.0705
6.0000	0.3256	0.2500	0.3182	0.2727	0.2727	0.2878	0.0291
7.0000	0.2917	0.2500	0.3125	0.2500	0.2083	0.2625	0.0363
8.0000	0.2250	0.2000	0.3000	0.4000	0.4500	0.3150	0.0970
9.0000	0.2292	0.2500	0.2292	0.2917	0.3125	0.2625	0.0339
10.0000	0.3125	0.2500	0.1875	0.2917	0.3542	0.2792	0.0568
					Avg	0.3071	0.0479

Deep CNN	Fine tune	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2000	0.2500	0.4250	0.3000	0.3500	0.3050	0.0781
2.0000	0.3333	0.2083	0.2292	0.2917	0.2917	0.2708	0.0456
3.0000	0.3056	0.1944	0.2500	0.2500	0.2500	0.2500	0.0351
4.0000	0.2292	0.2083	0.1875	0.3542	0.2917	0.2542	0.0610
5.0000	0.4167	0.2917	0.1458	0.2500	0.3333	0.2875	0.0898
6.0000	0.1364	0.2791	0.2791	0.2558	0.1860	0.2273	0.0568
7.0000	0.1875	0.1875	0.2292	0.2500	0.1458	0.2000	0.0363
8.0000	0.4250	0.3250	0.2500	0.2750	0.2750	0.3100	0.0624
9.0000	0.1667	0.2292	0.3125	0.2708	0.3125	0.2583	0.0553
10.0000	0.2708	0.2917	0.2708	0.3125	0.2083	0.2708	0.0349
					Avg	0.2634	0.0555

Appendix: Shallow CNN results

Shallow CNN	batch size: 4	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.9833	0.9917	1.0000	0.4500	0.8850	0.2176
2.0000	1.0000	0.4236	1.0000	1.0000	1.0000	0.8847	0.2306
3.0000	0.6296	1.0000	0.9722	0.2500	0.9907	0.7685	0.2941
4.0000	0.9931	0.9792	1.0000	1.0000	1.0000	0.9944	0.0081
5.0000	1.0000	1.0000	1.0000	0.9931	0.7431	0.9472	0.1021
6.0000	0.9070	1.0000	1.0000	1.0000	1.0000	0.9814	0.0372
7.0000	1.0000	1.0000	0.2639	1.0000	0.2569	0.7042	0.3623
8.0000	0.3917	0.7667	1.0000	1.0000	0.6083	0.7533	0.2340
9.0000	0.9931	0.9722	1.0000	0.9931	0.9375	0.9792	0.0228
10.0000	0.9236	0.9861	1.0000	1.0000	0.9444	0.9708	0.0312
					Avg	0.8869	0.1540

Shallow CNN	batch size: 4	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4000	0.3000	0.3750	0.2500	0.3000	0.3250	0.0548
2.0000	0.4167	0.2917	0.3333	0.3542	0.2917	0.3375	0.0464
3.0000	0.3333	0.3889	0.3889	0.2500	0.3056	0.3333	0.0527
4.0000	0.3750	0.3542	0.3542	0.3125	0.3542	0.3500	0.0204
5.0000	0.3958	0.3333	0.2917	0.2917	0.3125	0.3250	0.0386
6.0000	0.2558	0.2727	0.4091	0.3182	0.2955	0.3103	0.0537
7.0000	0.2708	0.3333	0.2500	0.3958	0.2500	0.3000	0.0568
8.0000	0.3500	0.3250	0.3250	0.3500	0.3250	0.3350	0.0122
9.0000	0.4167	0.3333	0.4167	0.3750	0.4167	0.3917	0.0333
10.0000	0.4167	0.3750	0.3125	0.3333	0.3542	0.3583	0.0358
					Avg	0.3366	0.0405

Shallow CNN	batch size: 4	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3500	0.2250	0.2500	0.3000	0.2750	0.2800	0.0430
2.0000	0.3958	0.2292	0.2917	0.3125	0.1667	0.2792	0.0775
3.0000	0.1944	0.2222	0.3056	0.2500	0.3333	0.2611	0.0515
4.0000	0.2292	0.1667	0.3333	0.3125	0.2292	0.2542	0.0610
5.0000	0.2917	0.2292	0.2708	0.3333	0.2500	0.2750	0.0358
6.0000	0.2727	0.2791	0.1628	0.1860	0.3488	0.2499	0.0676
7.0000	0.3333	0.3125	0.2500	0.2708	0.2500	0.2833	0.0339
8.0000	0.2250	0.2750	0.3000	0.3000	0.2750	0.2750	0.0274
9.0000	0.2083	0.3542	0.2917	0.1667	0.3542	0.2750	0.0761
10.0000	0.3542	0.2500	0.3750	0.3750	0.3125	0.3333	0.0475
					Avg	0.2766	0.0521

Table 8.47: 254 Hz

Shallow CNN	batch size: 10	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.6667	0.5667	1.0000	1.0000	0.8467	0.1904
2.0000	0.9931	0.4167	1.0000	1.0000	1.0000	0.8819	0.2327
3.0000	1.0000	0.9444	1.0000	1.0000	1.0000	0.9889	0.0222
4.0000	1.0000	1.0000	1.0000	1.0000	0.4861	0.8972	0.2056
5.0000	0.9792	0.9861	0.4931	1.0000	0.8889	0.8694	0.1922
6.0000	1.0000	1.0000	1.0000	0.2868	1.0000	0.8574	0.2853
7.0000	1.0000	1.0000	1.0000	0.9931	1.0000	0.9986	0.0028
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	0.9375	0.4861	1.0000	0.9722	0.9931	0.8778	0.1970
					Avg	0.9218	0.1328

Shallow CNN	batch size: 10	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4500	0.2750	0.4000	0.3750	0.3750	0.3750	0.0570
2.0000	0.3333	0.3542	0.2917	0.4375	0.3542	0.3542	0.0475
3.0000	0.3611	0.4167	0.3056	0.3333	0.3611	0.3556	0.0369
4.0000	0.3750	0.3542	0.3542	0.3125	0.3125	0.3417	0.0250
5.0000	0.2708	0.2708	0.2500	0.3125	0.2917	0.2792	0.0212
6.0000	0.3488	0.3636	0.2955	0.2500	0.3182	0.3152	0.0403
7.0000	0.4167	0.2500	0.3542	0.4167	0.2708	0.3417	0.0705
8.0000	0.3250	0.4500	0.3500	0.4500	0.4500	0.4050	0.0557
9.0000	0.4583	0.3542	0.5000	0.3125	0.3958	0.4042	0.0680
10.0000	0.3958	0.3125	0.3333	0.3542	0.4167	0.3625	0.0386
					Avg	0.3534	0.0461

Shallow CNN	batch size: 10	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4250	0.2750	0.2250	0.2250	0.3250	0.2950	0.0748
2.0000	0.1875	0.2292	0.3125	0.1458	0.2708	0.2292	0.0589
3.0000	0.2778	0.1944	0.1944	0.2500	0.2222	0.2278	0.0324
4.0000	0.2917	0.3333	0.2917	0.3125	0.2500	0.2958	0.0276
5.0000	0.3125	0.3333	0.1875	0.2708	0.2500	0.2708	0.0510
6.0000	0.3409	0.3256	0.2791	0.2791	0.1628	0.2775	0.0624
7.0000	0.3125	0.3333	0.2083	0.1458	0.2708	0.2542	0.0690
8.0000	0.2500	0.3000	0.3000	0.3250	0.2500	0.2850	0.0300
9.0000	0.3750	0.2500	0.2500	0.2500	0.2708	0.2792	0.0486
10.0000	0.3542	0.1875	0.2500	0.3125	0.3125	0.2833	0.0583
					Avg	0.2698	0.0513

Table 8.48: 254 Hz

Shallow CNN	batch size: 20	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	0.9917	1.0000	1.0000	0.9983	0.0033
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	1.0000	1.0000	0.6759	0.9444	1.0000	0.9241	0.1259
4.0000	0.9583	1.0000	0.2917	1.0000	1.0000	0.8500	0.2796
5.0000	1.0000	0.7569	0.9861	1.0000	0.6944	0.8875	0.1337
6.0000	0.3178	1.0000	0.6977	1.0000	0.5814	0.7194	0.2601
7.0000	1.0000	1.0000	0.7361	1.0000	0.7708	0.9014	0.1213
8.0000	1.0000	0.8417	1.0000	1.0000	1.0000	0.9683	0.0633
9.0000	0.9583	0.7292	1.0000	1.0000	1.0000	0.9375	0.1054
10.0000	1.0000	1.0000	1.0000	0.3819	1.0000	0.8764	0.2472
					Avg	0.9063	0.1340

Shallow CNN	batch size: 20	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4500	0.3250	0.2750	0.4000	0.3000	0.3500	0.0652
2.0000	0.3333	0.3333	0.4167	0.3750	0.3333	0.3583	0.0333
3.0000	0.2778	0.2778	0.2778	0.3889	0.3333	0.3111	0.0444
4.0000	0.3542	0.3125	0.3125	0.3333	0.2917	0.3208	0.0212
5.0000	0.3958	0.3958	0.3958	0.3125	0.2708	0.3542	0.0527
6.0000	0.2558	0.3182	0.2955	0.4091	0.2727	0.3103	0.0537
7.0000	0.3542	0.3125	0.3333	0.2917	0.3125	0.3208	0.0212
8.0000	0.3250	0.3500	0.3500	0.3750	0.3500	0.3500	0.0158
9.0000	0.3333	0.3125	0.3333	0.3333	0.4375	0.3500	0.0445
10.0000	0.3333	0.3333	0.3750	0.2917	0.3750	0.3417	0.0312
					Avg	0.3367	0.0383

Shallow CNN	batch size: 20	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2250	0.3250	0.2750	0.1500	0.4000	0.2750	0.0851
2.0000	0.2708	0.2500	0.2083	0.2083	0.3125	0.2500	0.0395
3.0000	0.2778	0.1667	0.1667	0.1667	0.2778	0.2111	0.0544
4.0000	0.2292	0.2708	0.2292	0.2708	0.3125	0.2625	0.0312
5.0000	0.2292	0.3333	0.3333	0.2917	0.2083	0.2792	0.0520
6.0000	0.2500	0.2093	0.2326	0.1395	0.2791	0.2221	0.0471
7.0000	0.3333	0.2917	0.2500	0.3125	0.1875	0.2750	0.0517
8.0000	0.3500	0.2750	0.3750	0.2750	0.3500	0.3250	0.0418
9.0000	0.3333	0.2292	0.2708	0.2917	0.2708	0.2792	0.0339
10.0000	0.2708	0.2708	0.3333	0.2292	0.3125	0.2833	0.0363
					Avg	0.2662	0.0473

Table 8.49: 254 Hz

Shallow CNN	batch size: 4	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9083	0.9000	0.8667	1.0000	1.0000	0.9350	0.0549
2.0000	1.0000	1.0000	0.9306	1.0000	1.0000	0.9861	0.0278
3.0000	0.3981	1.0000	1.0000	0.2500	1.0000	0.7296	0.3344
4.0000	1.0000	0.9375	1.0000	1.0000	0.6111	0.9097	0.1513
5.0000	0.4722	0.2500	1.0000	0.2708	0.9861	0.5958	0.3335
6.0000	1.0000	1.0000	1.0000	0.2713	0.2636	0.7070	0.3589
7.0000	0.9861	0.7847	1.0000	1.0000	1.0000	0.9542	0.0849
8.0000	1.0000	0.9583	1.0000	0.2500	1.0000	0.8417	0.2963
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	0.9861	1.0000	1.0000	1.0000	0.9972	0.0056
					Avg	0.8656	0.1647

Shallow CNN	batch size: 4	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3000	0.3250	0.3000	0.2750	0.3000	0.3000	0.0158
2.0000	0.3750	0.2917	0.2500	0.3125	0.3333	0.3125	0.0417
3.0000	0.2778	0.3611	0.2500	0.2500	0.3889	0.3056	0.0583
4.0000	0.4167	0.2917	0.3333	0.3542	0.3750	0.3542	0.0417
5.0000	0.2708	0.2500	0.2708	0.2708	0.3333	0.2792	0.0283
6.0000	0.3488	0.2727	0.3636	0.2500	0.2500	0.2970	0.0493
7.0000	0.3958	0.2708	0.3125	0.2708	0.2500	0.3000	0.0520
8.0000	0.4000	0.3250	0.4750	0.2500	0.3000	0.3500	0.0791
9.0000	0.3750	0.4583	0.3542	0.3750	0.3542	0.3833	0.0386
10.0000	0.3750	0.4375	0.2500	0.4583	0.3958	0.3833	0.0729
					Avg	0.3265	0.0478

Shallow CNN	batch size: 4	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3500	0.2250	0.1750	0.2500	0.1500	0.2300	0.0696
2.0000	0.4375	0.3125	0.2708	0.2917	0.2708	0.3167	0.0624
3.0000	0.2778	0.2500	0.1389	0.2500	0.1667	0.2167	0.0539
4.0000	0.3333	0.1458	0.2500	0.3542	0.2917	0.2750	0.0738
5.0000	0.2500	0.2500	0.1875	0.2708	0.2292	0.2375	0.0283
6.0000	0.2500	0.1395	0.3023	0.2326	0.2558	0.2360	0.0535
7.0000	0.2500	0.2292	0.2083	0.2083	0.1875	0.2167	0.0212
8.0000	0.3500	0.3500	0.2500	0.2500	0.3000	0.3000	0.0447
9.0000	0.2708	0.2708	0.2292	0.2083	0.2708	0.2500	0.0264
10.0000	0.2708	0.2292	0.3125	0.5417	0.3125	0.3333	0.1087
					Avg	0.2612	0.0542

Table 8.50: 1024 Hz

Shallow CNN	batch size: 10	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9500	0.7667	1.0000	0.6667	1.0000	0.8767	0.1356
2.0000	1.0000	0.4236	1.0000	1.0000	1.0000	0.8847	0.2306
3.0000	0.5000	1.0000	0.2685	0.3611	1.0000	0.6259	0.3142
4.0000	1.0000	1.0000	1.0000	1.0000	0.6250	0.9250	0.1500
5.0000	0.9931	0.7500	0.7292	1.0000	1.0000	0.8944	0.1266
6.0000	0.9612	1.0000	1.0000	0.4729	1.0000	0.8868	0.2075
7.0000	0.5000	1.0000	1.0000	1.0000	0.6667	0.8333	0.2108
8.0000	1.0000	0.9583	1.0000	1.0000	0.7250	0.9367	0.1071
9.0000	1.0000	1.0000	1.0000	0.8125	1.0000	0.9625	0.0750
10.0000	0.9722	1.0000	0.9931	0.9236	1.0000	0.9778	0.0289
					Avg	0.8804	0.1586

Shallow CNN	batch size: 10	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.3000	0.3250	0.3000	0.3000	0.3000	0.0158
2.0000	0.3750	0.3125	0.3958	0.2500	0.3125	0.3292	0.0517
3.0000	0.3056	0.2500	0.2500	0.3056	0.3056	0.2833	0.0272
4.0000	0.2708	0.3958	0.4167	0.3958	0.2917	0.3542	0.0604
5.0000	0.2500	0.2708	0.3125	0.2708	0.2708	0.2750	0.0204
6.0000	0.3256	0.2955	0.3182	0.2500	0.2500	0.2878	0.0325
7.0000	0.3333	0.2917	0.3125	0.2917	0.3333	0.3125	0.0186
8.0000	0.3000	0.3250	0.3250	0.3750	0.3000	0.3250	0.0274
9.0000	0.3333	0.4583	0.2917	0.3333	0.2708	0.3375	0.0651
10.0000	0.3333	0.4583	0.3333	0.3750	0.3125	0.3625	0.0520
					Avg	0.3167	0.0371

Shallow CNN	batch size: 10	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3250	0.2500	0.3500	0.2250	0.2500	0.2800	0.0485
2.0000	0.2500	0.2708	0.3542	0.2708	0.3333	0.2958	0.0404
3.0000	0.2500	0.2222	0.2500	0.2222	0.3056	0.2500	0.0304
4.0000	0.3333	0.2292	0.3333	0.2917	0.2708	0.2917	0.0395
5.0000	0.2083	0.1875	0.1667	0.2500	0.3125	0.2250	0.0517
6.0000	0.2727	0.2558	0.1628	0.2558	0.3256	0.2545	0.0525
7.0000	0.3125	0.3125	0.2292	0.2292	0.2292	0.2625	0.0408
8.0000	0.4000	0.3750	0.2500	0.2500	0.3750	0.3300	0.0660
9.0000	0.2083	0.2083	0.2500	0.3125	0.2708	0.2500	0.0395
10.0000	0.2917	0.4375	0.5000	0.3958	0.3750	0.4000	0.0690
					Avg	0.2840	0.0478

Table 8.51: 1024 Hz

Shallow CNN	batch size: 20	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.9750	0.9750	1.0000	1.0000	0.9900	0.0122
2.0000	1.0000	0.2500	0.8958	0.5556	1.0000	0.7403	0.2945
3.0000	1.0000	1.0000	1.0000	0.9815	0.4722	0.8907	0.2094
4.0000	1.0000	1.0000	1.0000	0.2708	0.8194	0.8181	0.2824
5.0000	1.0000	0.8056	0.2500	1.0000	1.0000	0.8111	0.2905
6.0000	0.4574	0.9922	1.0000	1.0000	1.0000	0.8899	0.2163
7.0000	1.0000	1.0000	0.6875	1.0000	0.4653	0.8306	0.2191
8.0000	0.3250	1.0000	0.8583	1.0000	1.0000	0.8367	0.2617
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	0.9167	1.0000	1.0000	1.0000	0.9833	0.0333
					Avg	0.8791	0.1819

Shallow CNN	batch size: 20	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4000	0.3750	0.3250	0.3250	0.2500	0.3350	0.0515
2.0000	0.4167	0.2500	0.4167	0.2917	0.2500	0.3250	0.0764
3.0000	0.3333	0.2500	0.4167	0.3333	0.3056	0.3278	0.0539
4.0000	0.3333	0.3125	0.3125	0.3125	0.3333	0.3208	0.0102
5.0000	0.3542	0.2708	0.2500	0.2708	0.3333	0.2958	0.0404
6.0000	0.2558	0.2955	0.3409	0.3636	0.2500	0.3012	0.0451
7.0000	0.2708	0.3125	0.2500	0.3750	0.2917	0.3000	0.0429
8.0000	0.2750	0.2750	0.3500	0.3250	0.3250	0.3100	0.0300
9.0000	0.4375	0.2917	0.3542	0.3333	0.3542	0.3542	0.0475
10.0000	0.3542	0.3333	0.3750	0.4375	0.3125	0.3625	0.0429
					Avg	0.3232	0.0441

Shallow CNN	batch size: 20	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.3000	0.2000	0.2750	0.2750	0.2700	0.0367
2.0000	0.2917	0.2500	0.2083	0.3125	0.3542	0.2833	0.0503
3.0000	0.1667	0.3889	0.1944	0.1944	0.2500	0.2389	0.0797
4.0000	0.2917	0.3125	0.2500	0.2500	0.2292	0.2667	0.0306
5.0000	0.2708	0.2708	0.2500	0.3333	0.1458	0.2542	0.0610
6.0000	0.2500	0.2326	0.4419	0.3721	0.2326	0.3058	0.0857
7.0000	0.2917	0.1667	0.1667	0.2708	0.2708	0.2333	0.0550
8.0000	0.2750	0.2750	0.2750	0.3500	0.3000	0.2950	0.0292
9.0000	0.2083	0.2917	0.2708	0.3750	0.2500	0.2792	0.0553
10.0000	0.4167	0.3125	0.3750	0.2917	0.3750	0.3542	0.0456
					Avg	0.2781	0.0529

Table 8.52: 1024 Hz

Shallow CNN	bias: True	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9917	1.0000	0.4583	1.0000	1.0000	0.8900	0.2159
2.0000	1.0000	1.0000	1.0000	0.7569	1.0000	0.9514	0.0972
3.0000	0.6852	0.2500	0.6389	0.9907	1.0000	0.7130	0.2757
4.0000	1.0000	0.9931	1.0000	1.0000	0.9792	0.9944	0.0081
5.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
6.0000	1.0000	1.0000	1.0000	0.9845	1.0000	0.9969	0.0062
7.0000	1.0000	0.9931	1.0000	0.4375	1.0000	0.8861	0.2243
8.0000	1.0000	0.9583	1.0000	1.0000	1.0000	0.9917	0.0167
9.0000	1.0000	1.0000	1.0000	0.4236	1.0000	0.8847	0.2306
10.0000	1.0000	0.9653	1.0000	0.8403	0.9722	0.9556	0.0593
					Avg	0.9264	0.1134

Shallow CNN	bias: True	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3250	0.4000	0.3500	0.2500	0.3500	0.3350	0.0490
2.0000	0.3333	0.3750	0.3542	0.2500	0.3542	0.3333	0.0437
3.0000	0.2778	0.2500	0.3056	0.3611	0.3056	0.3000	0.0369
4.0000	0.3750	0.3125	0.3750	0.3958	0.4167	0.3750	0.0349
5.0000	0.3750	0.3750	0.3958	0.3125	0.3958	0.3708	0.0306
6.0000	0.3023	0.2500	0.3864	0.3409	0.3182	0.3196	0.0448
7.0000	0.2917	0.4167	0.4167	0.2917	0.3333	0.3500	0.0565
8.0000	0.3500	0.3750	0.3000	0.4250	0.3750	0.3650	0.0406
9.0000	0.4375	0.3542	0.3958	0.3125	0.3750	0.3750	0.0417
10.0000	0.3125	0.3750	0.3333	0.3958	0.3125	0.3458	0.0339
					Avg	0.3470	0.0413

Shallow CNN	bias: True	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.3000	0.2500	0.1500	0.2500	0.2400	0.0490
2.0000	0.2917	0.4167	0.2292	0.3333	0.2917	0.3125	0.0618
3.0000	0.1667	0.2500	0.1667	0.2500	0.2500	0.2167	0.0408
4.0000	0.2917	0.2500	0.2083	0.2500	0.2500	0.2500	0.0264
5.0000	0.3750	0.2500	0.2083	0.3958	0.2917	0.3042	0.0717
6.0000	0.3182	0.3256	0.3721	0.3256	0.2791	0.3241	0.0296
7.0000	0.3958	0.3125	0.3125	0.2917	0.2708	0.3167	0.0425
8.0000	0.3250	0.3500	0.4000	0.1750	0.2750	0.3050	0.0765
9.0000	0.3333	0.3542	0.3125	0.3125	0.1875	0.3000	0.0583
10.0000	0.3542	0.2083	0.3333	0.3333	0.2500	0.2958	0.0565
					Avg	0.2865	0.0513

Table 8.53: 254 Hz

Shallow CNN	bias: False	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9500	1.0000	1.0000	1.0000	1.0000	0.9900	0.0200
2.0000	1.0000	1.0000	0.7708	0.8403	1.0000	0.9222	0.0978
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	0.9931	0.7917	0.9861	0.9167	0.9931	0.9361	0.0778
5.0000	1.0000	1.0000	0.9167	1.0000	0.9514	0.9736	0.0341
6.0000	1.0000	1.0000	1.0000	1.0000	0.3411	0.8682	0.2636
7.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
8.0000	0.9417	1.0000	1.0000	1.0000	1.0000	0.9883	0.0233
9.0000	0.7083	0.9583	0.9653	0.9514	1.0000	0.9167	0.1055
10.0000	0.9653	0.9931	0.9236	0.9931	0.9583	0.9667	0.0258
					Avg	0.9562	0.0648

Shallow CNN	bias: False	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.4000	0.2750	0.2500	0.2500	0.3750	0.3100	0.0644
2.0000	0.3125	0.3125	0.5000	0.2708	0.3125	0.3417	0.0808
3.0000	0.3056	0.3889	0.3333	0.3333	0.3056	0.3333	0.0304
4.0000	0.3333	0.3542	0.3542	0.3542	0.2917	0.3375	0.0243
5.0000	0.3542	0.3333	0.3750	0.3542	0.3958	0.3625	0.0212
6.0000	0.2558	0.3182	0.3409	0.2500	0.2500	0.2830	0.0388
7.0000	0.3125	0.3125	0.2708	0.3958	0.3333	0.3250	0.0408
8.0000	0.4000	0.4250	0.3750	0.4750	0.3250	0.4000	0.0500
9.0000	0.3750	0.3542	0.2917	0.3542	0.3125	0.3375	0.0306
10.0000	0.3125	0.4583	0.3958	0.4167	0.3750	0.3917	0.0482
					Avg	0.3422	0.0430

Shallow CNN	bias: False	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3500	0.2250	0.1500	0.1750	0.2250	0.2250	0.0689
2.0000	0.2292	0.2500	0.3333	0.2500	0.2083	0.2542	0.0425
3.0000	0.3333	0.2222	0.3333	0.1944	0.2500	0.2667	0.0572
4.0000	0.3542	0.2708	0.2708	0.2708	0.3333	0.3000	0.0363
5.0000	0.2917	0.3958	0.2708	0.2708	0.2917	0.3042	0.0468
6.0000	0.1591	0.2558	0.2558	0.1860	0.2558	0.2225	0.0417
7.0000	0.2917	0.2708	0.3333	0.3542	0.2917	0.3083	0.0306
8.0000	0.2250	0.3000	0.3250	0.2500	0.3500	0.2900	0.0464
9.0000	0.2083	0.1875	0.2500	0.3958	0.2292	0.2542	0.0738
10.0000	0.2708	0.4583	0.2708	0.2917	0.2708	0.3125	0.0734
					Avg	0.2738	0.0518

Table 8.54: 254 Hz

Shallow CNN	bias: True	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	0.8750	0.2500	0.8250	0.2915
2.0000	0.2500	1.0000	1.0000	1.0000	0.2917	0.7083	0.3575
3.0000	0.7593	1.0000	1.0000	1.0000	1.0000	0.9519	0.0963
4.0000	1.0000	1.0000	1.0000	0.6389	0.5625	0.8403	0.1971
5.0000	1.0000	0.4653	0.7778	0.9583	0.2778	0.6958	0.2814
6.0000	1.0000	0.3023	0.6667	1.0000	0.4651	0.6868	0.2806
7.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
8.0000	0.9917	1.0000	0.9917	0.3000	1.0000	0.8567	0.2784
9.0000	0.8889	1.0000	0.9931	1.0000	1.0000	0.9764	0.0438
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.8541	0.1827

Shallow CNN	bias: True	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.2750	0.3000	0.3250	0.2500	0.2800	0.0292
2.0000	0.2500	0.3542	0.3542	0.3958	0.2500	0.3208	0.0598
3.0000	0.3333	0.2500	0.3056	0.3056	0.3611	0.3111	0.0369
4.0000	0.3750	0.2500	0.3542	0.2917	0.2917	0.3125	0.0456
5.0000	0.2500	0.2917	0.3125	0.3542	0.2500	0.2917	0.0395
6.0000	0.3721	0.2727	0.2500	0.3409	0.2955	0.3062	0.0446
7.0000	0.3750	0.2708	0.2917	0.3750	0.2500	0.3125	0.0527
8.0000	0.3500	0.3500	0.3500	0.2750	0.3750	0.3400	0.0339
9.0000	0.3958	0.3333	0.2917	0.3750	0.4167	0.3625	0.0449
10.0000	0.3750	0.4792	0.3542	0.4167	0.2500	0.3750	0.0757
					Avg	0.3212	0.0463

Shallow CNN	bias: True	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.2250	0.3000	0.1750	0.2500	0.2550	0.0534
2.0000	0.2500	0.3750	0.3333	0.2500	0.2708	0.2958	0.0500
3.0000	0.1667	0.3056	0.3056	0.1111	0.1389	0.2056	0.0835
4.0000	0.2500	0.2708	0.2500	0.2917	0.2917	0.2708	0.0186
5.0000	0.2500	0.2500	0.3125	0.1875	0.2708	0.2542	0.0404
6.0000	0.2045	0.2326	0.3023	0.2093	0.2093	0.2316	0.0367
7.0000	0.4375	0.2708	0.1875	0.2708	0.2292	0.2792	0.0850
8.0000	0.3500	0.3250	0.3750	0.2750	0.2750	0.3200	0.0400
9.0000	0.2500	0.3333	0.3333	0.3333	0.1667	0.2833	0.0667
10.0000	0.3333	0.2292	0.4583	0.4375	0.3750	0.3667	0.0819
					Avg	0.2762	0.0556

Table 8.55: 1024 Hz

Shallow CNN	bias: False	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.7167	1.0000	0.9333	0.9750	1.0000	0.9250	0.1070
2.0000	1.0000	0.7431	0.5208	0.4653	1.0000	0.7458	0.2274
3.0000	0.2500	1.0000	0.2500	1.0000	1.0000	0.7000	0.3674
4.0000	1.0000	0.9931	1.0000	0.5833	1.0000	0.9153	0.1660
5.0000	1.0000	1.0000	0.6319	0.8889	1.0000	0.9042	0.1428
6.0000	0.9302	1.0000	1.0000	0.2636	0.9922	0.8372	0.2880
7.0000	0.4861	1.0000	1.0000	0.5347	0.2500	0.6542	0.2983
8.0000	1.0000	1.0000	1.0000	1.0000	0.9667	0.9933	0.0133
9.0000	0.5417	1.0000	1.0000	1.0000	0.7083	0.8500	0.1911
10.0000	0.9931	1.0000	1.0000	1.0000	0.4583	0.8903	0.2160
					Avg	0.8415	0.2017

Shallow CNN	bias: False	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.2750	0.3750	0.4250	0.2750	0.3250	0.0632
2.0000	0.3958	0.3125	0.3125	0.3125	0.3750	0.3417	0.0363
3.0000	0.2500	0.3611	0.3333	0.2500	0.2500	0.2889	0.0484
4.0000	0.3542	0.3750	0.3542	0.2708	0.2708	0.3250	0.0449
5.0000	0.2708	0.2708	0.3333	0.3125	0.3333	0.3042	0.0283
6.0000	0.2791	0.2727	0.3864	0.2500	0.3636	0.3104	0.0541
7.0000	0.2708	0.2917	0.3750	0.2708	0.2500	0.2917	0.0437
8.0000	0.3000	0.3000	0.4250	0.3500	0.3500	0.3450	0.0458
9.0000	0.3333	0.3333	0.3333	0.4583	0.2917	0.3500	0.0565
10.0000	0.4167	0.2708	0.3750	0.3333	0.3750	0.3542	0.0493
					Avg	0.3236	0.0471

Shallow CNN	bias: False	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2250	0.2000	0.1750	0.1250	0.2000	0.1850	0.0339
2.0000	0.3333	0.2500	0.2708	0.3333	0.3125	0.3000	0.0339
3.0000	0.2500	0.1389	0.1389	0.2500	0.1944	0.1944	0.0497
4.0000	0.2083	0.2083	0.2917	0.3125	0.3958	0.2833	0.0705
5.0000	0.1667	0.1875	0.2500	0.2708	0.2083	0.2167	0.0386
6.0000	0.3182	0.3256	0.3256	0.2326	0.3023	0.3008	0.0352
7.0000	0.2500	0.2500	0.2917	0.2708	0.2500	0.2625	0.0167
8.0000	0.3500	0.3500	0.4000	0.2250	0.3250	0.3300	0.0579
9.0000	0.2917	0.2917	0.1458	0.2708	0.3750	0.2750	0.0738
10.0000	0.3125	0.3542	0.2292	0.2708	0.2708	0.2875	0.0425
					Avg	0.2635	0.0453

Table 8.56: 1024 Hz

Shallow CNN	dropout:0.001	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	0.6500	0.7000	1.0000	1.0000	0.8700	0.1600
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	1.0000	0.8611	0.9352	0.9167	0.9815	0.9389	0.0492
4.0000	1.0000	0.5625	1.0000	1.0000	0.9931	0.9111	0.1743
5.0000	1.0000	1.0000	0.9653	0.9375	1.0000	0.9806	0.0254
6.0000	1.0000	0.2481	1.0000	1.0000	0.8837	0.8264	0.2926
7.0000	1.0000	0.3194	1.0000	1.0000	1.0000	0.8639	0.2722
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	0.8889	0.9931	1.0000	1.0000	1.0000	0.9764	0.0438
10.0000	1.0000	0.9028	1.0000	0.9861	0.7361	0.9250	0.1012
					Avg	0.9292	0.1119

Shallow CNN	dropout:0.001	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3500	0.2750	0.3000	0.3500	0.3500	0.3250	0.0316
2.0000	0.3333	0.3333	0.3333	0.2500	0.3125	0.3125	0.0323
3.0000	0.3056	0.3611	0.3056	0.3056	0.3056	0.3167	0.0222
4.0000	0.3333	0.3750	0.3958	0.3542	0.2917	0.3500	0.0358
5.0000	0.3125	0.3542	0.3958	0.3333	0.2917	0.3375	0.0358
6.0000	0.2791	0.2500	0.3182	0.2955	0.2955	0.2876	0.0226
7.0000	0.3333	0.2500	0.2917	0.2917	0.3542	0.3042	0.0363
8.0000	0.3250	0.2750	0.4000	0.5500	0.3750	0.3850	0.0930
9.0000	0.3333	0.3958	0.3333	0.2917	0.2708	0.3250	0.0429
10.0000	0.3958	0.3333	0.3125	0.4375	0.3125	0.3583	0.0500
					Avg	0.3302	0.0403

Shallow CNN	dropout:0.001	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.3250	0.2500	0.2500	0.2000	0.2600	0.0406
2.0000	0.3125	0.2292	0.1667	0.2917	0.2917	0.2583	0.0537
3.0000	0.2500	0.3056	0.1944	0.3333	0.1667	0.2500	0.0633
4.0000	0.2292	0.2917	0.2708	0.3542	0.2083	0.2708	0.0510
5.0000	0.2500	0.2292	0.2708	0.2917	0.3125	0.2708	0.0295
6.0000	0.3636	0.2558	0.2093	0.1628	0.2093	0.2402	0.0684
7.0000	0.1667	0.2292	0.3333	0.3542	0.2917	0.2750	0.0690
8.0000	0.4250	0.2500	0.2750	0.2250	0.3250	0.3000	0.0707
9.0000	0.2708	0.3333	0.2083	0.2708	0.2292	0.2625	0.0429
10.0000	0.2292	0.2917	0.3542	0.3750	0.2500	0.3000	0.0568
					Avg	0.2688	0.0546

Table 8.57: 254 Hz

Shallow CNN	dropout:0.002	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.9333	1.0000	1.0000	0.3333	0.8533	0.2613
2.0000	0.9028	1.0000	0.7222	1.0000	1.0000	0.9250	0.1082
3.0000	1.0000	0.9907	1.0000	1.0000	1.0000	0.9981	0.0037
4.0000	0.8889	1.0000	0.8889	0.9792	0.9444	0.9403	0.0456
5.0000	0.9028	1.0000	0.9861	1.0000	0.8750	0.9528	0.0531
6.0000	1.0000	1.0000	1.0000	1.0000	0.2946	0.8589	0.2822
7.0000	1.0000	1.0000	1.0000	1.0000	0.3472	0.8694	0.2611
8.0000	0.7667	0.9917	1.0000	1.0000	1.0000	0.9517	0.0926
9.0000	1.0000	0.9722	1.0000	1.0000	0.9931	0.9931	0.0108
10.0000	0.9931	0.9722	0.9792	0.9931	1.0000	0.9875	0.0102
					Avg	0.9330	0.1129

Shallow CNN	dropout:0.002	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3500	0.3750	0.3500	0.3250	0.3000	0.3400	0.0255
2.0000	0.2917	0.3333	0.4167	0.3333	0.3542	0.3458	0.0408
3.0000	0.2778	0.3611	0.2778	0.2500	0.3056	0.2944	0.0377
4.0000	0.3542	0.3542	0.3125	0.3125	0.3958	0.3458	0.0312
5.0000	0.3125	0.3125	0.2917	0.3125	0.3750	0.3208	0.0283
6.0000	0.2791	0.3182	0.3182	0.2727	0.3182	0.3013	0.0208
7.0000	0.3958	0.3333	0.3542	0.2917	0.2500	0.3250	0.0503
8.0000	0.3750	0.3750	0.3000	0.3750	0.3250	0.3500	0.0316
9.0000	0.3958	0.4375	0.3125	0.3542	0.3333	0.3667	0.0449
10.0000	0.2917	0.3125	0.3125	0.4792	0.4167	0.3625	0.0729
					Avg	0.3352	0.0384

Shallow CNN	dropout:0.002	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.2500	0.3000	0.2250	0.2250	0.2550	0.0292
2.0000	0.2708	0.3750	0.1667	0.2292	0.2500	0.2583	0.0680
3.0000	0.2778	0.1389	0.1944	0.3889	0.3611	0.2722	0.0953
4.0000	0.2708	0.2292	0.3542	0.2917	0.2917	0.2875	0.0404
5.0000	0.2292	0.3333	0.2500	0.3333	0.1667	0.2625	0.0640
6.0000	0.3409	0.3023	0.2326	0.1860	0.2558	0.2635	0.0539
7.0000	0.3542	0.4375	0.1667	0.2917	0.2083	0.2917	0.0977
8.0000	0.2250	0.2500	0.3250	0.4000	0.2000	0.2800	0.0731
9.0000	0.1458	0.3750	0.2708	0.3125	0.3750	0.2958	0.0848
10.0000	0.1667	0.2292	0.3542	0.3125	0.2500	0.2625	0.0654
					Avg	0.2729	0.0672

Table 8.58: 254 Hz

Shallow CNN	dropout: 0.01	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9083	1.0000	1.0000	1.0000	1.0000	0.9817	0.0367
2.0000	1.0000	1.0000	1.0000	1.0000	0.9653	0.9931	0.0139
3.0000	1.0000	1.0000	1.0000	1.0000	0.9444	0.9889	0.0222
4.0000	1.0000	0.9861	0.8333	0.6528	0.9444	0.8833	0.1293
5.0000	1.0000	0.7917	0.9722	0.5000	1.0000	0.8528	0.1928
6.0000	1.0000	0.5271	0.2636	1.0000	0.5039	0.6589	0.2934
7.0000	1.0000	1.0000	1.0000	0.9861	1.0000	0.9972	0.0056
8.0000	0.9333	0.9583	1.0000	1.0000	1.0000	0.9783	0.0277
9.0000	1.0000	1.0000	0.6944	1.0000	0.5417	0.8472	0.1933
10.0000	1.0000	0.9792	0.9306	0.9583	0.7222	0.9181	0.1006
					Avg	0.9099	0.1015

Shallow CNN	dropout: 0.01	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3500	0.4000	0.3000	0.3750	0.4000	0.3650	0.0374
2.0000	0.3333	0.3542	0.3333	0.3125	0.3125	0.3292	0.0156
3.0000	0.3056	0.3611	0.3333	0.3333	0.3611	0.3389	0.0208
4.0000	0.4167	0.3750	0.3750	0.2917	0.3125	0.3542	0.0456
5.0000	0.2917	0.3542	0.2708	0.2708	0.3333	0.3042	0.0339
6.0000	0.2558	0.3182	0.2500	0.2727	0.2955	0.2784	0.0254
7.0000	0.2708	0.3125	0.3125	0.3958	0.2917	0.3167	0.0425
8.0000	0.4500	0.3750	0.2500	0.3500	0.3750	0.3600	0.0644
9.0000	0.2708	0.3750	0.3542	0.2917	0.2708	0.3125	0.0437
10.0000	0.2917	0.3958	0.4583	0.4583	0.3125	0.3833	0.0705
					Avg	0.3342	0.0400

Shallow CNN	dropout: 0.01	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.2500	0.3000	0.1750	0.2750	0.2500	0.0418
2.0000	0.3333	0.3125	0.2500	0.2708	0.1875	0.2708	0.0510
3.0000	0.3333	0.1944	0.3333	0.2778	0.2778	0.2833	0.0509
4.0000	0.3333	0.2292	0.3125	0.3333	0.3542	0.3125	0.0437
5.0000	0.3125	0.3333	0.2500	0.2500	0.2083	0.2708	0.0456
6.0000	0.2500	0.2093	0.2326	0.2558	0.2093	0.2314	0.0196
7.0000	0.2917	0.3958	0.2708	0.2917	0.3125	0.3125	0.0437
8.0000	0.4000	0.3250	0.3000	0.3250	0.3500	0.3400	0.0339
9.0000	0.1667	0.3333	0.2292	0.3333	0.2708	0.2667	0.0637
10.0000	0.3750	0.4583	0.3750	0.2292	0.3333	0.3542	0.0745
					Avg	0.2892	0.0469

Table 8.59: 254 Hz

Shallow CNN	dropout: 0.1	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9750	1.0000	1.0000	1.0000	1.0000	0.9950	0.0100
2.0000	1.0000	0.9931	0.9861	1.0000	0.9444	0.9847	0.0208
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	0.9583	1.0000	1.0000	1.0000	1.0000	0.9917	0.0167
5.0000	0.9792	1.0000	1.0000	0.9861	0.7917	0.9514	0.0803
6.0000	1.0000	0.8915	1.0000	0.9922	1.0000	0.9767	0.0427
7.0000	1.0000	1.0000	1.0000	0.9861	1.0000	0.9972	0.0056
8.0000	1.0000	1.0000	1.0000	1.0000	0.6083	0.9217	0.1567
9.0000	1.0000	1.0000	0.9653	0.7431	0.9375	0.9292	0.0960
10.0000	0.8472	0.9861	1.0000	1.0000	0.9097	0.9486	0.0608
					Avg	0.9696	0.0489

Shallow CNN	dropout: 0.1	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3750	0.3000	0.3250	0.3750	0.3250	0.3400	0.0300
2.0000	0.3125	0.2917	0.3333	0.2708	0.3333	0.3083	0.0243
3.0000	0.4167	0.3056	0.2778	0.2778	0.3056	0.3167	0.0515
4.0000	0.3750	0.3958	0.3542	0.3333	0.2708	0.3458	0.0429
5.0000	0.3542	0.2917	0.2917	0.3333	0.2917	0.3125	0.0264
6.0000	0.2558	0.2955	0.3409	0.2955	0.2955	0.2966	0.0269
7.0000	0.3333	0.4375	0.3125	0.3542	0.3542	0.3583	0.0425
8.0000	0.3500	0.4250	0.4000	0.3500	0.3250	0.3700	0.0367
9.0000	0.2917	0.4375	0.3125	0.2708	0.3542	0.3333	0.0589
10.0000	0.2917	0.3125	0.3125	0.2917	0.3958	0.3208	0.0386
					Avg	0.3302	0.0379

Shallow CNN	dropout: 0.1	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.1750	0.1250	0.2000	0.2500	0.2000	0.0474
2.0000	0.1458	0.3125	0.3958	0.2708	0.1458	0.2542	0.0972
3.0000	0.1111	0.2500	0.2500	0.1667	0.2500	0.2056	0.0572
4.0000	0.2500	0.4167	0.2917	0.2083	0.2708	0.2875	0.0702
5.0000	0.3542	0.3750	0.3542	0.2708	0.3542	0.3417	0.0363
6.0000	0.2727	0.2093	0.3953	0.3721	0.3256	0.3150	0.0675
7.0000	0.2917	0.1875	0.2917	0.2708	0.3125	0.2708	0.0437
8.0000	0.3250	0.3000	0.4000	0.3750	0.4000	0.3600	0.0406
9.0000	0.2708	0.2292	0.2500	0.2708	0.2708	0.2583	0.0167
10.0000	0.2708	0.2708	0.3958	0.3333	0.2500	0.3042	0.0537
					Avg	0.2797	0.0531

Table 8.60: 254 Hz

Shallow CNN	dropout: 0.25	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.8667	0.2583	1.0000	0.4250	1.0000	0.7100	0.3092
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	1.0000	1.0000	1.0000	1.0000	0.9792	0.9958	0.0083
5.0000	0.3125	1.0000	1.0000	1.0000	1.0000	0.8625	0.2750
6.0000	1.0000	1.0000	1.0000	0.9612	0.8217	0.9566	0.0691
7.0000	0.8194	1.0000	1.0000	1.0000	1.0000	0.9639	0.0722
8.0000	1.0000	1.0000	0.9917	0.9417	1.0000	0.9867	0.0227
9.0000	1.0000	0.9931	0.9931	1.0000	0.5417	0.9056	0.1820
10.0000	1.0000	1.0000	0.8333	1.0000	0.9931	0.9653	0.0660
					Avg	0.9346	0.1005

Shallow CNN	dropout: 0.25	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.2500	0.3250	0.3500	0.3000	0.3050	0.0332
2.0000	0.3750	0.3750	0.3542	0.3542	0.3958	0.3708	0.0156
3.0000	0.2778	0.3611	0.3056	0.2778	0.2778	0.3000	0.0324
4.0000	0.4375	0.3125	0.3125	0.3750	0.2917	0.3458	0.0537
5.0000	0.2917	0.4167	0.3333	0.4167	0.2917	0.3500	0.0565
6.0000	0.3023	0.2955	0.3182	0.2727	0.2727	0.2923	0.0176
7.0000	0.3542	0.3750	0.3958	0.4167	0.2917	0.3667	0.0429
8.0000	0.3250	0.3000	0.3750	0.4500	0.4000	0.3700	0.0534
9.0000	0.3125	0.3750	0.3958	0.4167	0.3542	0.3708	0.0358
10.0000	0.3542	0.3333	0.3333	0.2917	0.3542	0.3333	0.0228
					Avg	0.3405	0.0364

Shallow CNN	dropout: 0.25	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.2500	0.2500	0.3000	0.3250	0.2750	0.0316
2.0000	0.2292	0.3125	0.2917	0.1875	0.2500	0.2542	0.0445
3.0000	0.3333	0.1667	0.3056	0.1944	0.2778	0.2556	0.0643
4.0000	0.2500	0.3125	0.3542	0.3333	0.1875	0.2875	0.0610
5.0000	0.2083	0.2500	0.2500	0.3125	0.2500	0.2542	0.0333
6.0000	0.1136	0.3488	0.2791	0.2326	0.2558	0.2460	0.0768
7.0000	0.2708	0.2708	0.3333	0.2708	0.2917	0.2875	0.0243
8.0000	0.3500	0.4500	0.3250	0.4000	0.1500	0.3350	0.1020
9.0000	0.3542	0.2083	0.1875	0.2083	0.2917	0.2500	0.0632
10.0000	0.2083	0.2500	0.3333	0.1875	0.3750	0.2708	0.0722
					Avg	0.2716	0.0573

Table 8.61: 254 Hz

Shallow CNN	dropout: 0.5	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9083	1.0000	0.8417	0.5417	1.0000	0.8583	0.1692
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	0.2500	1.0000	1.0000	1.0000	0.9815	0.8463	0.2982
4.0000	0.9514	0.9028	0.9931	1.0000	0.9653	0.9625	0.0347
5.0000	0.9375	0.9861	1.0000	0.9931	0.9792	0.9792	0.0220
6.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
7.0000	1.0000	1.0000	1.0000	0.9306	0.9931	0.9847	0.0272
8.0000	0.4500	1.0000	1.0000	0.9083	0.9917	0.8700	0.2128
9.0000	0.9931	1.0000	1.0000	1.0000	0.2500	0.8486	0.2993
10.0000	0.6944	0.9444	1.0000	0.8611	1.0000	0.9000	0.1147
					Avg	0.9250	0.1178

Shallow CNN	dropout: 0.5	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.2500	0.3750	0.3000	0.4000	0.3150	0.0624
2.0000	0.3333	0.3750	0.3750	0.3542	0.2917	0.3458	0.0312
3.0000	0.2500	0.4444	0.4167	0.4444	0.3611	0.3833	0.0733
4.0000	0.2917	0.3542	0.3333	0.5417	0.4167	0.3875	0.0870
5.0000	0.4375	0.4167	0.3542	0.3750	0.2708	0.3708	0.0580
6.0000	0.3256	0.3636	0.3409	0.2955	0.3409	0.3333	0.0225
7.0000	0.2708	0.3750	0.2500	0.2708	0.3750	0.3083	0.0550
8.0000	0.3750	0.3000	0.4250	0.4000	0.4250	0.3850	0.0464
9.0000	0.2708	0.3542	0.3542	0.3958	0.2500	0.3250	0.0553
10.0000	0.3333	0.3333	0.3542	0.4792	0.3542	0.3708	0.0550
					Avg	0.3525	0.0546

Shallow CNN	dropout: 0.5	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3250	0.1500	0.3250	0.3000	0.2750	0.2750	0.0652
2.0000	0.2083	0.2708	0.2708	0.2708	0.3333	0.2708	0.0395
3.0000	0.2500	0.2500	0.2778	0.3611	0.2222	0.2722	0.0478
4.0000	0.3750	0.2708	0.2500	0.2500	0.2292	0.2750	0.0517
5.0000	0.3125	0.2500	0.3542	0.2917	0.2917	0.3000	0.0339
6.0000	0.2273	0.1860	0.2326	0.2093	0.2326	0.2175	0.0179
7.0000	0.1875	0.3750	0.2708	0.2292	0.2917	0.2708	0.0632
8.0000	0.2750	0.2500	0.2750	0.3500	0.2500	0.2800	0.0367
9.0000	0.3542	0.3958	0.1875	0.2708	0.2500	0.2917	0.0745
10.0000	0.2917	0.2917	0.3125	0.3750	0.3542	0.3250	0.0339
					Avg	0.2778	0.0464

Table 8.62: 254 Hz

Shallow CNN	dropout:0.001	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.6000	1.0000	1.0000	1.0000	0.3333	0.7867	0.2746
2.0000	0.9861	0.9722	0.4792	1.0000	1.0000	0.8875	0.2044
3.0000	1.0000	1.0000	0.2500	0.2963	1.0000	0.7093	0.3564
4.0000	1.0000	1.0000	0.8056	1.0000	1.0000	0.9611	0.0778
5.0000	1.0000	1.0000	1.0000	0.2500	1.0000	0.8500	0.3000
6.0000	0.4884	1.0000	1.0000	0.2946	1.0000	0.7566	0.3044
7.0000	0.2708	1.0000	1.0000	0.2500	1.0000	0.7042	0.3624
8.0000	1.0000	1.0000	0.3417	0.5833	1.0000	0.7850	0.2742
9.0000	1.0000	1.0000	1.0000	1.0000	0.5000	0.9000	0.2000
10.0000	1.0000	1.0000	0.8889	1.0000	0.7778	0.9333	0.0889
					Avg	0.8274	0.2443

Shallow CNN	dropout:0.001	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.4000	0.3250	0.3000	0.2750	0.3150	0.0464
2.0000	0.3958	0.3125	0.2708	0.3750	0.3333	0.3375	0.0445
3.0000	0.2778	0.2778	0.2500	0.2778	0.2778	0.2722	0.0111
4.0000	0.2917	0.3542	0.2708	0.3542	0.4167	0.3375	0.0517
5.0000	0.3125	0.2500	0.3542	0.2500	0.2500	0.2833	0.0429
6.0000	0.2558	0.2955	0.4318	0.2500	0.3636	0.3193	0.0693
7.0000	0.2500	0.2917	0.2500	0.2500	0.3125	0.2708	0.0264
8.0000	0.2750	0.3750	0.2500	0.3000	0.4500	0.3300	0.0731
9.0000	0.3542	0.3542	0.2500	0.3125	0.2500	0.3042	0.0468
10.0000	0.3125	0.3125	0.2917	0.3958	0.3542	0.3333	0.0373
					Avg	0.3103	0.0449

Shallow CNN	dropout:0.001	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.2750	0.3500	0.1250	0.2500	0.2500	0.0725
2.0000	0.2917	0.3125	0.3542	0.2917	0.2292	0.2958	0.0404
3.0000	0.2222	0.3333	0.2500	0.2500	0.2222	0.2556	0.0408
4.0000	0.2500	0.2292	0.3750	0.2708	0.1667	0.2583	0.0680
5.0000	0.2917	0.2083	0.1875	0.2500	0.2292	0.2333	0.0358
6.0000	0.2273	0.2791	0.1860	0.2326	0.2558	0.2362	0.0311
7.0000	0.2500	0.1667	0.3542	0.2500	0.2083	0.2458	0.0624
8.0000	0.4750	0.3000	0.2500	0.3750	0.1750	0.3150	0.1032
9.0000	0.2500	0.2708	0.2292	0.3333	0.2708	0.2708	0.0349
10.0000	0.3542	0.4375	0.3333	0.3542	0.3542	0.3667	0.0363
					Avg	0.2728	0.0525

Table 8.63: 1024 Hz

Shallow CNN	dropout:0.002	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.4333	1.0000	0.5083	0.5000	1.0000	0.6883	0.2558
2.0000	0.3056	0.7431	1.0000	1.0000	1.0000	0.8097	0.2710
3.0000	1.0000	0.4259	0.7778	1.0000	0.8704	0.8148	0.2118
4.0000	1.0000	0.3958	1.0000	1.0000	1.0000	0.8792	0.2417
5.0000	0.3194	1.0000	1.0000	1.0000	1.0000	0.8639	0.2722
6.0000	1.0000	1.0000	1.0000	0.4806	1.0000	0.8961	0.2078
7.0000	1.0000	0.8819	0.5000	1.0000	0.9653	0.8694	0.1897
8.0000	1.0000	0.9917	0.8750	1.0000	0.9917	0.9717	0.0485
9.0000	1.0000	1.0000	0.9861	1.0000	1.0000	0.9972	0.0056
10.0000	1.0000	1.0000	1.0000	1.0000	0.3681	0.8736	0.2528
					Avg	0.8664	0.1957

Shallow CNN	dropout:0.002	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.3250	0.3500	0.4250	0.2750	0.3250	0.0612
2.0000	0.2708	0.3333	0.2917	0.3125	0.3542	0.3125	0.0295
3.0000	0.3056	0.3333	0.3056	0.2778	0.2778	0.3000	0.0208
4.0000	0.2917	0.2917	0.2917	0.3333	0.4167	0.3250	0.0486
5.0000	0.2500	0.2917	0.2708	0.3125	0.2917	0.2833	0.0212
6.0000	0.3953	0.2727	0.3182	0.2727	0.3409	0.3200	0.0460
7.0000	0.2708	0.2917	0.3125	0.4375	0.2708	0.3167	0.0624
8.0000	0.3250	0.4250	0.3250	0.3000	0.4250	0.3600	0.0539
9.0000	0.3958	0.3125	0.4167	0.4583	0.3333	0.3833	0.0537
10.0000	0.3542	0.3958	0.3958	0.3750	0.2708	0.3583	0.0464
					Avg	0.3284	0.0444

Shallow CNN	dropout:0.002	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2250	0.1750	0.1500	0.2250	0.2750	0.2100	0.0436
2.0000	0.2500	0.3125	0.2500	0.2500	0.2917	0.2708	0.0264
3.0000	0.3056	0.1944	0.1944	0.2500	0.2222	0.2333	0.0416
4.0000	0.2292	0.2292	0.3333	0.2500	0.3958	0.2875	0.0664
5.0000	0.2500	0.2917	0.1875	0.2083	0.1667	0.2208	0.0449
6.0000	0.2045	0.2326	0.1860	0.2558	0.2791	0.2316	0.0336
7.0000	0.3333	0.1667	0.2917	0.2500	0.2917	0.2667	0.0565
8.0000	0.3500	0.3250	0.3000	0.2750	0.2500	0.3000	0.0354
9.0000	0.2500	0.2708	0.3542	0.2083	0.2083	0.2583	0.0537
10.0000	0.2292	0.2917	0.2917	0.3958	0.2500	0.2917	0.0574
					Avg	0.2571	0.0459

Table 8.64: 1024 Hz

Shallow CNN	dropout: 0.01	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.2500	0.9917	0.9917	1.0000	0.8467	0.2984
2.0000	0.8194	1.0000	1.0000	0.9444	0.8333	0.9194	0.0788
3.0000	1.0000	0.2593	0.5093	0.5463	1.0000	0.6630	0.2924
4.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
5.0000	0.5000	0.6042	0.9236	1.0000	0.3333	0.6722	0.2529
6.0000	1.0000	1.0000	0.7209	1.0000	0.5736	0.8589	0.1790
7.0000	1.0000	0.5417	0.7292	1.0000	0.6667	0.7875	0.1837
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	0.4028	1.0000	1.0000	1.0000	0.8806	0.2389
10.0000	0.8472	0.8611	1.0000	1.0000	1.0000	0.9417	0.0716
					Avg	0.8570	0.1596

Shallow CNN	dropout: 0.01	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.2500	0.2500	0.2750	0.3250	0.2800	0.0292
2.0000	0.3958	0.4167	0.2917	0.4583	0.3125	0.3750	0.0632
3.0000	0.3056	0.2500	0.2778	0.3056	0.4167	0.3111	0.0567
4.0000	0.3542	0.4583	0.2917	0.3750	0.3333	0.3625	0.0553
5.0000	0.3125	0.3125	0.3333	0.2917	0.2917	0.3083	0.0156
6.0000	0.2558	0.3409	0.2955	0.3409	0.2955	0.3057	0.0322
7.0000	0.2708	0.2500	0.3333	0.3542	0.2708	0.2958	0.0404
8.0000	0.4500	0.3750	0.4250	0.3000	0.4250	0.3950	0.0534
9.0000	0.3333	0.2917	0.3542	0.3125	0.2708	0.3125	0.0295
10.0000	0.3542	0.3542	0.3958	0.4792	0.3542	0.3875	0.0486
					Avg	0.3333	0.0424

Shallow CNN	dropout: 0.01	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.1750	0.2500	0.2750	0.3500	0.2250	0.2550	0.0579
2.0000	0.2917	0.2917	0.3125	0.3125	0.3958	0.3208	0.0386
3.0000	0.2778	0.2500	0.2778	0.2778	0.1667	0.2500	0.0430
4.0000	0.2292	0.2917	0.2500	0.2292	0.2917	0.2583	0.0283
5.0000	0.2083	0.2083	0.2500	0.2292	0.2292	0.2250	0.0156
6.0000	0.2500	0.3023	0.2093	0.3256	0.1395	0.2453	0.0666
7.0000	0.2500	0.2500	0.2708	0.2708	0.1875	0.2458	0.0306
8.0000	0.2000	0.3750	0.3250	0.3750	0.4000	0.3350	0.0718
9.0000	0.2917	0.2708	0.2500	0.2500	0.3333	0.2792	0.0312
10.0000	0.3750	0.3333	0.3125	0.3542	0.3542	0.3458	0.0212
					Avg	0.2760	0.0405

Table 8.65: 1024 Hz

Shallow CNN	dropout: 0.1	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	0.3667	1.0000	1.0000	0.9917	0.8717	0.2525
2.0000	1.0000	0.8681	1.0000	0.5347	0.5000	0.7806	0.2205
3.0000	1.0000	0.5556	1.0000	1.0000	0.4352	0.7981	0.2501
4.0000	1.0000	1.0000	0.9861	0.3056	0.9861	0.8556	0.2751
5.0000	1.0000	0.5833	0.5069	0.5139	0.4931	0.6194	0.1928
6.0000	0.3566	1.0000	1.0000	1.0000	1.0000	0.8713	0.2574
7.0000	0.2500	0.7431	0.9861	0.4722	0.5278	0.5958	0.2504
8.0000	1.0000	0.9917	1.0000	0.9583	1.0000	0.9900	0.0162
9.0000	0.8472	0.7986	1.0000	1.0000	0.8819	0.9056	0.0815
10.0000	1.0000	0.5208	1.0000	1.0000	1.0000	0.9042	0.1917
					Avg	0.8192	0.1988

Shallow CNN	dropout: 0.1	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3000	0.2500	0.3500	0.3000	0.4000	0.3200	0.0510
2.0000	0.4167	0.4583	0.3125	0.3125	0.2917	0.3583	0.0664
3.0000	0.3056	0.2500	0.3056	0.2500	0.2778	0.2778	0.0248
4.0000	0.2917	0.2917	0.3125	0.3542	0.3750	0.3250	0.0339
5.0000	0.3125	0.2708	0.2708	0.2500	0.3125	0.2833	0.0250
6.0000	0.2791	0.3409	0.2955	0.2955	0.2500	0.2922	0.0295
7.0000	0.2500	0.2917	0.3333	0.2917	0.2917	0.2917	0.0264
8.0000	0.3500	0.2500	0.3250	0.3000	0.3000	0.3050	0.0332
9.0000	0.3750	0.3125	0.3542	0.3125	0.3125	0.3333	0.0264
10.0000	0.3333	0.2917	0.4375	0.4375	0.4167	0.3833	0.0598
					Avg	0.3170	0.0376

Shallow CNN	dropout: 0.1	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2250	0.2500	0.2000	0.3500	0.1750	0.2400	0.0604
2.0000	0.2292	0.2708	0.3958	0.3125	0.2292	0.2875	0.0624
3.0000	0.3611	0.2222	0.1667	0.1944	0.2500	0.2389	0.0671
4.0000	0.2500	0.3125	0.2708	0.2500	0.3125	0.2792	0.0283
5.0000	0.2292	0.1875	0.2292	0.2708	0.1875	0.2208	0.0312
6.0000	0.2045	0.3256	0.1628	0.1628	0.3256	0.2363	0.0745
7.0000	0.2500	0.2708	0.1458	0.2500	0.2500	0.2333	0.0445
8.0000	0.4000	0.3250	0.3250	0.2750	0.2500	0.3150	0.0515
9.0000	0.2917	0.2917	0.2917	0.1875	0.2292	0.2583	0.0429
10.0000	0.2917	0.2708	0.3333	0.2292	0.2917	0.2833	0.0339
					Avg	0.2593	0.0497

Table 8.66: 1024 Hz

Shallow CNN	dropout: 0.25	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
2.0000	1.0000	1.0000	1.0000	1.0000	0.9861	0.9972	0.0056
3.0000	1.0000	1.0000	1.0000	0.3241	0.2500	0.7148	0.3501
4.0000	1.0000	0.9375	0.8403	1.0000	1.0000	0.9556	0.0625
5.0000	0.5625	1.0000	0.2500	1.0000	1.0000	0.7625	0.3072
6.0000	0.4961	1.0000	0.9767	1.0000	1.0000	0.8946	0.1994
7.0000	1.0000	0.9931	1.0000	0.9514	1.0000	0.9889	0.0189
8.0000	1.0000	0.3167	1.0000	1.0000	1.0000	0.8633	0.2733
9.0000	0.2500	1.0000	0.9306	1.0000	1.0000	0.8361	0.2943
10.0000	0.9236	1.0000	0.9931	0.9931	0.7500	0.9319	0.0952
					Avg	0.8945	0.1606

Shallow CNN	dropout: 0.25	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.4000	0.3250	0.3250	0.2750	0.3500	0.3350	0.0406
2.0000	0.3750	0.3333	0.3958	0.4375	0.3958	0.3875	0.0339
3.0000	0.2500	0.3056	0.2778	0.2778	0.2500	0.2722	0.0208
4.0000	0.4375	0.2500	0.3542	0.3542	0.2708	0.3333	0.0672
5.0000	0.2500	0.2917	0.2500	0.2500	0.2917	0.2667	0.0204
6.0000	0.2558	0.3182	0.3182	0.2955	0.3409	0.3057	0.0288
7.0000	0.3750	0.2917	0.3125	0.2500	0.3542	0.3167	0.0445
8.0000	0.2750	0.2750	0.4000	0.3750	0.3250	0.3300	0.0510
9.0000	0.2500	0.2708	0.3750	0.3750	0.3750	0.3292	0.0565
10.0000	0.3542	0.3542	0.3958	0.3542	0.3542	0.3625	0.0167
					Avg	0.3239	0.0380

Shallow CNN	dropout: 0.25	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.3500	0.2000	0.1750	0.3750	0.2700	0.0797
2.0000	0.2292	0.2708	0.3125	0.3542	0.2917	0.2917	0.0417
3.0000	0.2778	0.1667	0.1667	0.1944	0.2500	0.2111	0.0451
4.0000	0.2917	0.2500	0.3333	0.3333	0.2292	0.2875	0.0425
5.0000	0.2708	0.2500	0.2500	0.2500	0.2083	0.2458	0.0204
6.0000	0.2727	0.2326	0.3721	0.2558	0.3488	0.2964	0.0543
7.0000	0.2083	0.1875	0.2917	0.2292	0.2500	0.2333	0.0358
8.0000	0.3500	0.2250	0.3000	0.2750	0.4250	0.3150	0.0682
9.0000	0.2500	0.2500	0.3333	0.2708	0.2500	0.2708	0.0323
10.0000	0.4167	0.2708	0.3125	0.3333	0.3542	0.3375	0.0482
					Avg	0.2759	0.0468

Table 8.67: 1024 Hz

Shallow CNN	dropout: 0.5	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	1.0000	0.4083	0.5583	0.9833	0.7900	0.2549
2.0000	1.0000	1.0000	0.2500	0.8750	1.0000	0.8250	0.2915
3.0000	0.6204	1.0000	0.9630	0.2778	0.2593	0.6241	0.3191
4.0000	1.0000	0.9375	1.0000	0.6667	0.6528	0.8514	0.1582
5.0000	1.0000	1.0000	1.0000	1.0000	0.3958	0.8792	0.2417
6.0000	1.0000	1.0000	0.8295	0.9612	0.6279	0.8837	0.1424
7.0000	0.5000	0.7292	1.0000	1.0000	0.5139	0.7486	0.2208
8.0000	1.0000	1.0000	1.0000	0.8833	1.0000	0.9767	0.0467
9.0000	0.9861	1.0000	0.8750	1.0000	1.0000	0.9722	0.0489
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.8551	0.1724

Shallow CNN	dropout: 0.5	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3250	0.4000	0.3250	0.3000	0.5000	0.3700	0.0731
2.0000	0.4167	0.2708	0.2500	0.2917	0.3542	0.3167	0.0610
3.0000	0.2500	0.3333	0.2500	0.2500	0.2500	0.2667	0.0333
4.0000	0.4375	0.3542	0.4792	0.2917	0.2917	0.3708	0.0761
5.0000	0.2917	0.2917	0.3750	0.3125	0.3333	0.3208	0.0312
6.0000	0.3256	0.2500	0.3864	0.2955	0.2727	0.3060	0.0473
7.0000	0.3542	0.2708	0.2500	0.3333	0.2917	0.3000	0.0386
8.0000	0.2750	0.3250	0.3500	0.2750	0.2750	0.3000	0.0316
9.0000	0.3958	0.4375	0.3125	0.3750	0.3542	0.3750	0.0417
10.0000	0.3542	0.4167	0.3542	0.4167	0.3542	0.3792	0.0306
					Avg	0.3305	0.0465

Shallow CNN	dropout: 0.5	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2250	0.2750	0.2750	0.2500	0.2250	0.2500	0.0224
2.0000	0.1875	0.2292	0.2500	0.2708	0.4167	0.2708	0.0780
3.0000	0.1111	0.2222	0.1944	0.2500	0.2500	0.2056	0.0515
4.0000	0.2708	0.2500	0.2708	0.2500	0.2292	0.2542	0.0156
5.0000	0.1875	0.2292	0.2500	0.2083	0.2292	0.2208	0.0212
6.0000	0.2273	0.4186	0.2558	0.3023	0.2326	0.2873	0.0708
7.0000	0.2917	0.2708	0.1875	0.2292	0.2708	0.2500	0.0373
8.0000	0.3250	0.2750	0.2500	0.3000	0.2250	0.2750	0.0354
9.0000	0.2708	0.2917	0.2083	0.2083	0.3333	0.2625	0.0486
10.0000	0.3750	0.2500	0.3750	0.3958	0.3333	0.3458	0.0520
					Avg	0.2622	0.0433

Table 8.68: 1024 Hz

Shallow CNN	Interval: full	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
2.0000	1.0000	0.7222	1.0000	0.9306	0.8472	0.9000	0.1052
3.0000	1.0000	1.0000	1.0000	1.0000	0.9907	0.9981	0.0037
4.0000	1.0000	1.0000	0.9514	1.0000	1.0000	0.9903	0.0194
5.0000	1.0000	0.9097	0.9306	1.0000	0.9931	0.9667	0.0386
6.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
7.0000	1.0000	1.0000	0.6597	1.0000	1.0000	0.9319	0.1361
8.0000	1.0000	1.0000	1.0000	0.9083	1.0000	0.9817	0.0367
9.0000	0.9931	0.9931	1.0000	1.0000	1.0000	0.9972	0.0034
10.0000	1.0000	0.9444	1.0000	1.0000	1.0000	0.9889	0.0222
					Avg	0.9755	0.0365

Shallow CNN	Interval: full	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.4250	0.2750	0.3000	0.2750	0.3200	0.0557
2.0000	0.3958	0.2917	0.3333	0.3542	0.3958	0.3542	0.0395
3.0000	0.3611	0.3333	0.2500	0.3056	0.2778	0.3056	0.0393
4.0000	0.4583	0.3125	0.3542	0.4792	0.3333	0.3875	0.0680
5.0000	0.3125	0.3958	0.3542	0.3750	0.4167	0.3708	0.0358
6.0000	0.4186	0.2727	0.4318	0.3409	0.2500	0.3428	0.0738
7.0000	0.4167	0.3542	0.3333	0.3333	0.2917	0.3458	0.0408
8.0000	0.4000	0.4000	0.2500	0.3750	0.3500	0.3550	0.0557
9.0000	0.3750	0.3750	0.3958	0.3542	0.3750	0.3750	0.0132
10.0000	0.3125	0.4167	0.3333	0.3958	0.4167	0.3750	0.0437
					Avg	0.3532	0.0465

Shallow CNN	Interval: full	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4000	0.3000	0.2500	0.3500	0.1750	0.2950	0.0781
2.0000	0.2292	0.3750	0.2917	0.1875	0.2083	0.2583	0.0680
3.0000	0.1389	0.2778	0.2500	0.3611	0.2222	0.2500	0.0724
4.0000	0.2917	0.3125	0.3958	0.1875	0.2292	0.2833	0.0717
5.0000	0.1667	0.2708	0.2083	0.2917	0.1875	0.2250	0.0482
6.0000	0.3182	0.2326	0.1395	0.1860	0.2093	0.2171	0.0592
7.0000	0.3125	0.2708	0.2500	0.2083	0.3542	0.2792	0.0503
8.0000	0.3250	0.2000	0.4500	0.3500	0.3500	0.3350	0.0800
9.0000	0.3542	0.2083	0.2292	0.3125	0.2917	0.2792	0.0537
10.0000	0.2083	0.3958	0.3125	0.3542	0.2917	0.3125	0.0632
					Avg	0.2735	0.0645

Table 8.69: 254 Hz

Shallow CNN	Interval:action	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.9583	1.0000	1.0000	1.0000	0.9917	0.0167
2.0000	1.0000	0.9792	0.9861	1.0000	0.9931	0.9917	0.0081
3.0000	1.0000	0.9815	1.0000	0.9074	1.0000	0.9778	0.0359
4.0000	1.0000	0.9653	0.9722	0.9514	0.9931	0.9764	0.0179
5.0000	0.9931	0.9931	0.9931	1.0000	0.3819	0.8722	0.2452
6.0000	0.9380	0.4264	1.0000	0.2713	0.8062	0.6884	0.2884
7.0000	1.0000	1.0000	1.0000	1.0000	0.8750	0.9750	0.0500
8.0000	0.9833	0.8500	0.9917	1.0000	0.9833	0.9617	0.0562
9.0000	0.9444	1.0000	1.0000	0.9861	0.9514	0.9764	0.0239
10.0000	0.9792	0.9722	0.7569	0.6597	1.0000	0.8736	0.1387
					Avg	0.9285	0.0881

Shallow CNN	Interval:action	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.4000	0.3750	0.2750	0.5000	0.3700	0.0797
2.0000	0.3750	0.3542	0.3125	0.3750	0.3542	0.3542	0.0228
3.0000	0.3056	0.3611	0.3056	0.2500	0.3889	0.3222	0.0484
4.0000	0.3958	0.3542	0.3750	0.3333	0.3125	0.3542	0.0295
5.0000	0.3542	0.3542	0.3958	0.3542	0.3333	0.3583	0.0204
6.0000	0.3256	0.2955	0.2955	0.2500	0.2727	0.2878	0.0253
7.0000	0.3542	0.3750	0.4167	0.4792	0.2708	0.3792	0.0690
8.0000	0.3500	0.4000	0.5250	0.3500	0.4500	0.4150	0.0663
9.0000	0.3542	0.3958	0.4167	0.3542	0.4167	0.3875	0.0283
10.0000	0.3958	0.2708	0.4375	0.4167	0.4583	0.3958	0.0659
					Avg	0.3624	0.0456

Shallow CNN	Interval:action	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.2250	0.1000	0.2250	0.2250	0.2100	0.0583
2.0000	0.3125	0.3333	0.1667	0.2917	0.1875	0.2583	0.0680
3.0000	0.1944	0.1667	0.3611	0.3056	0.1389	0.2333	0.0853
4.0000	0.2500	0.3125	0.2708	0.2292	0.2500	0.2625	0.0283
5.0000	0.3958	0.2500	0.1667	0.3333	0.2083	0.2708	0.0833
6.0000	0.1818	0.1860	0.3023	0.2558	0.3256	0.2503	0.0587
7.0000	0.3125	0.2708	0.2917	0.3333	0.2083	0.2833	0.0429
8.0000	0.3750	0.2500	0.2500	0.2750	0.1500	0.2600	0.0718
9.0000	0.2708	0.3125	0.2292	0.2917	0.3125	0.2833	0.0312
10.0000	0.1875	0.2292	0.2708	0.3125	0.3125	0.2625	0.0486
					Avg	0.2574	0.0576

Table 8.70: 254 Hz

Shallow CNN	Interval: full	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	0.4083	1.0000	0.6667	1.0000	0.8150	0.2409
2.0000	1.0000	0.7778	1.0000	1.0000	1.0000	0.9556	0.0889
3.0000	0.5278	1.0000	1.0000	1.0000	1.0000	0.9056	0.1889
4.0000	1.0000	1.0000	1.0000	0.7917	1.0000	0.9583	0.0833
5.0000	0.2708	1.0000	0.9306	1.0000	1.0000	0.8403	0.2860
6.0000	0.9922	1.0000	0.2558	1.0000	1.0000	0.8496	0.2969
7.0000	0.2500	0.7153	0.3125	1.0000	1.0000	0.6556	0.3234
8.0000	1.0000	0.4667	0.6750	1.0000	1.0000	0.8283	0.2203
9.0000	1.0000	1.0000	1.0000	0.5486	1.0000	0.9097	0.1806
10.0000	1.0000	0.7500	1.0000	0.9931	1.0000	0.9486	0.0993
					Avg	0.8667	0.2009

Shallow CNN	Interval: full	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3000	0.3250	0.3500	0.2750	0.3000	0.3100	0.0255
2.0000	0.4375	0.2500	0.2708	0.4167	0.3125	0.3375	0.0761
3.0000	0.2778	0.2500	0.3056	0.3056	0.3056	0.2889	0.0222
4.0000	0.2708	0.3333	0.3125	0.2500	0.4375	0.3208	0.0654
5.0000	0.2708	0.3125	0.3125	0.2917	0.3333	0.3042	0.0212
6.0000	0.2791	0.2500	0.2500	0.2500	0.3182	0.2695	0.0268
7.0000	0.2500	0.3333	0.2500	0.3542	0.3333	0.3042	0.0449
8.0000	0.4000	0.4250	0.3000	0.5000	0.4500	0.4150	0.0663
9.0000	0.3958	0.3542	0.3333	0.2708	0.2500	0.3208	0.0537
10.0000	0.3125	0.3333	0.3542	0.4583	0.2708	0.3458	0.0626
					Avg	0.3217	0.0465

Shallow CNN	Interval: full	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.3000	0.3000	0.2250	0.2000	0.2550	0.0400
2.0000	0.2708	0.2917	0.2292	0.2292	0.2500	0.2542	0.0243
3.0000	0.2222	0.1667	0.1111	0.3333	0.2778	0.2222	0.0786
4.0000	0.3125	0.1875	0.3542	0.2500	0.2292	0.2667	0.0595
5.0000	0.2500	0.2917	0.1875	0.3542	0.2917	0.2750	0.0550
6.0000	0.3182	0.2558	0.2326	0.2326	0.3488	0.2776	0.0474
7.0000	0.2500	0.1875	0.2292	0.2083	0.2708	0.2292	0.0295
8.0000	0.3000	0.3000	0.3000	0.2500	0.2250	0.2750	0.0316
9.0000	0.2917	0.2917	0.1875	0.2917	0.3333	0.2792	0.0486
10.0000	0.2917	0.3958	0.2917	0.3333	0.3333	0.3292	0.0382
					Avg	0.2663	0.0453

Table 8.71: 1024 Hz

Shallow CNN	Interval:action	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.4833	1.0000	0.8750	1.0000	1.0000	0.8717	0.2001
2.0000	0.3194	1.0000	1.0000	1.0000	1.0000	0.8639	0.2722
3.0000	0.5556	1.0000	1.0000	1.0000	1.0000	0.9111	0.1778
4.0000	0.3125	1.0000	1.0000	1.0000	0.7153	0.8056	0.2701
5.0000	0.7431	0.9583	0.7500	1.0000	1.0000	0.8903	0.1184
6.0000	0.3023	0.2868	1.0000	0.9302	0.9302	0.6899	0.3238
7.0000	0.9167	1.0000	1.0000	1.0000	1.0000	0.9833	0.0333
8.0000	0.9917	1.0000	1.0000	1.0000	1.0000	0.9983	0.0033
9.0000	1.0000	0.7708	0.9931	1.0000	1.0000	0.9528	0.0910
10.0000	1.0000	1.0000	0.4583	1.0000	0.8819	0.8681	0.2099
					Avg	0.8835	0.1700

Shallow CNN	Interval:action	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.2750	0.3500	0.3250	0.3500	0.3150	0.0339
2.0000	0.2708	0.3958	0.3333	0.3542	0.2708	0.3250	0.0486
3.0000	0.2778	0.2500	0.3333	0.3611	0.3056	0.3056	0.0393
4.0000	0.2708	0.3542	0.2500	0.3125	0.3125	0.3000	0.0363
5.0000	0.3125	0.3125	0.3333	0.2708	0.3333	0.3125	0.0228
6.0000	0.2558	0.2500	0.2727	0.2727	0.3182	0.2739	0.0239
7.0000	0.3333	0.3125	0.3750	0.2500	0.3958	0.3333	0.0510
8.0000	0.4250	0.4250	0.2750	0.3500	0.3750	0.3700	0.0557
9.0000	0.3958	0.3125	0.3958	0.2917	0.2917	0.3375	0.0482
10.0000	0.3542	0.3333	0.2917	0.3125	0.3750	0.3333	0.0295
					Avg	0.3206	0.0389

Shallow CNN	Interval:action	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.2750	0.1750	0.2000	0.2250	0.2300	0.0400
2.0000	0.2500	0.2917	0.3333	0.2708	0.2917	0.2875	0.0276
3.0000	0.1944	0.1667	0.2778	0.1667	0.2500	0.2111	0.0451
4.0000	0.2500	0.2500	0.2292	0.1875	0.2083	0.2250	0.0243
5.0000	0.3542	0.3125	0.2708	0.3125	0.2708	0.3042	0.0312
6.0000	0.2273	0.2558	0.2093	0.2558	0.1628	0.2222	0.0346
7.0000	0.2500	0.2292	0.2917	0.2083	0.2292	0.2417	0.0283
8.0000	0.3000	0.2250	0.2000	0.2000	0.2750	0.2400	0.0406
9.0000	0.2083	0.2917	0.3750	0.3542	0.3750	0.3208	0.0640
10.0000	0.2500	0.3333	0.3125	0.2917	0.3750	0.3125	0.0417
					Avg	0.2595	0.0377

Table 8.72: 1024 Hz

Shallow CNN	LR: 0.1	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.8750	1.0000	1.0000	0.8667	0.6833	0.8850	0.1162
2.0000	0.9792	0.9097	0.4931	0.9444	0.7639	0.8181	0.1783
3.0000	1.0000	0.9630	0.2500	0.9352	1.0000	0.8296	0.2908
4.0000	0.4722	0.7361	0.9653	0.7917	0.7986	0.7528	0.1598
5.0000	1.0000	0.3403	0.3889	0.9931	0.9931	0.7431	0.3094
6.0000	0.9302	0.9922	0.9612	0.9922	0.9147	0.9581	0.0316
7.0000	1.0000	0.8681	0.9375	0.9653	0.9861	0.9514	0.0467
8.0000	0.9667	0.9250	0.7250	0.9333	0.9750	0.9050	0.0920
9.0000	0.8403	1.0000	0.9375	0.9236	0.9931	0.9389	0.0577
10.0000	0.4653	0.9931	0.7153	0.9167	0.5764	0.7333	0.1989
					Avg	0.8515	0.1482

Shallow CNN	LR: 0.1	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3500	0.3000	0.3250	0.3500	0.3000	0.3250	0.0224
2.0000	0.3333	0.4167	0.3333	0.3958	0.3750	0.3708	0.0333
3.0000	0.3611	0.3333	0.2500	0.3333	0.3611	0.3278	0.0408
4.0000	0.3958	0.3750	0.4583	0.3958	0.3750	0.4000	0.0306
5.0000	0.3958	0.2917	0.2917	0.3125	0.3750	0.3333	0.0437
6.0000	0.3256	0.3636	0.3409	0.3864	0.2500	0.3333	0.0465
7.0000	0.3958	0.3958	0.3542	0.3750	0.4375	0.3917	0.0276
8.0000	0.3750	0.3750	0.4250	0.4500	0.4250	0.4100	0.0300
9.0000	0.4375	0.3542	0.3750	0.3333	0.3333	0.3667	0.0386
10.0000	0.3958	0.3958	0.3958	0.3958	0.3958	0.3958	0.0000
					Avg	0.3654	0.0314

Shallow CNN	LR: 0.1	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4250	0.2000	0.3250	0.3000	0.1500	0.2800	0.0967
2.0000	0.2708	0.2083	0.3542	0.2083	0.2708	0.2625	0.0537
3.0000	0.1667	0.1944	0.2500	0.1667	0.2222	0.2000	0.0324
4.0000	0.1875	0.2500	0.2917	0.1875	0.3333	0.2500	0.0574
5.0000	0.1875	0.2708	0.1875	0.2292	0.1875	0.2125	0.0333
6.0000	0.2045	0.1628	0.2093	0.1860	0.3256	0.2177	0.0564
7.0000	0.1875	0.1250	0.2292	0.2708	0.2917	0.2208	0.0598
8.0000	0.3750	0.3250	0.2250	0.3250	0.3250	0.3150	0.0490
9.0000	0.3125	0.3125	0.2083	0.2500	0.3125	0.2792	0.0429
10.0000	0.2083	0.2500	0.2917	0.3333	0.3333	0.2833	0.0486
					Avg	0.2521	0.0530

Table 8.73: 254 Hz

Shallow CNN	LR: 0.01	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	0.3333	0.8333	1.0000	0.2833	0.6900	0.3179
2.0000	1.0000	1.0000	0.9861	1.0000	0.6597	0.9292	0.1348
3.0000	0.2500	0.2500	1.0000	0.2685	1.0000	0.5537	0.3645
4.0000	0.5000	1.0000	0.6736	1.0000	1.0000	0.8347	0.2097
5.0000	0.2778	1.0000	0.2778	0.7361	0.2500	0.5083	0.3055
6.0000	1.0000	0.4496	1.0000	0.6357	0.3876	0.6946	0.2624
7.0000	1.0000	1.0000	0.2639	1.0000	0.4514	0.7431	0.3202
8.0000	1.0000	1.0000	1.0000	0.5333	1.0000	0.9067	0.1867
9.0000	1.0000	0.3750	0.9583	0.8403	1.0000	0.8347	0.2372
10.0000	1.0000	0.7500	1.0000	1.0000	1.0000	0.9500	0.1000
					Avg	0.7645	0.2439

Shallow CNN	LR: 0.01	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.2500	0.3500	0.2750	0.2500	0.2800	0.0367
2.0000	0.2917	0.3125	0.2708	0.3333	0.2917	0.3000	0.0212
3.0000	0.2500	0.2500	0.3056	0.2500	0.3889	0.2889	0.0544
4.0000	0.2917	0.2708	0.3333	0.3750	0.3333	0.3208	0.0363
5.0000	0.2500	0.2917	0.2500	0.2500	0.2500	0.2583	0.0167
6.0000	0.3023	0.2955	0.3409	0.2727	0.2955	0.3014	0.0222
7.0000	0.2500	0.4167	0.2500	0.2708	0.3542	0.3083	0.0664
8.0000	0.3750	0.2750	0.5000	0.4000	0.3250	0.3750	0.0758
9.0000	0.3125	0.2708	0.2917	0.3542	0.3333	0.3125	0.0295
10.0000	0.2917	0.3125	0.2500	0.2917	0.4583	0.3208	0.0717
					Avg	0.3066	0.0431

Shallow CNN	LR: 0.01	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.1750	0.2250	0.2750	0.2250	0.2000	0.2200	0.0332
2.0000	0.3333	0.2083	0.2708	0.2708	0.2917	0.2750	0.0404
3.0000	0.2500	0.2500	0.1667	0.2500	0.1667	0.2167	0.0408
4.0000	0.2708	0.2083	0.2500	0.1458	0.3125	0.2375	0.0568
5.0000	0.2292	0.3125	0.2500	0.2917	0.2500	0.2667	0.0306
6.0000	0.1818	0.2326	0.1628	0.3721	0.2093	0.2317	0.0741
7.0000	0.2708	0.1875	0.2708	0.2083	0.3542	0.2583	0.0583
8.0000	0.2250	0.2250	0.3250	0.2750	0.2750	0.2650	0.0374
9.0000	0.2708	0.2292	0.4167	0.3125	0.2917	0.3042	0.0626
10.0000	0.3542	0.3750	0.2083	0.4167	0.3333	0.3375	0.0702
					Avg	0.2613	0.0505

Table 8.74: 254 Hz

Shallow CNN	LR: 0.001	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.7083	0.9000	1.0000	1.0000	0.5833	0.8383	0.1661
2.0000	1.0000	1.0000	0.5417	1.0000	1.0000	0.9083	0.1833
3.0000	0.8333	1.0000	0.8796	1.0000	0.9815	0.9389	0.0692
4.0000	0.7708	1.0000	1.0000	0.9444	1.0000	0.9431	0.0888
5.0000	0.6458	1.0000	1.0000	0.5833	1.0000	0.8458	0.1898
6.0000	1.0000	1.0000	0.2636	0.9922	0.8992	0.8310	0.2863
7.0000	0.2708	1.0000	1.0000	0.9028	1.0000	0.8347	0.2844
8.0000	1.0000	0.9667	1.0000	1.0000	1.0000	0.9933	0.0133
9.0000	1.0000	0.9722	1.0000	1.0000	0.9792	0.9903	0.0121
10.0000	0.9931	1.0000	0.9236	0.3542	0.8542	0.8250	0.2413
					Avg	0.8949	0.1535

Shallow CNN	LR: 0.001	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3500	0.3500	0.3500	0.3750	0.2500	0.3350	0.0436
2.0000	0.3125	0.3333	0.2500	0.3333	0.2708	0.3000	0.0339
3.0000	0.3056	0.3056	0.3333	0.2778	0.2778	0.3000	0.0208
4.0000	0.3125	0.4792	0.3125	0.4583	0.3333	0.3792	0.0738
5.0000	0.3125	0.4167	0.3333	0.2917	0.2708	0.3250	0.0503
6.0000	0.2558	0.2955	0.2500	0.2955	0.3409	0.2875	0.0328
7.0000	0.2708	0.3125	0.4375	0.3750	0.4167	0.3625	0.0626
8.0000	0.5250	0.3500	0.2750	0.3000	0.3250	0.3550	0.0886
9.0000	0.3125	0.3333	0.3750	0.3333	0.3333	0.3375	0.0204
10.0000	0.2917	0.3333	0.3750	0.2500	0.3750	0.3250	0.0486
					Avg	0.3307	0.0475

Shallow CNN	LR: 0.001	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2000	0.2500	0.2750	0.2750	0.2750	0.2550	0.0292
2.0000	0.2708	0.3333	0.2292	0.2292	0.1875	0.2500	0.0493
3.0000	0.3056	0.1944	0.2778	0.3333	0.3056	0.2833	0.0478
4.0000	0.2708	0.1875	0.2292	0.3125	0.1875	0.2375	0.0486
5.0000	0.2500	0.2708	0.2083	0.3333	0.2292	0.2583	0.0429
6.0000	0.2955	0.3256	0.2558	0.1860	0.2558	0.2637	0.0469
7.0000	0.2500	0.2500	0.3125	0.3333	0.2500	0.2792	0.0363
8.0000	0.3000	0.3000	0.2750	0.3250	0.3750	0.3150	0.0339
9.0000	0.2500	0.3333	0.3750	0.1042	0.2292	0.2583	0.0937
10.0000	0.2708	0.4375	0.3125	0.2500	0.3125	0.3167	0.0651
					Avg	0.2717	0.0494

Table 8.75: 254 Hz

Shallow CNN	LR: 0.0001	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	0.5417	1.0000	1.0000	0.9833	0.9050	0.1818
2.0000	1.0000	0.2917	1.0000	0.9931	0.8681	0.8306	0.2741
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	1.0000	0.9583	1.0000	1.0000	0.9444	0.9806	0.0242
5.0000	1.0000	0.7917	1.0000	1.0000	0.9236	0.9431	0.0813
6.0000	0.4806	1.0000	0.7519	1.0000	1.0000	0.8465	0.2066
7.0000	1.0000	1.0000	0.7500	1.0000	1.0000	0.9500	0.1000
8.0000	0.9833	1.0000	1.0000	1.0000	1.0000	0.9967	0.0067
9.0000	0.9931	1.0000	0.3889	0.9444	1.0000	0.8653	0.2391
10.0000	0.7708	0.5069	1.0000	1.0000	0.6944	0.7944	0.1885
					Avg	0.9112	0.1302

Shallow CNN	LR: 0.0001	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3000	0.2750	0.2500	0.3250	0.3250	0.2950	0.0292
2.0000	0.2917	0.2708	0.3750	0.2708	0.2500	0.2917	0.0437
3.0000	0.3611	0.2500	0.3333	0.3611	0.4167	0.3444	0.0544
4.0000	0.3750	0.2708	0.2500	0.2500	0.2917	0.2875	0.0464
5.0000	0.2708	0.3542	0.3333	0.3750	0.3542	0.3375	0.0358
6.0000	0.2326	0.3636	0.3182	0.3182	0.4091	0.3283	0.0586
7.0000	0.3333	0.3333	0.3125	0.2708	0.3750	0.3250	0.0339
8.0000	0.3250	0.4000	0.5000	0.3250	0.3750	0.3850	0.0644
9.0000	0.3125	0.3958	0.2917	0.3125	0.3333	0.3292	0.0358
10.0000	0.2708	0.3958	0.3750	0.3125	0.3125	0.3333	0.0456
					Avg	0.3257	0.0448

Shallow CNN	LR: 0.0001	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.3250	0.3500	0.2500	0.2000	0.2800	0.0534
2.0000	0.2083	0.2500	0.2917	0.3125	0.2708	0.2667	0.0358
3.0000	0.1667	0.2222	0.3056	0.3333	0.2222	0.2500	0.0609
4.0000	0.2292	0.2500	0.2708	0.2708	0.2292	0.2500	0.0186
5.0000	0.2917	0.3333	0.3125	0.3125	0.2708	0.3042	0.0212
6.0000	0.2500	0.3721	0.1628	0.2093	0.1628	0.2314	0.0775
7.0000	0.2917	0.2708	0.2500	0.3333	0.3125	0.2917	0.0295
8.0000	0.3000	0.3750	0.2250	0.3750	0.3250	0.3200	0.0557
9.0000	0.2708	0.2708	0.2708	0.2917	0.3542	0.2917	0.0323
10.0000	0.2292	0.2500	0.2917	0.2500	0.2500	0.2542	0.0204
					Avg	0.2740	0.0405

Table 8.76: 254 Hz

Shallow CNN	LR: 0.1	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	0.9833	0.5417	0.9667	0.9667	0.8917	0.1754
2.0000	0.9306	1.0000	0.9514	0.9931	0.9931	0.9736	0.0276
3.0000	0.5463	0.9630	0.9907	0.9630	0.9722	0.8870	0.1707
4.0000	0.9653	0.9653	0.9861	0.9653	0.9931	0.9750	0.0121
5.0000	0.9861	0.9514	0.9931	0.9583	1.0000	0.9778	0.0193
6.0000	0.9922	0.9612	1.0000	0.8837	0.9457	0.9566	0.0415
7.0000	0.3403	1.0000	0.9514	0.9722	0.9861	0.8500	0.2554
8.0000	0.9750	0.8500	0.9750	0.9250	0.9417	0.9333	0.0459
9.0000	0.8472	0.9792	0.8681	0.9097	1.0000	0.9208	0.0600
10.0000	0.9792	0.9583	0.9861	0.9514	0.9583	0.9667	0.0135
					Avg	0.9333	0.0821

Shallow CNN	LR: 0.1	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3250	0.3250	0.3250	0.3500	0.2750	0.3200	0.0245
2.0000	0.3750	0.3125	0.3542	0.3750	0.3333	0.3500	0.0243
3.0000	0.2778	0.2778	0.4167	0.3611	0.4444	0.3556	0.0689
4.0000	0.3750	0.3750	0.4167	0.3333	0.3125	0.3625	0.0363
5.0000	0.2708	0.4167	0.3333	0.2917	0.3750	0.3375	0.0534
6.0000	0.3488	0.3182	0.3409	0.2955	0.4091	0.3425	0.0382
7.0000	0.2917	0.2917	0.2708	0.3125	0.3958	0.3125	0.0437
8.0000	0.4500	0.4000	0.4250	0.4250	0.4250	0.4250	0.0158
9.0000	0.3333	0.3750	0.4167	0.3333	0.3958	0.3708	0.0333
10.0000	0.3542	0.3333	0.4792	0.3958	0.4167	0.3958	0.0510
					Avg	0.3572	0.0389

Shallow CNN	LR: 0.1	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.3250	0.2250	0.2500	0.2750	0.2700	0.0332
2.0000	0.3958	0.2500	0.2917	0.2292	0.3958	0.3125	0.0710
3.0000	0.1667	0.2222	0.1667	0.3056	0.2222	0.2167	0.0509
4.0000	0.3125	0.2917	0.2083	0.2917	0.2708	0.2750	0.0358
5.0000	0.2708	0.2708	0.2500	0.2917	0.3125	0.2792	0.0212
6.0000	0.2273	0.2558	0.3488	0.2326	0.2093	0.2548	0.0493
7.0000	0.3333	0.1667	0.2708	0.2292	0.3542	0.2708	0.0685
8.0000	0.2250	0.3750	0.3000	0.3500	0.3000	0.3100	0.0515
9.0000	0.2708	0.2083	0.2917	0.3125	0.3333	0.2833	0.0429
10.0000	0.3542	0.3542	0.3750	0.2500	0.2708	0.3208	0.0503
					Avg	0.2793	0.0475

Table 8.77: 1024 Hz

Shallow CNN	LR: 0.01	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.8500	0.3083	0.5000	0.5750	0.2500	0.4967	0.2132
2.0000	1.0000	1.0000	0.2500	1.0000	0.9653	0.8431	0.2968
3.0000	1.0000	0.2963	0.7963	0.2593	0.3889	0.5481	0.2960
4.0000	0.5764	0.9722	1.0000	1.0000	0.9931	0.9083	0.1663
5.0000	1.0000	0.3472	0.9722	1.0000	1.0000	0.8639	0.2586
6.0000	0.8450	1.0000	0.7287	0.5194	1.0000	0.8186	0.1812
7.0000	0.5000	1.0000	0.2500	1.0000	0.2500	0.6000	0.3391
8.0000	0.8750	1.0000	0.9917	0.9583	0.9667	0.9583	0.0444
9.0000	0.4861	1.0000	0.2639	1.0000	1.0000	0.7500	0.3141
10.0000	1.0000	1.0000	0.7014	1.0000	1.0000	0.9403	0.1194
					Avg	0.7727	0.2229

Shallow CNN	LR: 0.01	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3250	0.2500	0.2500	0.2500	0.2500	0.2650	0.0300
2.0000	0.2917	0.3542	0.2500	0.2917	0.3333	0.3042	0.0363
3.0000	0.2500	0.2500	0.3333	0.2500	0.2500	0.2667	0.0333
4.0000	0.2708	0.3958	0.3125	0.3958	0.3125	0.3375	0.0500
5.0000	0.3333	0.2500	0.3125	0.2708	0.2708	0.2875	0.0306
6.0000	0.3721	0.3864	0.3182	0.3182	0.3864	0.3562	0.0315
7.0000	0.3958	0.3333	0.2500	0.3333	0.2500	0.3125	0.0559
8.0000	0.3000	0.5000	0.4250	0.3000	0.3250	0.3700	0.0797
9.0000	0.3542	0.3542	0.2500	0.2917	0.3958	0.3292	0.0517
10.0000	0.3333	0.3750	0.2708	0.3542	0.3333	0.3333	0.0349
					Avg	0.3162	0.0434

Shallow CNN	LR: 0.01	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.1500	0.2500	0.1750	0.2750	0.2500	0.2200	0.0485
2.0000	0.3125	0.2708	0.2500	0.3958	0.2917	0.3042	0.0503
3.0000	0.2500	0.2500	0.1111	0.2500	0.2222	0.2167	0.0539
4.0000	0.3125	0.2708	0.2917	0.3125	0.2917	0.2958	0.0156
5.0000	0.2083	0.2500	0.2292	0.2917	0.1875	0.2333	0.0358
6.0000	0.3182	0.1860	0.2326	0.2558	0.1860	0.2357	0.0493
7.0000	0.2500	0.2292	0.2500	0.2500	0.2500	0.2458	0.0083
8.0000	0.2500	0.2750	0.3250	0.3750	0.3000	0.3050	0.0430
9.0000	0.2708	0.4792	0.2500	0.3125	0.1667	0.2958	0.1032
10.0000	0.3333	0.2917	0.2083	0.2917	0.3750	0.3000	0.0553
					Avg	0.2652	0.0463

Table 8.78: 1024 Hz

Shallow CNN	LR: 0.001	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9917	1.0000	1.0000	0.4583	1.0000	0.8900	0.2159
2.0000	1.0000	1.0000	1.0000	0.6042	1.0000	0.9208	0.1583
3.0000	0.4722	1.0000	1.0000	0.3056	1.0000	0.7556	0.3040
4.0000	1.0000	1.0000	0.8750	1.0000	1.0000	0.9750	0.0500
5.0000	0.2500	0.6319	1.0000	0.9306	0.2569	0.6139	0.3192
6.0000	0.3721	1.0000	0.8062	1.0000	0.5194	0.7395	0.2544
7.0000	1.0000	0.9444	1.0000	0.4583	1.0000	0.8806	0.2122
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	0.5556	0.9375	1.0000	1.0000	1.0000	0.8986	0.1732
10.0000	1.0000	1.0000	0.8889	1.0000	1.0000	0.9778	0.0444
					Avg	0.8652	0.1732

Shallow CNN	LR: 0.001	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.2750	0.3500	0.2750	0.3500	0.3000	0.0418
2.0000	0.3125	0.3750	0.3333	0.3542	0.3542	0.3458	0.0212
3.0000	0.2778	0.3611	0.2500	0.2500	0.3056	0.2889	0.0416
4.0000	0.3125	0.2708	0.3125	0.3958	0.2917	0.3167	0.0425
5.0000	0.2500	0.2500	0.2708	0.2917	0.2500	0.2625	0.0167
6.0000	0.2791	0.2955	0.3182	0.2955	0.3182	0.3013	0.0150
7.0000	0.2917	0.3333	0.2708	0.2708	0.2500	0.2833	0.0283
8.0000	0.3000	0.4000	0.3000	0.4750	0.2750	0.3500	0.0758
9.0000	0.3125	0.2708	0.4375	0.3125	0.3750	0.3417	0.0583
10.0000	0.4375	0.3333	0.4167	0.3542	0.4375	0.3958	0.0437
					Avg	0.3186	0.0385

Shallow CNN	LR: 0.001	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3500	0.3000	0.3000	0.2250	0.1250	0.2600	0.0784
2.0000	0.1667	0.3542	0.3542	0.2500	0.2917	0.2833	0.0705
3.0000	0.1944	0.1944	0.1944	0.2222	0.3056	0.2222	0.0430
4.0000	0.3125	0.2292	0.3333	0.2708	0.2708	0.2833	0.0363
5.0000	0.2292	0.2708	0.2708	0.2083	0.2500	0.2458	0.0243
6.0000	0.2727	0.2093	0.2558	0.2093	0.2326	0.2359	0.0252
7.0000	0.2500	0.1042	0.2083	0.2500	0.3542	0.2333	0.0806
8.0000	0.3000	0.3000	0.4250	0.3000	0.3250	0.3300	0.0485
9.0000	0.2500	0.3542	0.2083	0.3333	0.2917	0.2875	0.0534
10.0000	0.2917	0.4375	0.3333	0.3750	0.3125	0.3500	0.0517
					Avg	0.2731	0.0512

Table 8.79: 1024 Hz

Shallow CNN	LR: 0.0001	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.7500	1.0000	1.0000	0.5333	0.8567	0.1884
2.0000	1.0000	0.6319	1.0000	0.8264	1.0000	0.8917	0.1462
3.0000	0.7870	1.0000	1.0000	1.0000	0.2778	0.8130	0.2800
4.0000	1.0000	1.0000	1.0000	0.5069	1.0000	0.9014	0.1972
5.0000	0.7569	1.0000	0.9722	0.2708	0.4583	0.6917	0.2862
6.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
7.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
8.0000	0.9250	1.0000	1.0000	0.9667	1.0000	0.9783	0.0296
9.0000	0.7083	0.9306	1.0000	1.0000	1.0000	0.9278	0.1130
10.0000	0.9931	1.0000	1.0000	1.0000	1.0000	0.9986	0.0028
					Avg	0.9059	0.1244

Shallow CNN	LR: 0.0001	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.3250	0.3750	0.3250	0.2750	0.3150	0.0374
2.0000	0.3750	0.4167	0.3750	0.3958	0.3125	0.3750	0.0349
3.0000	0.3056	0.2778	0.3333	0.4444	0.2500	0.3222	0.0671
4.0000	0.3333	0.3333	0.3750	0.2917	0.3542	0.3375	0.0276
5.0000	0.2708	0.4167	0.2708	0.2500	0.2500	0.2917	0.0632
6.0000	0.2791	0.3409	0.4318	0.2727	0.2500	0.3149	0.0658
7.0000	0.3333	0.3333	0.3750	0.4583	0.2708	0.3542	0.0618
8.0000	0.3000	0.4250	0.4000	0.3750	0.4750	0.3950	0.0579
9.0000	0.3333	0.3125	0.3125	0.3125	0.3125	0.3167	0.0083
10.0000	0.3333	0.3542	0.3125	0.3750	0.2708	0.3292	0.0358
					Avg	0.3351	0.0460

Shallow CNN	LR: 0.0001	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.2750	0.1750	0.2750	0.2250	0.2450	0.0400
2.0000	0.2708	0.3333	0.3125	0.3542	0.3750	0.3292	0.0358
3.0000	0.1944	0.2500	0.2222	0.3333	0.2500	0.2500	0.0465
4.0000	0.1667	0.2292	0.2292	0.2708	0.1458	0.2083	0.0456
5.0000	0.2500	0.2500	0.2917	0.2500	0.2500	0.2583	0.0167
6.0000	0.1364	0.3023	0.2791	0.2791	0.2326	0.2459	0.0593
7.0000	0.2500	0.1250	0.2500	0.2292	0.2292	0.2167	0.0468
8.0000	0.2250	0.2750	0.2500	0.3000	0.2250	0.2550	0.0292
9.0000	0.2708	0.2292	0.1875	0.2292	0.3125	0.2458	0.0425
10.0000	0.2500	0.1875	0.3750	0.4792	0.3958	0.3375	0.1049
					Avg	0.2592	0.0467

Table 8.80: 1024 Hz

Shallow CNN	LeakyRelu	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	1.0000	0.9917	0.5500	1.0000	0.9083	0.1792
2.0000	0.2500	1.0000	1.0000	1.0000	1.0000	0.8500	0.3000
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	0.5278	1.0000	1.0000	0.9861	1.0000	0.9028	0.1876
5.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
6.0000	0.2558	0.2481	1.0000	1.0000	1.0000	0.7008	0.3665
7.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
8.0000	0.9167	1.0000	1.0000	0.9333	1.0000	0.9700	0.0371
9.0000	1.0000	1.0000	0.9931	1.0000	1.0000	0.9986	0.0028
10.0000	1.0000	1.0000	1.0000	1.0000	0.9722	0.9944	0.0111
					Avg	0.9325	0.1084

Shallow CNN	LeakyRelu	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3250	0.4250	0.3500	0.3250	0.2750	0.3400	0.0490
2.0000	0.2500	0.3333	0.3125	0.2917	0.2917	0.2958	0.0276
3.0000	0.3056	0.2500	0.3889	0.3056	0.2778	0.3056	0.0465
4.0000	0.3125	0.3542	0.3125	0.2500	0.2708	0.3000	0.0363
5.0000	0.3333	0.2917	0.3542	0.3542	0.2708	0.3208	0.0339
6.0000	0.2558	0.2500	0.3182	0.2955	0.2955	0.2830	0.0260
7.0000	0.3333	0.3542	0.3750	0.3958	0.3542	0.3625	0.0212
8.0000	0.3750	0.3500	0.3000	0.4000	0.3000	0.3450	0.0400
9.0000	0.3125	0.3750	0.3333	0.3125	0.3333	0.3333	0.0228
10.0000	0.3333	0.3333	0.3333	0.3542	0.3542	0.3417	0.0102
					Avg	0.3228	0.0314

Shallow CNN	LeakyRelu	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3000	0.2500	0.2750	0.2000	0.2500	0.2550	0.0332
2.0000	0.2500	0.2708	0.1875	0.2500	0.1875	0.2292	0.0349
3.0000	0.2500	0.2778	0.2222	0.2778	0.1944	0.2444	0.0324
4.0000	0.2917	0.1250	0.3333	0.3125	0.3542	0.2833	0.0819
5.0000	0.3125	0.2083	0.3542	0.2292	0.2917	0.2792	0.0537
6.0000	0.2500	0.2558	0.2791	0.2791	0.2791	0.2686	0.0129
7.0000	0.2708	0.4167	0.2500	0.2708	0.1875	0.2792	0.0752
8.0000	0.2000	0.2250	0.3500	0.2000	0.2750	0.2500	0.0570
9.0000	0.3958	0.2500	0.2708	0.2500	0.3125	0.2958	0.0550
10.0000	0.2292	0.3125	0.2083	0.2917	0.3542	0.2792	0.0537
					Avg	0.2664	0.0490

Table 8.81: 254 Hz

Shallow CNN	#filters: 80	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9000	0.9667	1.0000	0.9833	0.5167	0.8733	0.1815
2.0000	1.0000	1.0000	1.0000	0.7708	1.0000	0.9542	0.0917
3.0000	1.0000	0.9722	1.0000	0.9167	1.0000	0.9778	0.0324
4.0000	1.0000	1.0000	0.9236	1.0000	0.6458	0.9139	0.1373
5.0000	0.2569	0.9167	1.0000	0.3125	1.0000	0.6972	0.3386
6.0000	0.4884	1.0000	0.7829	0.2481	1.0000	0.7039	0.2952
7.0000	1.0000	1.0000	0.2500	1.0000	1.0000	0.8500	0.3000
8.0000	1.0000	1.0000	0.5917	1.0000	1.0000	0.9183	0.1633
9.0000	0.7708	0.3056	1.0000	1.0000	1.0000	0.8153	0.2699
10.0000	1.0000	1.0000	0.9931	1.0000	1.0000	0.9986	0.0028
					Avg	0.8702	0.1813

Shallow CNN	#filters: 80	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3000	0.3250	0.3000	0.4250	0.3000	0.3300	0.0485
2.0000	0.4583	0.3542	0.2708	0.2708	0.3125	0.3333	0.0697
3.0000	0.4167	0.2500	0.3056	0.3611	0.3056	0.3278	0.0567
4.0000	0.3542	0.3542	0.3958	0.3333	0.3125	0.3500	0.0276
5.0000	0.2500	0.3333	0.3333	0.3125	0.3125	0.3083	0.0306
6.0000	0.2558	0.3182	0.3182	0.2500	0.3182	0.2921	0.0320
7.0000	0.2500	0.3958	0.2500	0.3542	0.2500	0.3000	0.0626
8.0000	0.4000	0.3750	0.3500	0.4000	0.4000	0.3850	0.0200
9.0000	0.2917	0.2708	0.3125	0.2917	0.3750	0.3083	0.0358
10.0000	0.3958	0.3542	0.3333	0.2917	0.4167	0.3583	0.0445
					Avg	0.3293	0.0428

Shallow CNN	#filters: 80	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3250	0.2500	0.1500	0.2750	0.3000	0.2600	0.0604
2.0000	0.3333	0.2292	0.3958	0.3333	0.2083	0.3000	0.0705
3.0000	0.1667	0.2500	0.2222	0.1389	0.3889	0.2333	0.0871
4.0000	0.3542	0.3333	0.2083	0.3125	0.2083	0.2833	0.0626
5.0000	0.2500	0.2708	0.3542	0.1250	0.2083	0.2417	0.0752
6.0000	0.2500	0.2558	0.2326	0.2558	0.2093	0.2407	0.0179
7.0000	0.3125	0.2500	0.2500	0.2708	0.2292	0.2625	0.0283
8.0000	0.3250	0.3250	0.3250	0.1250	0.3000	0.2800	0.0781
9.0000	0.2917	0.2500	0.3125	0.2292	0.3125	0.2792	0.0339
10.0000	0.3125	0.2917	0.3750	0.3542	0.1875	0.3042	0.0654
					Avg	0.2685	0.0579

Table 8.82: 254 Hz

Shallow CNN	LeakyRelu	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9917	1.0000	0.9500	0.9333	0.7083	0.9167	0.1071
2.0000	0.6389	0.8889	0.6944	0.2986	1.0000	0.7042	0.2410
3.0000	1.0000	0.2222	0.4259	0.9537	1.0000	0.7204	0.3304
4.0000	1.0000	0.6250	0.5486	0.4028	0.9236	0.7000	0.2267
5.0000	0.7500	0.8889	0.6597	0.8819	0.3542	0.7069	0.1961
6.0000	0.6357	0.5504	0.6279	0.4806	0.5736	0.5736	0.0565
7.0000	1.0000	0.8125	0.7917	1.0000	0.3819	0.7972	0.2258
8.0000	0.6250	0.9667	0.8667	0.8917	0.7083	0.8117	0.1257
9.0000	0.7361	0.9931	0.2986	0.8958	0.7153	0.7278	0.2379
10.0000	0.6389	1.0000	0.9653	0.9514	0.7986	0.8708	0.1350
					Avg	0.7529	0.1882

Shallow CNN	LeakyRelu	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.3500	0.3250	0.4500	0.3750	0.3550	0.0579
2.0000	0.3542	0.3542	0.3542	0.3750	0.3542	0.3583	0.0083
3.0000	0.3611	0.4167	0.2500	0.3889	0.3889	0.3611	0.0583
4.0000	0.3542	0.3333	0.3542	0.3125	0.4167	0.3542	0.0349
5.0000	0.4167	0.3958	0.3125	0.3542	0.3958	0.3750	0.0373
6.0000	0.3256	0.3409	0.3864	0.2500	0.3409	0.3288	0.0443
7.0000	0.3542	0.2500	0.4167	0.3125	0.3333	0.3333	0.0543
8.0000	0.3750	0.3250	0.3500	0.3500	0.4000	0.3600	0.0255
9.0000	0.4375	0.3333	0.3333	0.3958	0.3333	0.3667	0.0429
10.0000	0.3750	0.3750	0.3958	0.3125	0.4583	0.3833	0.0468
					Avg	0.3576	0.0410

Shallow CNN	LeakyRelu	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.1750	0.2750	0.2250	0.2750	0.2400	0.0374
2.0000	0.2500	0.3958	0.2917	0.2292	0.3333	0.3000	0.0598
3.0000	0.1667	0.1667	0.3889	0.2500	0.3056	0.2556	0.0850
4.0000	0.3542	0.3750	0.2083	0.2292	0.3542	0.3042	0.0705
5.0000	0.2917	0.3542	0.2083	0.2500	0.3333	0.2875	0.0534
6.0000	0.2727	0.2093	0.3256	0.2558	0.2093	0.2545	0.0435
7.0000	0.4167	0.2917	0.1458	0.2500	0.2292	0.2667	0.0888
8.0000	0.3250	0.2250	0.1750	0.3500	0.3500	0.2850	0.0718
9.0000	0.1250	0.2292	0.2708	0.2500	0.2917	0.2333	0.0580
10.0000	0.3750	0.2083	0.3125	0.2708	0.2500	0.2833	0.0568
					Avg	0.2710	0.0625

Table 8.83: 1024 Hz

Shallow CNN	#filters: 60	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.7583	0.9417	0.6333	0.9500	0.9333	0.8433	0.1269
2.0000	0.9931	0.9861	0.7431	0.9722	0.9931	0.9375	0.0975
3.0000	0.9630	0.9167	0.9537	0.9259	0.8889	0.9296	0.0266
4.0000	0.9097	0.7361	0.8611	1.0000	1.0000	0.9014	0.0984
5.0000	0.8264	0.9861	0.9861	0.9861	0.8889	0.9347	0.0660
6.0000	0.9302	0.9690	0.9457	0.9225	0.9922	0.9519	0.0257
7.0000	0.3611	0.9792	0.9375	1.0000	0.9167	0.8389	0.2407
8.0000	0.9500	0.9750	0.9750	0.9000	0.9917	0.9583	0.0321
9.0000	0.9861	0.9931	0.7222	0.9375	0.9583	0.9194	0.1006
10.0000	0.8889	0.9792	0.9792	0.9861	0.7778	0.9222	0.0807
					Avg	0.9137	0.0895

Shallow CNN	#filters: 60	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4250	0.3250	0.3000	0.4250	0.3000	0.3550	0.0579
2.0000	0.4167	0.3333	0.3542	0.3750	0.3958	0.3750	0.0295
3.0000	0.3889	0.3056	0.3889	0.3611	0.3056	0.3500	0.0377
4.0000	0.3750	0.3750	0.3333	0.4167	0.3750	0.3750	0.0264
5.0000	0.3125	0.3333	0.2917	0.3542	0.2917	0.3167	0.0243
6.0000	0.4186	0.3864	0.3182	0.4318	0.3636	0.3837	0.0406
7.0000	0.3125	0.3542	0.3333	0.3958	0.4167	0.3625	0.0386
8.0000	0.5250	0.4250	0.3750	0.4500	0.4250	0.4400	0.0490
9.0000	0.3125	0.4375	0.4167	0.3958	0.3750	0.3875	0.0429
10.0000	0.3750	0.3958	0.3542	0.3542	0.3750	0.3708	0.0156
					Avg	0.3716	0.0362

Shallow CNN	#filters: 60	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.2000	0.3000	0.2000	0.1750	0.2400	0.0604
2.0000	0.1667	0.3750	0.2708	0.2917	0.2708	0.2750	0.0664
3.0000	0.2778	0.2778	0.1667	0.1944	0.2778	0.2389	0.0484
4.0000	0.2500	0.3750	0.3750	0.2083	0.2500	0.2917	0.0697
5.0000	0.2292	0.2500	0.1875	0.1667	0.1875	0.2042	0.0306
6.0000	0.2500	0.3023	0.3488	0.2093	0.1860	0.2593	0.0597
7.0000	0.2708	0.3333	0.1667	0.2708	0.1875	0.2458	0.0610
8.0000	0.2750	0.3250	0.4000	0.3250	0.2750	0.3200	0.0458
9.0000	0.1875	0.2083	0.1875	0.3542	0.3125	0.2500	0.0697
10.0000	0.2292	0.3750	0.3125	0.2917	0.3542	0.3125	0.0510
					Avg	0.2637	0.0563

Table 8.84: 1024 Hz

Shallow CNN	Feature extract	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	1.0000	0.5083	0.9017	0.1967
2.0000	1.0000	0.5000	0.4722	1.0000	1.0000	0.7944	0.2519
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	0.8472	1.0000	1.0000	1.0000	1.0000	0.9694	0.0611
5.0000	0.9931	0.9931	1.0000	0.4514	0.5972	0.8069	0.2354
6.0000	1.0000	1.0000	0.9922	1.0000	1.0000	0.9984	0.0031
7.0000	0.5208	0.4931	1.0000	1.0000	1.0000	0.8028	0.2417
8.0000	0.9917	0.4917	0.5250	0.9167	0.9917	0.7833	0.2264
9.0000	0.9931	0.3264	0.9375	0.8958	0.9792	0.8264	0.2523
10.0000	0.5625	0.9167	0.9653	0.4861	1.0000	0.7861	0.2167
					Avg	0.8670	0.1685

Shallow CNN	Feature extract	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.5000	0.3250	0.4500	0.3000	0.3250	0.3800	0.0797
2.0000	0.3333	0.3125	0.3542	0.3958	0.4167	0.3625	0.0386
3.0000	0.2500	0.2500	0.2500	0.1389	0.3889	0.2556	0.0793
4.0000	0.3333	0.4167	0.3542	0.3542	0.2708	0.3458	0.0468
5.0000	0.2708	0.3333	0.2708	0.2708	0.3542	0.3000	0.0363
6.0000	0.2558	0.3864	0.2727	0.4091	0.2955	0.3239	0.0620
7.0000	0.2708	0.2917	0.3750	0.2917	0.3125	0.3083	0.0358
8.0000	0.4250	0.2750	0.3000	0.3750	0.3750	0.3500	0.0548
9.0000	0.3125	0.2917	0.3125	0.2083	0.2500	0.2750	0.0404
10.0000	0.2708	0.3125	0.3542	0.3750	0.2083	0.3042	0.0598
					Avg	0.3205	0.0534

Shallow CNN	Feature extract	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.4000	0.3000	0.3750	0.1750	0.3100	0.0784
2.0000	0.2708	0.2500	0.3542	0.2708	0.2083	0.2708	0.0475
3.0000	0.2500	0.3056	0.1944	0.3056	0.2500	0.2611	0.0416
4.0000	0.3333	0.2292	0.1875	0.2292	0.3333	0.2625	0.0598
5.0000	0.2917	0.1875	0.3125	0.3333	0.2500	0.2750	0.0517
6.0000	0.2273	0.2558	0.2791	0.1395	0.2093	0.2222	0.0477
7.0000	0.3333	0.4167	0.1875	0.2500	0.2292	0.2833	0.0819
8.0000	0.3500	0.2750	0.3250	0.3000	0.3250	0.3150	0.0255
9.0000	0.1667	0.2708	0.1667	0.3542	0.1458	0.2208	0.0797
10.0000	0.2292	0.3125	0.3333	0.2083	0.3542	0.2875	0.0580
					Avg	0.2708	0.0572

Shallow CNN	Fine tune	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	1.0000	1.0000	0.7833	0.4750	0.8517	0.2062
2.0000	0.4583	1.0000	0.8681	0.9931	1.0000	0.8639	0.2089
3.0000	1.0000	1.0000	0.4907	1.0000	1.0000	0.8981	0.2037
4.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
5.0000	0.9236	0.6944	0.9792	1.0000	0.5833	0.8361	0.1667
6.0000	1.0000	0.9535	1.0000	0.5581	1.0000	0.9023	0.1730
7.0000	1.0000	1.0000	0.8819	1.0000	0.7153	0.9194	0.1119
8.0000	1.0000	0.5333	1.0000	0.9833	0.9917	0.9017	0.1843
9.0000	0.9861	0.7986	0.9931	0.3681	0.3542	0.7000	0.2854
10.0000	0.9931	0.9514	1.0000	1.0000	0.9931	0.9875	0.0183
					Avg	0.8861	0.1558

Shallow CNN	Fine tune	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3500	0.2500	0.2750	0.3250	0.3500	0.3100	0.0406
2.0000	0.3125	0.3333	0.3542	0.3958	0.2708	0.3333	0.0417
3.0000	0.2222	0.3056	0.3333	0.3333	0.2500	0.2889	0.0451
4.0000	0.2917	0.2292	0.3542	0.2917	0.3958	0.3125	0.0574
5.0000	0.3542	0.3125	0.2292	0.2917	0.2708	0.2917	0.0417
6.0000	0.1860	0.2955	0.2273	0.2955	0.2955	0.2599	0.0454
7.0000	0.3750	0.3958	0.2292	0.3125	0.4375	0.3500	0.0726
8.0000	0.4000	0.3500	0.3750	0.2750	0.2500	0.3300	0.0579
9.0000	0.2917	0.3750	0.3958	0.1667	0.2917	0.3042	0.0808
10.0000	0.3125	0.2917	0.3750	0.3750	0.3125	0.3333	0.0349
					Avg	0.3114	0.0518

Shallow CNN	Fine tune	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2250	0.3250	0.3500	0.2750	0.2500	0.2850	0.0464
2.0000	0.3333	0.1667	0.3125	0.2917	0.2500	0.2708	0.0589
3.0000	0.2500	0.2778	0.1944	0.3056	0.1111	0.2278	0.0689
4.0000	0.3333	0.2292	0.2708	0.3333	0.2500	0.2833	0.0429
5.0000	0.1667	0.2708	0.2917	0.3333	0.2500	0.2625	0.0553
6.0000	0.1591	0.2558	0.3023	0.2326	0.2558	0.2411	0.0469
7.0000	0.2708	0.3333	0.4375	0.2083	0.2708	0.3042	0.0775
8.0000	0.2250	0.3000	0.2750	0.3250	0.2750	0.2800	0.0332
9.0000	0.2083	0.1875	0.2708	0.2500	0.1667	0.2167	0.0386
10.0000	0.2500	0.2708	0.3333	0.2500	0.3333	0.2875	0.0382
					Avg	0.2659	0.0507

Appendix: EEGNet results

EEGNet	batch size: 4	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.8417	1.0000	1.0000	1.0000	1.0000	0.9683	0.0633
2.0000	1.0000	1.0000	0.9792	1.0000	0.9931	0.9944	0.0081
3.0000	1.0000	0.9907	1.0000	1.0000	1.0000	0.9981	0.0037
4.0000	1.0000	1.0000	1.0000	0.9861	1.0000	0.9972	0.0056
5.0000	0.2917	0.2500	1.0000	0.9931	1.0000	0.7069	0.3563
6.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
7.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
8.0000	1.0000	0.3667	1.0000	0.2500	1.0000	0.7233	0.3408
9.0000	0.9931	0.9931	0.7986	0.9653	0.9931	0.9486	0.0758
10.0000	0.9653	0.9722	1.0000	1.0000	1.0000	0.9875	0.0155
					Avg	0.9325	0.0869

EEGNet	batch size: 4	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.3250	0.3250	0.3000	0.3250	0.3050	0.0292
2.0000	0.2917	0.2917	0.3750	0.2917	0.3542	0.3208	0.0363
3.0000	0.4167	0.3333	0.3333	0.2500	0.3611	0.3389	0.0539
4.0000	0.2917	0.4792	0.3125	0.4167	0.3958	0.3792	0.0690
5.0000	0.2500	0.2500	0.3542	0.2500	0.3333	0.2875	0.0464
6.0000	0.2791	0.2955	0.3636	0.3409	0.3182	0.3195	0.0304
7.0000	0.2917	0.3333	0.3125	0.3958	0.3750	0.3417	0.0386
8.0000	0.4000	0.2500	0.4250	0.2500	0.3250	0.3300	0.0731
9.0000	0.4167	0.5000	0.3125	0.4167	0.3750	0.4042	0.0612
10.0000	0.4375	0.2708	0.3125	0.4167	0.2917	0.3458	0.0680
					Avg	0.3373	0.0506

EEGNet	batch size: 4	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3250	0.2750	0.2500	0.3750	0.1750	0.2800	0.0678
2.0000	0.2500	0.2917	0.2500	0.2708	0.3542	0.2833	0.0386
3.0000	0.3889	0.2778	0.3056	0.2222	0.2778	0.2944	0.0544
4.0000	0.1875	0.2708	0.3333	0.3333	0.2292	0.2708	0.0574
5.0000	0.2500	0.2500	0.2083	0.2708	0.3333	0.2625	0.0408
6.0000	0.2955	0.3721	0.2558	0.3256	0.2558	0.3010	0.0442
7.0000	0.3333	0.2500	0.3125	0.2917	0.2083	0.2792	0.0449
8.0000	0.2500	0.3250	0.2750	0.2500	0.4000	0.3000	0.0570
9.0000	0.2708	0.1667	0.3333	0.1875	0.3542	0.2625	0.0752
10.0000	0.3333	0.3958	0.4375	0.3750	0.3125	0.3708	0.0445
					Avg	0.2905	0.0525

Table 8.85: 254 Hz

EEGNet	batch size: 10	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.7167	0.2500	1.0000	1.0000	0.7933	0.2930
2.0000	1.0000	1.0000	1.0000	0.9931	1.0000	0.9986	0.0028
3.0000	1.0000	0.6944	1.0000	1.0000	1.0000	0.9389	0.1222
4.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
5.0000	1.0000	0.9931	1.0000	1.0000	0.9375	0.9861	0.0245
6.0000	1.0000	0.2481	1.0000	1.0000	1.0000	0.8496	0.3008
7.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	0.9931	0.2708	0.2569	1.0000	0.9792	0.7000	0.3562
10.0000	1.0000	1.0000	0.7847	1.0000	1.0000	0.9569	0.0861
					Avg	0.9224	0.1186

EEGNet	batch size: 10	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.3750	0.2500	0.3000	0.3250	0.3100	0.0406
2.0000	0.3125	0.3958	0.3125	0.3750	0.2917	0.3375	0.0404
3.0000	0.3889	0.2500	0.3889	0.4444	0.3889	0.3722	0.0648
4.0000	0.2917	0.3542	0.4375	0.3542	0.3958	0.3667	0.0486
5.0000	0.3750	0.3958	0.3958	0.3750	0.3125	0.3708	0.0306
6.0000	0.2791	0.2500	0.2727	0.2500	0.4091	0.2922	0.0596
7.0000	0.4375	0.3750	0.3542	0.2917	0.2917	0.3500	0.0550
8.0000	0.3500	0.3000	0.3250	0.3750	0.3500	0.3400	0.0255
9.0000	0.3750	0.2500	0.3125	0.4375	0.3125	0.3375	0.0637
10.0000	0.4583	0.4167	0.2917	0.3125	0.3125	0.3583	0.0664
					Avg	0.3435	0.0495

EEGNet	batch size: 10	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.1500	0.4000	0.2500	0.2250	0.2500	0.2550	0.0812
2.0000	0.2083	0.2708	0.2917	0.1875	0.1875	0.2292	0.0437
3.0000	0.1944	0.2500	0.3333	0.1944	0.1944	0.2333	0.0544
4.0000	0.1875	0.3333	0.2708	0.3958	0.2292	0.2833	0.0741
5.0000	0.2292	0.2917	0.2917	0.4583	0.2292	0.3000	0.0840
6.0000	0.2273	0.2558	0.2558	0.1628	0.3256	0.2455	0.0525
7.0000	0.2708	0.3125	0.2708	0.2292	0.3125	0.2792	0.0312
8.0000	0.2750	0.4250	0.1750	0.3000	0.2250	0.2800	0.0843
9.0000	0.2292	0.2500	0.2500	0.2917	0.2708	0.2583	0.0212
10.0000	0.2917	0.2500	0.2708	0.3125	0.3750	0.3000	0.0429
					Avg	0.2664	0.0570

Table 8.86: 254 Hz

EEGNet	batch size: 20	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
2.0000	1.0000	1.0000	1.0000	0.5556	1.0000	0.9111	0.1778
3.0000	1.0000	1.0000	1.0000	0.9444	1.0000	0.9889	0.0222
4.0000	0.9653	0.8194	1.0000	0.9097	1.0000	0.9389	0.0682
5.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
6.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
7.0000	1.0000	1.0000	0.5069	1.0000	1.0000	0.9014	0.1972
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	0.9931	1.0000	0.5069	0.9583	0.8917	0.1930
					Avg	0.9632	0.0658

EEGNet	batch size: 20	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4500	0.2500	0.3750	0.3000	0.3500	0.3450	0.0678
2.0000	0.2708	0.2917	0.3542	0.2708	0.3750	0.3125	0.0437
3.0000	0.3889	0.2778	0.3333	0.3333	0.4167	0.3500	0.0484
4.0000	0.3333	0.2708	0.3750	0.3333	0.3958	0.3417	0.0429
5.0000	0.3542	0.3333	0.4375	0.2708	0.3333	0.3458	0.0537
6.0000	0.2791	0.3182	0.2955	0.2727	0.3182	0.2967	0.0190
7.0000	0.3333	0.3333	0.3542	0.3750	0.3958	0.3583	0.0243
8.0000	0.2500	0.3250	0.3750	0.2500	0.3000	0.3000	0.0474
9.0000	0.3750	0.3750	0.3750	0.3750	0.4583	0.3917	0.0333
10.0000	0.3333	0.3750	0.4167	0.2708	0.4375	0.3667	0.0598
					Avg	0.3408	0.0440

EEGNet	batch size: 20	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3500	0.4000	0.1750	0.3000	0.4000	0.3250	0.0837
2.0000	0.4167	0.3125	0.2292	0.2500	0.2917	0.3000	0.0654
3.0000	0.3056	0.3056	0.2500	0.2500	0.3611	0.2944	0.0416
4.0000	0.2917	0.2917	0.2083	0.3125	0.2292	0.2667	0.0404
5.0000	0.2292	0.3125	0.2083	0.1667	0.2917	0.2417	0.0537
6.0000	0.2045	0.3023	0.1628	0.2791	0.2558	0.2409	0.0507
7.0000	0.3125	0.2292	0.2500	0.2500	0.2083	0.2500	0.0349
8.0000	0.3000	0.3000	0.3000	0.3500	0.4500	0.3400	0.0583
9.0000	0.2917	0.3333	0.2292	0.2500	0.3542	0.2917	0.0475
10.0000	0.2292	0.2500	0.2500	0.3333	0.2917	0.2708	0.0373
					Avg	0.2821	0.0513

Table 8.87: 254 Hz

EEGNet	batch size: 4	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	1.0000	1.0000	0.2500	0.2500	0.7000	0.3674
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	0.6111	1.0000	1.0000	0.2500	1.0000	0.7722	0.3014
4.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
5.0000	1.0000	0.9931	0.2500	1.0000	0.2500	0.6986	0.3663
6.0000	0.2713	1.0000	1.0000	0.9922	1.0000	0.8527	0.2907
7.0000	1.0000	0.2500	1.0000	0.3125	0.8472	0.6819	0.3325
8.0000	1.0000	1.0000	0.3417	1.0000	0.2583	0.7200	0.3439
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.8425	0.2002

EEGNet	batch size: 4	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.4000	0.4000	0.3750	0.2500	0.2500	0.3350	0.0700
2.0000	0.3542	0.2708	0.3542	0.3750	0.3333	0.3375	0.0358
3.0000	0.3056	0.3056	0.3889	0.2500	0.3333	0.3167	0.0451
4.0000	0.2917	0.3333	0.4375	0.2708	0.3333	0.3333	0.0574
5.0000	0.3958	0.2917	0.2500	0.2708	0.2500	0.2917	0.0543
6.0000	0.2558	0.2727	0.2727	0.2727	0.4318	0.3012	0.0657
7.0000	0.3333	0.2500	0.3125	0.2500	0.2500	0.2792	0.0363
8.0000	0.4000	0.4000	0.2750	0.3750	0.2500	0.3400	0.0644
9.0000	0.4375	0.3542	0.3958	0.4167	0.3958	0.4000	0.0276
10.0000	0.4375	0.3542	0.3333	0.3750	0.3750	0.3750	0.0349
					Avg	0.3309	0.0492

EEGNet	batch size: 4	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2250	0.2500	0.1750	0.2500	0.2500	0.2300	0.0292
2.0000	0.2083	0.2292	0.3125	0.2917	0.2500	0.2583	0.0386
3.0000	0.2778	0.3056	0.1111	0.2500	0.1944	0.2278	0.0689
4.0000	0.2292	0.2500	0.2917	0.2292	0.2708	0.2542	0.0243
5.0000	0.3125	0.2083	0.2500	0.2708	0.2500	0.2583	0.0339
6.0000	0.2500	0.4186	0.2093	0.2558	0.3023	0.2872	0.0720
7.0000	0.2500	0.2500	0.1667	0.2292	0.2083	0.2208	0.0312
8.0000	0.3000	0.3000	0.2750	0.4250	0.2500	0.3100	0.0604
9.0000	0.2917	0.3958	0.2292	0.2500	0.2083	0.2750	0.0664
10.0000	0.1875	0.3750	0.3125	0.2500	0.2708	0.2792	0.0626
					Avg	0.2601	0.0488

Table 8.88: 1024 Hz

EEGNet	batch size: 10	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
2.0000	1.0000	1.0000	1.0000	1.0000	0.9931	0.9986	0.0028
3.0000	1.0000	1.0000	0.5278	1.0000	0.4815	0.8019	0.2431
4.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
5.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
6.0000	1.0000	1.0000	1.0000	1.0000	0.7597	0.9519	0.0961
7.0000	1.0000	0.8056	1.0000	1.0000	0.2500	0.8111	0.2905
8.0000	1.0000	0.9500	1.0000	1.0000	0.7500	0.9400	0.0970
9.0000	0.9583	0.9583	1.0000	1.0000	1.0000	0.9833	0.0204
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.9487	0.0750

EEGNet	batch size: 10	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3500	0.2750	0.3000	0.4500	0.3000	0.3350	0.0624
2.0000	0.3750	0.3125	0.3958	0.3333	0.2708	0.3375	0.0445
3.0000	0.2778	0.2778	0.2778	0.2778	0.2778	0.2778	0.0000
4.0000	0.2917	0.3125	0.4167	0.3125	0.3958	0.3458	0.0503
5.0000	0.2708	0.2708	0.3750	0.4167	0.3750	0.3417	0.0598
6.0000	0.3256	0.3182	0.2955	0.3409	0.3636	0.3288	0.0228
7.0000	0.3958	0.2708	0.2708	0.3542	0.2500	0.3083	0.0565
8.0000	0.2500	0.3500	0.3000	0.3500	0.3000	0.3100	0.0374
9.0000	0.3542	0.3333	0.3125	0.3750	0.3958	0.3542	0.0295
10.0000	0.4167	0.3333	0.2917	0.2708	0.3333	0.3292	0.0500
					Avg	0.3268	0.0413

EEGNet	batch size: 10	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.2250	0.2000	0.1250	0.2500	0.2100	0.0464
2.0000	0.2708	0.3125	0.2083	0.2708	0.3125	0.2750	0.0382
3.0000	0.2500	0.2500	0.2500	0.3333	0.3056	0.2778	0.0351
4.0000	0.3125	0.3542	0.2083	0.2917	0.2708	0.2875	0.0482
5.0000	0.2708	0.2708	0.2500	0.2083	0.1042	0.2208	0.0626
6.0000	0.3636	0.3023	0.2558	0.3721	0.2558	0.3099	0.0503
7.0000	0.2917	0.2708	0.2500	0.2500	0.2500	0.2625	0.0167
8.0000	0.3000	0.3000	0.4750	0.2750	0.3500	0.3400	0.0718
9.0000	0.2500	0.2917	0.2917	0.2083	0.2500	0.2583	0.0312
10.0000	0.3958	0.3542	0.2708	0.2500	0.1875	0.2917	0.0745
					Avg	0.2734	0.0475

Table 8.89: 1024 Hz

EEGNet	batch size: 20	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	0.8833	1.0000	1.0000	0.9767	0.0467
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	1.0000	0.7778	1.0000	1.0000	1.0000	0.9556	0.0889
4.0000	0.9722	1.0000	1.0000	1.0000	0.8056	0.9556	0.0758
5.0000	1.0000	1.0000	0.9861	1.0000	0.7917	0.9556	0.0821
6.0000	1.0000	0.7597	1.0000	1.0000	1.0000	0.9519	0.0961
7.0000	1.0000	1.0000	1.0000	0.5694	1.0000	0.9139	0.1722
8.0000	0.5000	1.0000	1.0000	1.0000	1.0000	0.9000	0.2000
9.0000	1.0000	1.0000	0.9236	1.0000	1.0000	0.9847	0.0306
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.9594	0.0792

EEGNet	batch size: 20	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3750	0.4500	0.3250	0.4250	0.3500	0.3850	0.0464
2.0000	0.3542	0.3542	0.3333	0.3542	0.2917	0.3375	0.0243
3.0000	0.4167	0.3333	0.2500	0.3333	0.3889	0.3444	0.0572
4.0000	0.4167	0.3750	0.2708	0.4167	0.3125	0.3583	0.0580
5.0000	0.3958	0.2500	0.3125	0.3125	0.3125	0.3167	0.0464
6.0000	0.3023	0.2727	0.2727	0.4545	0.3409	0.3286	0.0677
7.0000	0.2917	0.2917	0.3333	0.3125	0.3125	0.3083	0.0156
8.0000	0.2750	0.4250	0.4250	0.3750	0.3500	0.3700	0.0557
9.0000	0.2708	0.3750	0.2917	0.3333	0.2708	0.3083	0.0404
10.0000	0.3542	0.3750	0.3750	0.4583	0.3333	0.3792	0.0425
					Avg	0.3436	0.0454

EEGNet	batch size: 20	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.2250	0.2750	0.2250	0.3000	0.2600	0.0300
2.0000	0.3333	0.2708	0.2083	0.1458	0.3333	0.2583	0.0729
3.0000	0.1389	0.3056	0.1944	0.2222	0.3611	0.2444	0.0793
4.0000	0.3333	0.3333	0.3333	0.2500	0.2083	0.2917	0.0527
5.0000	0.2083	0.2083	0.2500	0.2500	0.2292	0.2292	0.0186
6.0000	0.2955	0.2326	0.3023	0.3023	0.2791	0.2823	0.0263
7.0000	0.2708	0.2917	0.1875	0.2292	0.2708	0.2500	0.0373
8.0000	0.2500	0.3500	0.1750	0.3250	0.3500	0.2900	0.0682
9.0000	0.2708	0.2917	0.2917	0.3333	0.3125	0.3000	0.0212
10.0000	0.4375	0.3125	0.2292	0.1875	0.3750	0.3083	0.0917
					Avg	0.2714	0.0498

Table 8.90: 1024 Hz

EEGNet	bias: False	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.9833	0.7333	1.0000	1.0000	0.9433	0.1052
2.0000	1.0000	0.9861	1.0000	1.0000	0.2500	0.8472	0.2987
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	0.4514	0.9583	1.0000	1.0000	0.9861	0.8792	0.2144
5.0000	1.0000	0.9792	1.0000	1.0000	1.0000	0.9958	0.0083
6.0000	0.2636	1.0000	1.0000	1.0000	1.0000	0.8527	0.2946
7.0000	1.0000	1.0000	0.9792	1.0000	1.0000	0.9958	0.0083
8.0000	1.0000	0.9750	1.0000	1.0000	1.0000	0.9950	0.0100
9.0000	1.0000	1.0000	0.9931	0.9861	1.0000	0.9958	0.0056
10.0000	1.0000	1.0000	0.9861	1.0000	0.8750	0.9722	0.0489
					Avg	0.9477	0.0994

EEGNet	bias: False	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3750	0.3250	0.3750	0.3500	0.3500	0.3550	0.0187
2.0000	0.4375	0.3750	0.4167	0.3125	0.2500	0.3583	0.0690
3.0000	0.3333	0.3333	0.4444	0.4167	0.3056	0.3667	0.0539
4.0000	0.3750	0.3125	0.3333	0.3750	0.3542	0.3500	0.0243
5.0000	0.3750	0.2708	0.2708	0.3333	0.3542	0.3208	0.0429
6.0000	0.2558	0.2727	0.2727	0.3409	0.2727	0.2830	0.0297
7.0000	0.3750	0.2708	0.3958	0.3958	0.2917	0.3458	0.0537
8.0000	0.4500	0.4000	0.4000	0.4000	0.3750	0.4050	0.0245
9.0000	0.4375	0.4167	0.3542	0.3542	0.5000	0.4125	0.0550
10.0000	0.2708	0.3750	0.3750	0.2917	0.4583	0.3542	0.0672
					Avg	0.3551	0.0439

EEGNet	bias: False	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.3000	0.3250	0.3000	0.3250	0.3000	0.0274
2.0000	0.3125	0.3125	0.2708	0.3542	0.2500	0.3000	0.0363
3.0000	0.2222	0.3333	0.3056	0.1944	0.3056	0.2722	0.0539
4.0000	0.3333	0.3333	0.2708	0.1875	0.1458	0.2542	0.0761
5.0000	0.2500	0.2708	0.2917	0.3542	0.2500	0.2833	0.0386
6.0000	0.2727	0.3023	0.3721	0.3023	0.2326	0.2964	0.0457
7.0000	0.2292	0.3125	0.2500	0.2500	0.2083	0.2500	0.0349
8.0000	0.2750	0.2750	0.4000	0.2500	0.4000	0.3200	0.0660
9.0000	0.2500	0.2500	0.2083	0.3958	0.2500	0.2708	0.0645
10.0000	0.3958	0.4167	0.1875	0.3333	0.2917	0.3250	0.0819
					Avg	0.2872	0.0525

Table 8.91: 254 Hz

EEGNet	bias: True	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	1.0000	0.9750	0.9950	0.0100
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	0.2500	1.0000	1.0000	1.0000	0.9861	0.8472	0.2987
5.0000	0.7639	1.0000	1.0000	1.0000	1.0000	0.9528	0.0944
6.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
7.0000	0.9861	1.0000	1.0000	1.0000	1.0000	0.9972	0.0056
8.0000	1.0000	0.9917	1.0000	1.0000	1.0000	0.9983	0.0033
9.0000	1.0000	1.0000	0.9931	1.0000	1.0000	0.9986	0.0028
10.0000	1.0000	0.4167	1.0000	1.0000	1.0000	0.8833	0.2333
					Avg	0.9673	0.0648

EEGNet	bias: True	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3750	0.3000	0.3500	0.3500	0.4000	0.3550	0.0332
2.0000	0.3542	0.2917	0.3750	0.3750	0.3750	0.3542	0.0323
3.0000	0.3056	0.3889	0.3889	0.3056	0.3056	0.3389	0.0408
4.0000	0.2500	0.3958	0.4583	0.2708	0.4583	0.3667	0.0899
5.0000	0.3333	0.4583	0.3958	0.3333	0.2500	0.3542	0.0697
6.0000	0.3023	0.3182	0.3182	0.3409	0.3636	0.3286	0.0214
7.0000	0.3125	0.2500	0.3750	0.3125	0.2917	0.3083	0.0404
8.0000	0.4000	0.4000	0.3500	0.3250	0.3750	0.3700	0.0292
9.0000	0.4583	0.3958	0.3750	0.2500	0.3542	0.3667	0.0680
10.0000	0.3125	0.3542	0.3750	0.4167	0.3750	0.3667	0.0339
					Avg	0.3509	0.0459

EEGNet	bias: True	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.2500	0.1750	0.2250	0.2500	0.2450	0.0485
2.0000	0.2708	0.3542	0.1875	0.2917	0.2500	0.2708	0.0543
3.0000	0.1389	0.1667	0.1944	0.1667	0.2778	0.1889	0.0478
4.0000	0.2500	0.2917	0.3333	0.4375	0.2292	0.3083	0.0738
5.0000	0.1667	0.4167	0.2917	0.1667	0.2917	0.2667	0.0935
6.0000	0.2045	0.1860	0.1860	0.3023	0.2326	0.2223	0.0435
7.0000	0.3542	0.2917	0.2500	0.2917	0.2292	0.2833	0.0429
8.0000	0.3500	0.3750	0.3000	0.3750	0.3000	0.3400	0.0339
9.0000	0.3125	0.1458	0.3542	0.3333	0.2708	0.2833	0.0741
10.0000	0.3542	0.3125	0.2708	0.2292	0.2500	0.2833	0.0449
					Avg	0.2692	0.0557

Table 8.92: 254 Hz

EEGNet	bias: False	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.8333	0.2583	1.0000	0.9583	1.0000	0.8100	0.2825
2.0000	0.7917	0.9653	0.9097	0.5069	1.0000	0.8347	0.1785
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	1.0000	1.0000	0.6736	1.0000	1.0000	0.9347	0.1306
5.0000	0.5556	0.3403	1.0000	1.0000	0.2569	0.6306	0.3170
6.0000	1.0000	1.0000	1.0000	0.8295	1.0000	0.9659	0.0682
7.0000	1.0000	0.2500	1.0000	1.0000	1.0000	0.8500	0.3000
8.0000	1.0000	1.0000	1.0000	1.0000	0.9917	0.9983	0.0033
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.9024	0.1280

EEGNet	bias: False	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.2500	0.2500	0.3000	0.2750	0.2800	0.0292
2.0000	0.3542	0.2708	0.3333	0.3333	0.3750	0.3333	0.0349
3.0000	0.2778	0.3333	0.3611	0.3333	0.2500	0.3111	0.0408
4.0000	0.2917	0.4375	0.2917	0.4167	0.3750	0.3625	0.0612
5.0000	0.3542	0.2708	0.2500	0.3333	0.2500	0.2917	0.0437
6.0000	0.3023	0.3636	0.2727	0.3182	0.4545	0.3423	0.0634
7.0000	0.2917	0.2500	0.3125	0.3125	0.2500	0.2833	0.0283
8.0000	0.3250	0.3500	0.4500	0.2750	0.4750	0.3750	0.0758
9.0000	0.3750	0.3125	0.3750	0.3333	0.3333	0.3458	0.0250
10.0000	0.3333	0.3333	0.3750	0.3542	0.3125	0.3417	0.0212
					Avg	0.3267	0.0423

EEGNet	bias: False	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.2500	0.2250	0.3500	0.2500	0.2650	0.0436
2.0000	0.3333	0.2708	0.2500	0.2708	0.2083	0.2667	0.0404
3.0000	0.1667	0.2500	0.1389	0.2222	0.3889	0.2333	0.0871
4.0000	0.2917	0.3125	0.3542	0.3750	0.2083	0.3083	0.0580
5.0000	0.1667	0.2500	0.2917	0.2083	0.2500	0.2333	0.0425
6.0000	0.2273	0.2326	0.2791	0.2326	0.1628	0.2268	0.0371
7.0000	0.2917	0.2500	0.3125	0.2500	0.2917	0.2792	0.0250
8.0000	0.2750	0.2250	0.3750	0.3000	0.3000	0.2950	0.0485
9.0000	0.3333	0.3750	0.3333	0.3333	0.2500	0.3250	0.0408
10.0000	0.3958	0.3125	0.2917	0.3125	0.3333	0.3292	0.0358
					Avg	0.2762	0.0459

Table 8.93: 1024 Hz

EEGNet	bias: True	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
2.0000	0.8819	1.0000	1.0000	0.5139	1.0000	0.8792	0.1883
3.0000	1.0000	1.0000	0.7500	0.9907	1.0000	0.9481	0.0991
4.0000	1.0000	0.5694	1.0000	1.0000	1.0000	0.9139	0.1722
5.0000	1.0000	0.2500	0.3403	1.0000	1.0000	0.7181	0.3465
6.0000	1.0000	0.9225	0.9612	1.0000	1.0000	0.9767	0.0310
7.0000	1.0000	1.0000	1.0000	0.3472	0.9722	0.8639	0.2586
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	0.4583	0.4167	1.0000	0.5764	1.0000	0.6903	0.2583
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.8990	0.1354

EEGNet	bias: True	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.3000	0.3500	0.2500	0.3500	0.3150	0.0374
2.0000	0.3750	0.3750	0.3333	0.3125	0.2708	0.3333	0.0395
3.0000	0.3333	0.2778	0.3611	0.3611	0.3056	0.3278	0.0324
4.0000	0.3542	0.2917	0.3333	0.4375	0.2917	0.3417	0.0537
5.0000	0.2500	0.2500	0.2708	0.2917	0.3125	0.2750	0.0243
6.0000	0.4884	0.3409	0.3409	0.3864	0.3409	0.3795	0.0572
7.0000	0.3125	0.2708	0.2708	0.2500	0.2917	0.2792	0.0212
8.0000	0.4000	0.3000	0.3500	0.4500	0.3000	0.3600	0.0583
9.0000	0.2917	0.2708	0.3750	0.3125	0.3750	0.3250	0.0429
10.0000	0.3958	0.4583	0.3125	0.3542	0.3750	0.3792	0.0482
					Avg	0.3316	0.0415

EEGNet	bias: True	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2250	0.3500	0.2000	0.3250	0.2250	0.2650	0.0604
2.0000	0.3333	0.2708	0.2917	0.2708	0.2708	0.2875	0.0243
3.0000	0.1944	0.2778	0.0833	0.2500	0.3056	0.2222	0.0786
4.0000	0.2292	0.2708	0.2917	0.3958	0.2917	0.2958	0.0550
5.0000	0.2500	0.2500	0.2500	0.1458	0.1667	0.2125	0.0464
6.0000	0.2500	0.3488	0.1860	0.3023	0.1860	0.2547	0.0642
7.0000	0.3333	0.2917	0.2708	0.2500	0.3125	0.2917	0.0295
8.0000	0.3750	0.2000	0.3000	0.3500	0.3250	0.3100	0.0604
9.0000	0.2708	0.2708	0.2083	0.2708	0.2708	0.2583	0.0250
10.0000	0.3125	0.2500	0.2917	0.2708	0.3333	0.2917	0.0295
					Avg	0.2689	0.0473

Table 8.94: 1024 Hz

EEGNet	dropout: 0.001	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.9417	1.0000	1.0000	1.0000	0.9883	0.0233
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	1.0000	1.0000	1.0000	0.9352	1.0000	0.9870	0.0259
4.0000	1.0000	1.0000	0.9375	1.0000	0.9861	0.9847	0.0242
5.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
6.0000	1.0000	1.0000	0.9612	0.7132	0.9767	0.9302	0.1095
7.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
8.0000	0.6583	1.0000	1.0000	0.7500	0.9833	0.8783	0.1453
9.0000	1.0000	0.9306	1.0000	1.0000	1.0000	0.9861	0.0278
10.0000	1.0000	0.9861	1.0000	1.0000	1.0000	0.9972	0.0056
					Avg	0.9752	0.0362

EEGNet	dropout: 0.001	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.0000
2.0000	0.3542	0.3125	0.3333	0.3542	0.3542	0.3417	0.0167
3.0000	0.2500	0.3889	0.3889	0.2500	0.3333	0.3222	0.0624
4.0000	0.3958	0.2500	0.3958	0.3333	0.3333	0.3417	0.0537
5.0000	0.4167	0.3333	0.3125	0.2917	0.3750	0.3458	0.0449
6.0000	0.3023	0.3182	0.3182	0.2955	0.2500	0.2968	0.0250
7.0000	0.2917	0.2917	0.3333	0.4375	0.3750	0.3458	0.0553
8.0000	0.2750	0.3250	0.3250	0.4500	0.3250	0.3400	0.0583
9.0000	0.2917	0.3333	0.2708	0.3333	0.3542	0.3167	0.0306
10.0000	0.3958	0.3125	0.4167	0.3750	0.3333	0.3667	0.0386
					Avg	0.3317	0.0385

EEGNet	dropout: 0.001	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.1750	0.2500	0.2250	0.2250	0.2750	0.2300	0.0332
2.0000	0.3542	0.2083	0.2708	0.2708	0.2500	0.2708	0.0475
3.0000	0.3333	0.3889	0.3333	0.2222	0.1944	0.2944	0.0737
4.0000	0.1875	0.3125	0.3333	0.3125	0.2500	0.2792	0.0537
5.0000	0.2083	0.2083	0.3125	0.2292	0.3125	0.2542	0.0482
6.0000	0.2955	0.3023	0.2093	0.2558	0.2558	0.2637	0.0334
7.0000	0.2500	0.2083	0.3542	0.2708	0.2708	0.2708	0.0475
8.0000	0.2250	0.2250	0.4500	0.2500	0.2250	0.2750	0.0880
9.0000	0.3125	0.3542	0.3333	0.3542	0.2708	0.3250	0.0312
10.0000	0.3333	0.2292	0.1875	0.3125	0.3125	0.2750	0.0565
					Avg	0.2738	0.0513

Table 8.95: 254 Hz

EEGNet	dropout: 0.002	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4917	1.0000	0.5083	1.0000	1.0000	0.8000	0.2450
2.0000	1.0000	0.2500	1.0000	0.5347	1.0000	0.7569	0.3110
3.0000	0.4259	0.2870	0.2500	1.0000	0.2500	0.4426	0.2861
4.0000	0.9861	1.0000	1.0000	1.0000	0.9583	0.9889	0.0162
5.0000	1.0000	0.7222	1.0000	1.0000	1.0000	0.9444	0.1111
6.0000	0.3798	1.0000	1.0000	0.3333	1.0000	0.7426	0.3155
7.0000	1.0000	1.0000	0.8681	1.0000	0.2569	0.8250	0.2886
8.0000	0.5250	1.0000	1.0000	1.0000	1.0000	0.9050	0.1900
9.0000	1.0000	1.0000	1.0000	1.0000	0.2500	0.8500	0.3000
10.0000	1.0000	0.4444	1.0000	1.0000	0.9861	0.8861	0.2209
					Avg	0.8142	0.2284

EEGNet	dropout: 0.002	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4000	0.2750	0.3250	0.2750	0.3250	0.3200	0.0458
2.0000	0.3333	0.2500	0.2917	0.2917	0.3125	0.2958	0.0276
3.0000	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.0000
4.0000	0.3333	0.3750	0.3542	0.3958	0.2708	0.3458	0.0429
5.0000	0.3125	0.2708	0.3750	0.3125	0.3958	0.3333	0.0456
6.0000	0.3023	0.2727	0.2727	0.2727	0.3182	0.2877	0.0191
7.0000	0.3542	0.3542	0.2708	0.3333	0.2500	0.3125	0.0437
8.0000	0.3250	0.3750	0.4000	0.3750	0.3750	0.3700	0.0245
9.0000	0.3958	0.3750	0.2917	0.3333	0.2500	0.3292	0.0534
10.0000	0.3750	0.2917	0.2917	0.3958	0.3333	0.3375	0.0425
					Avg	0.3182	0.0345

EEGNet	dropout: 0.002	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.3500	0.2250	0.1250	0.2500	0.2450	0.0731
2.0000	0.2917	0.2500	0.2500	0.3125	0.2917	0.2792	0.0250
3.0000	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.0000
4.0000	0.2917	0.2708	0.2083	0.2917	0.3542	0.2833	0.0468
5.0000	0.3750	0.2292	0.2083	0.2708	0.2708	0.2708	0.0574
6.0000	0.2500	0.2791	0.3023	0.2791	0.1860	0.2593	0.0402
7.0000	0.2083	0.1458	0.1875	0.2500	0.2500	0.2083	0.0395
8.0000	0.3000	0.4250	0.1750	0.3250	0.2250	0.2900	0.0860
9.0000	0.1667	0.2500	0.3333	0.2917	0.2500	0.2583	0.0553
10.0000	0.2917	0.2083	0.3333	0.2083	0.3958	0.2875	0.0726
					Avg	0.2632	0.0496

Table 8.96: 254 Hz

EEGNet	dropout: 0.01	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	1.0000	1.0000	1.0000	0.9917	0.8483	0.2992
2.0000	0.9931	1.0000	0.2500	1.0000	1.0000	0.8486	0.2993
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	0.5625	0.4722	1.0000	1.0000	1.0000	0.8069	0.2382
5.0000	0.9931	0.9236	1.0000	0.9931	1.0000	0.9819	0.0293
6.0000	0.9845	1.0000	0.2481	1.0000	1.0000	0.8465	0.2993
7.0000	1.0000	0.2500	1.0000	1.0000	0.2500	0.7000	0.3674
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	1.0000	1.0000	1.0000	0.9167	0.9833	0.0333
					Avg	0.9016	0.1566

EEGNet	dropout: 0.01	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.2500	0.2500	0.3250	0.3000	0.2750	0.0316
2.0000	0.3125	0.3333	0.2500	0.3750	0.2917	0.3125	0.0417
3.0000	0.2500	0.3611	0.3611	0.2500	0.3889	0.3222	0.0598
4.0000	0.3750	0.3542	0.3750	0.3958	0.2917	0.3583	0.0358
5.0000	0.4583	0.2500	0.3333	0.3542	0.3125	0.3417	0.0680
6.0000	0.3488	0.2500	0.2500	0.3864	0.2727	0.3016	0.0558
7.0000	0.3333	0.2500	0.2500	0.3125	0.2500	0.2792	0.0363
8.0000	0.3000	0.3250	0.4000	0.4000	0.4250	0.3700	0.0485
9.0000	0.3958	0.3333	0.3750	0.4583	0.2500	0.3625	0.0692
10.0000	0.4792	0.3333	0.3125	0.3125	0.2708	0.3417	0.0717
					Avg	0.3265	0.0518

EEGNet	dropout: 0.01	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.2250	0.2750	0.2500	0.1500	0.2300	0.0430
2.0000	0.3750	0.2500	0.2500	0.2292	0.1875	0.2583	0.0626
3.0000	0.1389	0.3056	0.1667	0.1944	0.2500	0.2111	0.0598
4.0000	0.1875	0.3125	0.3750	0.2083	0.3125	0.2792	0.0705
5.0000	0.1875	0.2083	0.3333	0.2292	0.3125	0.2542	0.0580
6.0000	0.2273	0.2791	0.2558	0.2093	0.3256	0.2594	0.0408
7.0000	0.4792	0.2500	0.2917	0.1667	0.2500	0.2875	0.1041
8.0000	0.2500	0.3000	0.3500	0.3000	0.4250	0.3250	0.0592
9.0000	0.1458	0.2083	0.2292	0.1875	0.3542	0.2250	0.0702
10.0000	0.4167	0.2500	0.3333	0.3958	0.3750	0.3542	0.0589
					Avg	0.2684	0.0627

Table 8.97: 254 Hz

EEGNet	dropout: 0.1	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.5167	0.4917	1.0000	1.0000	0.8017	0.2430
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	1.0000	0.4259	1.0000	1.0000	1.0000	0.8852	0.2296
4.0000	0.5833	1.0000	1.0000	0.5903	1.0000	0.8347	0.2024
5.0000	1.0000	1.0000	1.0000	1.0000	0.2500	0.8500	0.3000
6.0000	1.0000	1.0000	1.0000	0.5271	1.0000	0.9054	0.1891
7.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	1.0000	1.0000	1.0000	0.9028	0.9806	0.0389
					Avg	0.9258	0.1203

EEGNet	dropout: 0.1	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.3000	0.2750	0.2750	0.3000	0.2850	0.0122
2.0000	0.3125	0.3750	0.3542	0.4167	0.2917	0.3500	0.0445
3.0000	0.3056	0.3056	0.3333	0.3056	0.3889	0.3278	0.0324
4.0000	0.2708	0.3125	0.3333	0.3750	0.3750	0.3333	0.0395
5.0000	0.2500	0.3750	0.3333	0.3333	0.2500	0.3083	0.0500
6.0000	0.3023	0.3182	0.2955	0.2500	0.3864	0.3105	0.0442
7.0000	0.2917	0.3542	0.2917	0.3750	0.2917	0.3208	0.0363
8.0000	0.3000	0.4250	0.4000	0.3500	0.4500	0.3850	0.0539
9.0000	0.2500	0.2917	0.3333	0.4375	0.3750	0.3375	0.0651
10.0000	0.4167	0.3750	0.3333	0.3958	0.3542	0.3750	0.0295
					Avg	0.3333	0.0408

EEGNet	dropout: 0.1	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.1750	0.3000	0.3750	0.1750	0.4000	0.2850	0.0957
2.0000	0.2708	0.1875	0.2708	0.2708	0.3542	0.2708	0.0527
3.0000	0.3889	0.1667	0.1111	0.2500	0.2222	0.2278	0.0936
4.0000	0.3333	0.3958	0.2292	0.2917	0.2917	0.3083	0.0550
5.0000	0.2708	0.2500	0.2500	0.2500	0.2500	0.2542	0.0083
6.0000	0.2273	0.2093	0.1860	0.2326	0.2093	0.2129	0.0164
7.0000	0.3333	0.3750	0.2083	0.3542	0.2292	0.3000	0.0680
8.0000	0.3500	0.3000	0.3500	0.2750	0.3250	0.3200	0.0292
9.0000	0.3125	0.3333	0.2708	0.2292	0.2083	0.2708	0.0475
10.0000	0.2500	0.2708	0.2917	0.5000	0.3958	0.3417	0.0937
					Avg	0.2792	0.0560

Table 8.98: 254 Hz

EEGNet	dropout: 0.25	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.8083	1.0000	0.9250	1.0000	0.6083	0.8683	0.1477
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
5.0000	0.2569	1.0000	1.0000	0.4792	0.9931	0.7458	0.3164
6.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
7.0000	0.2847	0.4861	1.0000	1.0000	1.0000	0.7542	0.3077
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.9368	0.0772

EEGNet	dropout: 0.25	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3000	0.3500	0.2750	0.2500	0.4000	0.3150	0.0539
2.0000	0.3125	0.2917	0.3125	0.3333	0.3750	0.3250	0.0283
3.0000	0.2778	0.2778	0.2500	0.3333	0.3611	0.3000	0.0408
4.0000	0.3333	0.3542	0.3542	0.3542	0.5000	0.3792	0.0610
5.0000	0.2500	0.2917	0.3125	0.2708	0.3333	0.2917	0.0295
6.0000	0.3488	0.3409	0.2955	0.2955	0.2727	0.3107	0.0292
7.0000	0.2500	0.3125	0.3750	0.3542	0.3750	0.3333	0.0475
8.0000	0.2750	0.3750	0.4250	0.4250	0.3750	0.3750	0.0548
9.0000	0.2917	0.4167	0.3125	0.2500	0.3333	0.3208	0.0553
10.0000	0.3125	0.3958	0.4792	0.3542	0.4583	0.4000	0.0624
					Avg	0.3351	0.0463

EEGNet	dropout: 0.25	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.1000	0.1750	0.3000	0.2250	0.2750	0.2150	0.0718
2.0000	0.3750	0.3125	0.2917	0.3542	0.1667	0.3000	0.0729
3.0000	0.3333	0.3056	0.2778	0.2500	0.2500	0.2833	0.0324
4.0000	0.2292	0.2917	0.3750	0.3542	0.3125	0.3125	0.0510
5.0000	0.2500	0.2292	0.2500	0.3125	0.2083	0.2500	0.0349
6.0000	0.2045	0.2558	0.3023	0.3023	0.1860	0.2502	0.0483
7.0000	0.2500	0.2708	0.2292	0.3125	0.2292	0.2583	0.0312
8.0000	0.2250	0.3250	0.3750	0.3250	0.3000	0.3100	0.0490
9.0000	0.2500	0.2292	0.3750	0.2083	0.3333	0.2792	0.0640
10.0000	0.3333	0.3125	0.3125	0.2708	0.2917	0.3042	0.0212
					Avg	0.2763	0.0477

Table 8.99: 254 Hz

EEGNet	dropout: 0.5	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	1.0000	0.9500	0.5833	1.0000	0.9067	0.1628
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	0.5972	1.0000	0.8889	1.0000	0.9653	0.8903	0.1520
5.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
6.0000	0.8295	1.0000	0.2481	1.0000	1.0000	0.8155	0.2913
7.0000	1.0000	0.9722	0.8403	1.0000	1.0000	0.9625	0.0621
8.0000	1.0000	1.0000	1.0000	1.0000	0.2500	0.8500	0.3000
9.0000	0.9792	0.9792	1.0000	1.0000	1.0000	0.9917	0.0102
10.0000	1.0000	0.9444	0.8958	0.9861	1.0000	0.9653	0.0403
					Avg	0.9382	0.1019

EEGNet	dropout: 0.5	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3750	0.3000	0.3250	0.3750	0.2750	0.3300	0.0400
2.0000	0.2708	0.2708	0.3333	0.2917	0.3333	0.3000	0.0283
3.0000	0.3056	0.3333	0.3889	0.4167	0.4722	0.3833	0.0593
4.0000	0.3333	0.3125	0.2917	0.3750	0.3542	0.3333	0.0295
5.0000	0.2917	0.3125	0.3750	0.2917	0.3125	0.3167	0.0306
6.0000	0.2558	0.3182	0.2500	0.3864	0.3864	0.3193	0.0597
7.0000	0.3542	0.3125	0.3750	0.2708	0.3958	0.3417	0.0449
8.0000	0.3250	0.4250	0.3500	0.5000	0.2500	0.3700	0.0857
9.0000	0.3542	0.3958	0.3125	0.2917	0.4167	0.3542	0.0475
10.0000	0.3542	0.3542	0.3958	0.3958	0.3958	0.3792	0.0204
					Avg	0.3428	0.0446

EEGNet	dropout: 0.5	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2000	0.2250	0.3000	0.2500	0.3000	0.2550	0.0400
2.0000	0.3125	0.2292	0.4167	0.2500	0.2917	0.3000	0.0654
3.0000	0.2222	0.1111	0.2778	0.2500	0.2500	0.2222	0.0583
4.0000	0.2708	0.2083	0.2917	0.1667	0.2500	0.2375	0.0449
5.0000	0.1250	0.1458	0.2500	0.2917	0.3333	0.2292	0.0812
6.0000	0.2273	0.2093	0.2558	0.2093	0.1395	0.2082	0.0383
7.0000	0.2500	0.2917	0.2083	0.3125	0.3125	0.2750	0.0404
8.0000	0.2750	0.1500	0.3250	0.1750	0.2500	0.2350	0.0644
9.0000	0.3333	0.3125	0.2292	0.2500	0.3125	0.2875	0.0404
10.0000	0.3542	0.3125	0.2917	0.2708	0.3125	0.3083	0.0276
					Avg	0.2558	0.0501

Table 8.100: 254 Hz

EEGNet	dropout: 0.001	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9583	0.7583	1.0000	0.9417	0.2500	0.7817	0.2785
2.0000	0.9861	0.5903	0.7292	1.0000	0.9931	0.8597	0.1692
3.0000	1.0000	0.2500	0.9444	1.0000	0.9074	0.8204	0.2873
4.0000	0.6944	0.8194	1.0000	0.9514	0.8611	0.8653	0.1066
5.0000	1.0000	0.7361	0.9097	0.9861	0.9722	0.9208	0.0974
6.0000	0.9225	0.6589	0.9922	0.9147	0.8295	0.8636	0.1146
7.0000	1.0000	0.9792	1.0000	1.0000	0.9375	0.9833	0.0243
8.0000	1.0000	0.8083	0.9750	0.9833	1.0000	0.9533	0.0731
9.0000	0.9097	0.9375	0.7431	0.9792	0.9306	0.9000	0.0816
10.0000	0.8472	0.9653	1.0000	0.9236	0.6944	0.8861	0.1085
					Avg	0.8834	0.1341

EEGNet	dropout: 0.001	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3750	0.3000	0.2500	0.3750	0.2500	0.3100	0.0561
2.0000	0.3750	0.3542	0.3542	0.3750	0.2917	0.3500	0.0306
3.0000	0.3333	0.2500	0.3056	0.2778	0.2500	0.2833	0.0324
4.0000	0.3333	0.3750	0.2500	0.3958	0.3542	0.3417	0.0503
5.0000	0.3125	0.3333	0.4375	0.2708	0.2917	0.3292	0.0580
6.0000	0.3256	0.2955	0.2727	0.3409	0.3409	0.3151	0.0269
7.0000	0.2917	0.3333	0.3125	0.3750	0.2917	0.3208	0.0312
8.0000	0.3250	0.4000	0.5500	0.3500	0.2750	0.3800	0.0941
9.0000	0.3542	0.3333	0.2917	0.3542	0.3542	0.3375	0.0243
10.0000	0.3958	0.3333	0.4167	0.3750	0.2917	0.3625	0.0449
					Avg	0.3330	0.0449

EEGNet	dropout: 0.001	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.4000	0.2000	0.2250	0.2500	0.2500	0.2650	0.0700
2.0000	0.3125	0.2500	0.2292	0.3125	0.3125	0.2833	0.0363
3.0000	0.1667	0.2500	0.3056	0.2778	0.3333	0.2667	0.0572
4.0000	0.2917	0.2292	0.2500	0.3125	0.2500	0.2667	0.0306
5.0000	0.2917	0.3125	0.1875	0.2917	0.2083	0.2583	0.0503
6.0000	0.2727	0.3023	0.2558	0.1860	0.2791	0.2592	0.0395
7.0000	0.2708	0.3750	0.2917	0.2292	0.2917	0.2917	0.0475
8.0000	0.3250	0.2500	0.2000	0.2500	0.2250	0.2500	0.0418
9.0000	0.3125	0.2292	0.2708	0.4375	0.2500	0.3000	0.0741
10.0000	0.2083	0.3333	0.3542	0.3542	0.2708	0.3042	0.0568
					Avg	0.2745	0.0504

Table 8.101: 1024 Hz

EEGNet	dropout: 0.002	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.9917	0.9500	0.9417	1.0000	0.9767	0.0255
2.0000	1.0000	0.8611	1.0000	0.9931	0.9931	0.9694	0.0543
3.0000	1.0000	1.0000	1.0000	1.0000	0.9907	0.9981	0.0037
4.0000	0.7569	1.0000	1.0000	0.9375	1.0000	0.9389	0.0941
5.0000	1.0000	1.0000	0.8681	0.9514	0.8958	0.9431	0.0537
6.0000	0.9535	0.9922	0.5426	0.4729	0.4031	0.6729	0.2492
7.0000	0.5903	0.9792	0.9583	0.8750	0.2500	0.7306	0.2775
8.0000	1.0000	1.0000	1.0000	0.9917	0.7000	0.9383	0.1192
9.0000	0.9097	0.3125	0.3125	0.9306	0.9514	0.6833	0.3031
10.0000	0.2500	1.0000	1.0000	0.9444	0.8125	0.8014	0.2841
					Avg	0.8653	0.1464

EEGNet	dropout: 0.002	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3500	0.3000	0.3250	0.3000	0.3000	0.3150	0.0200
2.0000	0.4167	0.2500	0.3542	0.2917	0.2917	0.3208	0.0583
3.0000	0.3889	0.2500	0.3611	0.2500	0.5000	0.3500	0.0940
4.0000	0.2917	0.3750	0.4167	0.3542	0.2708	0.3417	0.0537
5.0000	0.3542	0.3333	0.3333	0.2708	0.2708	0.3125	0.0349
6.0000	0.3256	0.3409	0.3182	0.3182	0.2955	0.3197	0.0147
7.0000	0.3750	0.2917	0.2708	0.3958	0.2500	0.3167	0.0580
8.0000	0.3250	0.3000	0.4750	0.4000	0.3500	0.3700	0.0620
9.0000	0.3542	0.2500	0.2708	0.2917	0.2708	0.2875	0.0358
10.0000	0.2500	0.4792	0.3333	0.3333	0.4375	0.3667	0.0819
					Avg	0.3300	0.0513

EEGNet	dropout: 0.002	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.3000	0.3500	0.2750	0.2500	0.2950	0.0332
2.0000	0.3750	0.3542	0.2292	0.3125	0.2292	0.3000	0.0612
3.0000	0.2500	0.2500	0.1389	0.2222	0.3333	0.2389	0.0624
4.0000	0.2292	0.2917	0.3333	0.3333	0.3333	0.3042	0.0408
5.0000	0.1875	0.2083	0.1875	0.1250	0.2708	0.1958	0.0468
6.0000	0.2955	0.3256	0.2093	0.1860	0.3023	0.2637	0.0554
7.0000	0.2708	0.1667	0.2917	0.3542	0.2500	0.2667	0.0610
8.0000	0.3250	0.3250	0.2250	0.4500	0.3250	0.3300	0.0714
9.0000	0.2083	0.2292	0.2708	0.2083	0.2708	0.2375	0.0283
10.0000	0.2500	0.3542	0.2500	0.3542	0.2917	0.3000	0.0468
					Avg	0.2732	0.0507

Table 8.102: 1024 Hz

EEGNet	dropout: 0.01	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9833	0.8417	0.8167	0.9000	0.2833	0.7650	0.2476
2.0000	0.8264	0.7778	0.9931	0.4722	0.9514	0.8042	0.1837
3.0000	0.9907	1.0000	0.9630	1.0000	0.9815	0.9870	0.0139
4.0000	0.8750	0.4375	0.9722	1.0000	0.6597	0.7889	0.2125
5.0000	0.9861	0.6528	0.9097	0.8472	1.0000	0.8792	0.1259
6.0000	0.9845	0.4884	0.9612	0.9690	0.9845	0.8775	0.1948
7.0000	1.0000	1.0000	0.9861	0.9931	1.0000	0.9958	0.0056
8.0000	0.9917	0.9333	1.0000	0.8750	1.0000	0.9600	0.0493
9.0000	0.9792	0.8750	1.0000	1.0000	0.9653	0.9639	0.0464
10.0000	0.8750	0.9028	1.0000	0.8403	0.9931	0.9222	0.0639
					Avg	0.8944	0.1143

EEGNet	dropout: 0.01	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3000	0.3000	0.3250	0.3000	0.2750	0.3000	0.0158
2.0000	0.3333	0.3125	0.3958	0.3333	0.3125	0.3375	0.0306
3.0000	0.3611	0.3611	0.2500	0.3889	0.3333	0.3389	0.0478
4.0000	0.3542	0.3125	0.3542	0.3958	0.3333	0.3500	0.0276
5.0000	0.2917	0.3750	0.3542	0.3125	0.3542	0.3375	0.0306
6.0000	0.2791	0.2500	0.2727	0.2955	0.2500	0.2695	0.0175
7.0000	0.3125	0.2708	0.2917	0.3542	0.3333	0.3125	0.0295
8.0000	0.3000	0.4750	0.3750	0.4000	0.3250	0.3750	0.0612
9.0000	0.2917	0.3750	0.2500	0.3125	0.3958	0.3250	0.0537
10.0000	0.3750	0.3333	0.3333	0.3750	0.2917	0.3417	0.0312
					Avg	0.3288	0.0346

EEGNet	dropout: 0.01	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2250	0.2250	0.2750	0.4000	0.2500	0.2750	0.0652
2.0000	0.2708	0.2500	0.1250	0.2292	0.2292	0.2208	0.0503
3.0000	0.1389	0.1944	0.2778	0.2778	0.2500	0.2278	0.0539
4.0000	0.2917	0.3333	0.2917	0.3333	0.2500	0.3000	0.0312
5.0000	0.2500	0.2292	0.2708	0.2083	0.2500	0.2417	0.0212
6.0000	0.2727	0.2326	0.2558	0.1395	0.1628	0.2127	0.0523
7.0000	0.2500	0.2917	0.3125	0.2292	0.1667	0.2500	0.0510
8.0000	0.3750	0.2500	0.3750	0.2000	0.3750	0.3150	0.0752
9.0000	0.2292	0.1875	0.2083	0.2500	0.2292	0.2208	0.0212
10.0000	0.1875	0.3333	0.3125	0.2500	0.3125	0.2792	0.0537
					Avg	0.2543	0.0475

Table 8.103: 1024 Hz

EEGNet	dropout: 0.1	**Train**					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.6083	0.9833	0.8583	1.0000	0.9833	0.8867	0.1482
2.0000	0.2500	0.9722	1.0000	1.0000	0.8542	0.8153	0.2877
3.0000	0.9722	0.6759	1.0000	0.7500	0.8704	0.8537	0.1250
4.0000	0.2500	0.9722	0.9444	1.0000	0.9236	0.8181	0.2852
5.0000	1.0000	1.0000	0.2500	0.8333	0.7222	0.7611	0.2764
6.0000	0.9612	0.9147	1.0000	0.9845	1.0000	0.9721	0.0320
7.0000	1.0000	0.9861	0.8889	0.2500	0.9861	0.8222	0.2889
8.0000	1.0000	1.0000	0.6083	1.0000	0.9750	0.9167	0.1545
9.0000	0.8333	0.9653	0.9514	0.9514	0.3403	0.8083	0.2389
10.0000	0.8611	1.0000	0.7986	0.9444	1.0000	0.9208	0.0795
					Avg	0.8575	0.1916

EEGNet	dropout: 0.1	**Validation**					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3750	0.3750	0.3000	0.3750	0.2750	0.3400	0.0436
2.0000	0.2500	0.3542	0.3125	0.4375	0.3750	0.3458	0.0626
3.0000	0.3333	0.2778	0.3889	0.3333	0.3889	0.3444	0.0416
4.0000	0.2500	0.3125	0.3333	0.2917	0.2708	0.2917	0.0295
5.0000	0.2917	0.3958	0.2500	0.2708	0.3333	0.3083	0.0517
6.0000	0.3721	0.3182	0.3182	0.3409	0.2955	0.3290	0.0259
7.0000	0.3125	0.4167	0.3333	0.2500	0.3542	0.3333	0.0543
8.0000	0.3250	0.3500	0.3000	0.3250	0.4000	0.3400	0.0339
9.0000	0.3542	0.2917	0.3125	0.3333	0.3333	0.3250	0.0212
10.0000	0.3333	0.2917	0.3958	0.2917	0.3958	0.3417	0.0468
					Avg	0.3299	0.0411

EEGNet	dropout: 0.1	**Test**					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.2000	0.2000	0.1500	0.1750	0.2050	0.0510
2.0000	0.2500	0.2292	0.2708	0.2917	0.3125	0.2708	0.0295
3.0000	0.4167	0.3056	0.3333	0.2500	0.3056	0.3222	0.0544
4.0000	0.2500	0.3333	0.3125	0.2292	0.2708	0.2792	0.0386
5.0000	0.3542	0.1667	0.2500	0.2500	0.2292	0.2500	0.0604
6.0000	0.2500	0.2791	0.2093	0.1860	0.1860	0.2221	0.0368
7.0000	0.2708	0.2083	0.2917	0.2500	0.3750	0.2792	0.0553
8.0000	0.3500	0.2750	0.3000	0.2250	0.3000	0.2900	0.0406
9.0000	0.1458	0.2500	0.2917	0.1875	0.2917	0.2333	0.0580
10.0000	0.2292	0.3125	0.2500	0.2917	0.2708	0.2708	0.0295
					Avg	0.2623	0.0454

Table 8.104: 1024 Hz

EEGNet	dropout: 0.25	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.9667	0.9000	0.4583	0.9833	0.9917	0.8600	0.2034
2.0000	0.8889	1.0000	1.0000	0.3681	0.8542	0.8222	0.2345
3.0000	0.6667	0.2963	0.2500	0.9907	0.4074	0.5222	0.2752
4.0000	0.9653	0.8681	0.7431	1.0000	0.7292	0.8611	0.1109
5.0000	1.0000	0.9931	0.9722	0.4722	0.9931	0.8861	0.2072
6.0000	0.5349	0.8140	0.9612	0.2481	0.9922	0.7101	0.2820
7.0000	0.6667	0.5903	1.0000	0.9931	0.8194	0.8139	0.1664
8.0000	0.8667	1.0000	0.4250	0.8417	0.9083	0.8083	0.1991
9.0000	0.2500	0.9931	0.9444	0.9097	0.9306	0.8056	0.2791
10.0000	0.8542	0.9444	0.9722	0.8611	0.7014	0.8667	0.0945
					Avg	0.7956	0.2052

EEGNet	dropout: 0.25	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3000	0.2750	0.3750	0.2750	0.2500	0.2950	0.0430
2.0000	0.3333	0.4167	0.3333	0.2917	0.2917	0.3333	0.0456
3.0000	0.2778	0.2500	0.2500	0.2500	0.3333	0.2722	0.0324
4.0000	0.2917	0.3542	0.3542	0.3750	0.2917	0.3333	0.0349
5.0000	0.3125	0.4167	0.2917	0.2917	0.4167	0.3458	0.0583
6.0000	0.2558	0.2955	0.2955	0.2500	0.2955	0.2784	0.0209
7.0000	0.3542	0.4167	0.3542	0.3333	0.3120	0.3541	0.0350
8.0000	0.3250	0.3000	0.3250	0.4000	0.4500	0.3600	0.0561
9.0000	0.2917	0.2917	0.3125	0.2917	0.3333	0.3042	0.0167
10.0000	0.2708	0.3125	0.2708	0.4167	0.3542	0.3250	0.0553
					Avg	0.3201	0.0398

EEGNet	dropout: 0.25	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.3750	0.3000	0.2250	0.2250	0.2750	0.0570
2.0000	0.3542	0.2917	0.2292	0.2292	0.2500	0.2708	0.0475
3.0000	0.2222	0.1944	0.2500	0.2222	0.2222	0.2222	0.0176
4.0000	0.2292	0.2708	0.3125	0.3125	0.1667	0.2583	0.0553
5.0000	0.3333	0.2083	0.3333	0.2917	0.2292	0.2792	0.0520
6.0000	0.2273	0.3488	0.1163	0.2558	0.2558	0.2408	0.0746
7.0000	0.2292	0.1458	0.1042	0.2708	0.1667	0.1833	0.0595
8.0000	0.3000	0.2250	0.2500	0.2250	0.3750	0.2750	0.0570
9.0000	0.2500	0.2500	0.2708	0.2917	0.2500	0.2625	0.0167
10.0000	0.3542	0.3958	0.2917	0.2500	0.3333	0.3250	0.0503
					Avg	0.2592	0.0488

Table 8.105: 1024 Hz

EEGNet	dropout: 0.5	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.5583	0.8917	0.9833	0.8000	0.9667	0.8400	0.1550
2.0000	0.6875	0.8125	0.3958	0.7153	0.9514	0.7125	0.1833
3.0000	0.8889	0.3148	0.8704	0.3056	0.2500	0.5259	0.2897
4.0000	0.8750	0.9653	0.7847	0.9375	0.8542	0.8833	0.0637
5.0000	0.8958	1.0000	0.8819	0.8819	0.8958	0.9111	0.0449
6.0000	0.7984	0.8450	0.8140	0.5969	0.9457	0.8000	0.1138
7.0000	0.7708	1.0000	0.8403	0.2500	0.9722	0.7667	0.2717
8.0000	0.8833	0.9750	0.8833	0.9083	0.9750	0.9250	0.0418
9.0000	0.9167	0.8611	0.3611	0.9792	1.0000	0.8236	0.2363
10.0000	0.9653	0.7014	0.9653	0.6250	0.6389	0.7792	0.1541
					Avg	0.7967	0.1554

EEGNet	dropout: 0.5	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3500	0.3250	0.3750	0.2750	0.4000	0.3450	0.0430
2.0000	0.3125	0.3125	0.3125	0.3542	0.2917	0.3167	0.0204
3.0000	0.3889	0.2778	0.2500	0.2778	0.2500	0.2889	0.0515
4.0000	0.3333	0.3542	0.3542	0.3125	0.3333	0.3375	0.0156
5.0000	0.3750	0.3125	0.3333	0.2917	0.3333	0.3292	0.0276
6.0000	0.3256	0.2955	0.3182	0.2727	0.2955	0.3015	0.0188
7.0000	0.2708	0.2500	0.2708	0.2500	0.3333	0.2750	0.0306
8.0000	0.3500	0.3250	0.2750	0.3000	0.3500	0.3200	0.0292
9.0000	0.3333	0.2708	0.2708	0.3333	0.3542	0.3125	0.0349
10.0000	0.3958	0.3750	0.3125	0.3750	0.3542	0.3625	0.0283
					Avg	0.3189	0.0300

EEGNet	dropout: 0.5	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2250	0.3000	0.2750	0.1250	0.3000	0.2450	0.0660
2.0000	0.2500	0.2083	0.3750	0.2708	0.2083	0.2625	0.0612
3.0000	0.2222	0.2500	0.2500	0.2778	0.2500	0.2500	0.0176
4.0000	0.2292	0.2708	0.2500	0.3333	0.1458	0.2458	0.0610
5.0000	0.1250	0.2083	0.2292	0.2292	0.2083	0.2000	0.0386
6.0000	0.2273	0.3023	0.2093	0.2558	0.1860	0.2362	0.0402
7.0000	0.2708	0.1250	0.1250	0.2500	0.1667	0.1875	0.0618
8.0000	0.3000	0.2250	0.3250	0.1750	0.1500	0.2350	0.0682
9.0000	0.2083	0.2500	0.1875	0.3750	0.2083	0.2458	0.0677
10.0000	0.2708	0.2500	0.2917	0.2500	0.3125	0.2750	0.0243
					Avg	0.2383	0.0507

Table 8.106: 1024 Hz

EEGNet	Interval: full	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	0.9917	1.0000	1.0000	0.9983	0.0033
2.0000	1.0000	0.9375	1.0000	1.0000	0.9931	0.9861	0.0245
3.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
4.0000	0.2500	1.0000	1.0000	1.0000	1.0000	0.8500	0.3000
5.0000	1.0000	0.3056	0.9444	1.0000	1.0000	0.8500	0.2731
6.0000	1.0000	0.5969	1.0000	1.0000	0.5271	0.8248	0.2157
7.0000	1.0000	1.0000	1.0000	1.0000	0.4028	0.8806	0.2389
8.0000	0.5083	1.0000	1.0000	1.0000	1.0000	0.9017	0.1967
9.0000	1.0000	1.0000	1.0000	1.0000	0.3194	0.8639	0.2722
10.0000	1.0000	1.0000	0.7847	1.0000	1.0000	0.9569	0.0861
					Avg	0.9112	0.1610

EEGNet	Interval: full	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.4250	0.4000	0.2500	0.3500	0.3500	0.0612
2.0000	0.2917	0.3958	0.3125	0.3333	0.3333	0.3333	0.0349
3.0000	0.3333	0.3889	0.3889	0.3611	0.3333	0.3611	0.0248
4.0000	0.2500	0.2917	0.4792	0.3542	0.3750	0.3500	0.0784
5.0000	0.2917	0.2500	0.2917	0.3958	0.4375	0.3333	0.0710
6.0000	0.3721	0.2500	0.2727	0.2500	0.3182	0.2926	0.0469
7.0000	0.3542	0.2500	0.2917	0.4167	0.2708	0.3167	0.0610
8.0000	0.3250	0.4000	0.3500	0.3750	0.3750	0.3650	0.0255
9.0000	0.3333	0.2917	0.3542	0.4167	0.2708	0.3333	0.0510
10.0000	0.2708	0.3333	0.3750	0.3750	0.3958	0.3500	0.0445
					Avg	0.3385	0.0499

EEGNet	Interval: full	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.1500	0.3500	0.2250	0.2500	0.2550	0.0678
2.0000	0.2292	0.3333	0.3333	0.2500	0.2083	0.2708	0.0527
3.0000	0.2500	0.3056	0.2500	0.2222	0.2500	0.2556	0.0272
4.0000	0.2500	0.2500	0.2708	0.1250	0.3958	0.2583	0.0860
5.0000	0.2917	0.2500	0.1667	0.2917	0.2708	0.2542	0.0464
6.0000	0.2727	0.2326	0.2791	0.3721	0.2326	0.2778	0.0510
7.0000	0.2292	0.2500	0.2292	0.2292	0.2500	0.2375	0.0102
8.0000	0.3500	0.3250	0.3500	0.3000	0.2000	0.3050	0.0557
9.0000	0.2292	0.3125	0.2500	0.3125	0.2500	0.2708	0.0349
10.0000	0.3542	0.3125	0.2708	0.2083	0.2708	0.2833	0.0486
					Avg	0.2668	0.0480

Table 8.107: 254 Hz

EEGNet	Interval: action	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	0.8250	1.0000	1.0000	0.9650	0.0700
2.0000	1.0000	0.4722	1.0000	1.0000	0.9861	0.8917	0.2098
3.0000	0.2500	0.2500	0.9722	1.0000	0.4167	0.5778	0.3390
4.0000	1.0000	1.0000	1.0000	0.9653	1.0000	0.9931	0.0139
5.0000	1.0000	0.9514	1.0000	1.0000	1.0000	0.9903	0.0194
6.0000	1.0000	0.8760	1.0000	0.4341	0.3721	0.7364	0.2766
7.0000	1.0000	1.0000	0.2639	1.0000	0.2708	0.7069	0.3589
8.0000	1.0000	1.0000	0.9917	1.0000	0.4583	0.8900	0.2159
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	0.9722	0.7361	1.0000	1.0000	0.9653	0.9347	0.1003
					Avg	0.8686	0.1604

EEGNet	Interval: action	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.3250	0.3500	0.3750	0.3250	0.3250	0.0418
2.0000	0.3542	0.2917	0.3125	0.3542	0.3542	0.3333	0.0264
3.0000	0.2500	0.2500	0.3056	0.2778	0.3056	0.2778	0.0248
4.0000	0.3125	0.3125	0.2917	0.3542	0.3125	0.3167	0.0204
5.0000	0.3333	0.2500	0.3542	0.3333	0.3750	0.3292	0.0425
6.0000	0.3721	0.2500	0.2727	0.2955	0.2500	0.2881	0.0453
7.0000	0.3958	0.3750	0.2500	0.3333	0.2500	0.3208	0.0612
8.0000	0.3250	0.3250	0.3250	0.4000	0.2750	0.3300	0.0400
9.0000	0.3333	0.3958	0.3125	0.3542	0.2917	0.3375	0.0358
10.0000	0.3542	0.2917	0.3958	0.2917	0.2708	0.3208	0.0468
					Avg	0.3179	0.0385

EEGNet	Interval: action	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2000	0.2750	0.2250	0.2500	0.2000	0.2300	0.0292
2.0000	0.1250	0.3542	0.3958	0.2500	0.4167	0.3083	0.1082
3.0000	0.2500	0.2500	0.3056	0.2500	0.1389	0.2389	0.0544
4.0000	0.2708	0.2708	0.2917	0.2083	0.0625	0.2208	0.0840
5.0000	0.3125	0.1458	0.2292	0.1875	0.3333	0.2417	0.0717
6.0000	0.1818	0.2558	0.2558	0.2326	0.2326	0.2317	0.0270
7.0000	0.1875	0.2708	0.2292	0.2083	0.2500	0.2292	0.0295
8.0000	0.3750	0.2500	0.2250	0.3750	0.2750	0.3000	0.0632
9.0000	0.2708	0.1042	0.1458	0.2708	0.3333	0.2250	0.0858
10.0000	0.3958	0.2708	0.2708	0.2500	0.1875	0.2750	0.0677
					Avg	0.2501	0.0621

Table 8.108: 254 Hz

EEGNet	Interval: full	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	1.0000	1.0000	0.7167	1.0000	0.9433	0.1133
2.0000	0.6458	1.0000	1.0000	0.6389	1.0000	0.8569	0.1752
3.0000	0.2593	0.9907	0.3796	0.7222	0.7407	0.6185	0.2647
4.0000	0.9444	1.0000	1.0000	0.2500	1.0000	0.8389	0.2952
5.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
6.0000	1.0000	1.0000	1.0000	0.3721	1.0000	0.8744	0.2512
7.0000	1.0000	0.2500	1.0000	1.0000	0.3750	0.7250	0.3391
8.0000	0.5083	1.0000	0.9500	1.0000	1.0000	0.8917	0.1926
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.8749	0.1631

EEGNet	Interval: full	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2750	0.2750	0.3250	0.2500	0.2750	0.2800	0.0245
2.0000	0.3125	0.3125	0.3750	0.2708	0.3958	0.3333	0.0456
3.0000	0.2500	0.3611	0.2500	0.2778	0.3056	0.2889	0.0416
4.0000	0.3333	0.3333	0.2917	0.2500	0.2917	0.3000	0.0312
5.0000	0.3958	0.3125	0.3125	0.2708	0.3125	0.3208	0.0408
6.0000	0.2791	0.2955	0.3182	0.2500	0.2727	0.2831	0.0228
7.0000	0.2500	0.2500	0.2500	0.2917	0.2500	0.2583	0.0167
8.0000	0.3250	0.2750	0.4000	0.2750	0.3750	0.3300	0.0510
9.0000	0.4375	0.3958	0.2708	0.4583	0.3125	0.3750	0.0722
10.0000	0.3958	0.3333	0.3125	0.3542	0.3333	0.3458	0.0283
					Avg	0.3115	0.0375

EEGNet	Interval: full	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2000	0.2250	0.2750	0.2250	0.2750	0.2400	0.0300
2.0000	0.2917	0.2500	0.2083	0.2500	0.2708	0.2542	0.0276
3.0000	0.2500	0.2778	0.2500	0.2222	0.2778	0.2556	0.0208
4.0000	0.3125	0.1875	0.2292	0.2500	0.3333	0.2625	0.0537
5.0000	0.3125	0.1667	0.2917	0.2500	0.2292	0.2500	0.0510
6.0000	0.2727	0.1395	0.2326	0.2558	0.2791	0.2359	0.0508
7.0000	0.1250	0.2500	0.3542	0.2708	0.2500	0.2500	0.0734
8.0000	0.2750	0.3250	0.3250	0.3000	0.4750	0.3400	0.0700
9.0000	0.2292	0.2292	0.3750	0.3542	0.2917	0.2958	0.0610
10.0000	0.2500	0.4167	0.3333	0.3125	0.2083	0.3042	0.0717
					Avg	0.2688	0.0510

Table 8.109: 1024 Hz

EEGNet	Interval: action	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	1.0000	0.7583	1.0000	1.0000	0.9517	0.0967
2.0000	1.0000	0.6875	0.7986	1.0000	1.0000	0.8972	0.1307
3.0000	0.6852	0.5833	1.0000	1.0000	1.0000	0.8537	0.1820
4.0000	1.0000	1.0000	0.9931	1.0000	1.0000	0.9986	0.0028
5.0000	1.0000	0.8681	1.0000	1.0000	1.0000	0.9736	0.0528
6.0000	0.2558	1.0000	1.0000	0.8915	0.2558	0.6806	0.3491
7.0000	1.0000	1.0000	0.4236	1.0000	0.2569	0.7361	0.3275
8.0000	0.2833	1.0000	0.5083	0.7167	1.0000	0.7017	0.2795
9.0000	1.0000	1.0000	0.8472	1.0000	1.0000	0.9694	0.0611
10.0000	1.0000	0.5139	1.0000	1.0000	0.8125	0.8653	0.1901
					Avg	0.8628	0.1672

EEGNet	Interval: action	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.2500	0.2750	0.3000	0.3000	0.3000	0.2850	0.0200
2.0000	0.3125	0.2500	0.3125	0.3958	0.2917	0.3125	0.0475
3.0000	0.2778	0.3056	0.2778	0.2500	0.3056	0.2833	0.0208
4.0000	0.3542	0.3333	0.3125	0.3542	0.2708	0.3250	0.0312
5.0000	0.2500	0.2917	0.2917	0.2708	0.3333	0.2875	0.0276
6.0000	0.2791	0.2500	0.3182	0.2500	0.2500	0.2695	0.0268
7.0000	0.2708	0.2500	0.2917	0.2500	0.2500	0.2625	0.0167
8.0000	0.2500	0.3750	0.2500	0.3250	0.2500	0.2900	0.0515
9.0000	0.3542	0.3750	0.2708	0.2708	0.4167	0.3375	0.0580
10.0000	0.3750	0.2500	0.3542	0.2708	0.2917	0.3083	0.0482
					Avg	0.2961	0.0348

EEGNet	Interval: action	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.1500	0.2250	0.2000	0.1500	0.1750	0.1800	0.0292
2.0000	0.3125	0.1875	0.1667	0.2708	0.2083	0.2292	0.0543
3.0000	0.2778	0.2500	0.3611	0.2500	0.1389	0.2556	0.0711
4.0000	0.3125	0.2083	0.2708	0.3125	0.2292	0.2667	0.0425
5.0000	0.3125	0.2083	0.2500	0.2083	0.2917	0.2542	0.0425
6.0000	0.2500	0.3256	0.1860	0.3023	0.2558	0.2640	0.0482
7.0000	0.2917	0.2708	0.2500	0.1667	0.2500	0.2458	0.0425
8.0000	0.2500	0.3000	0.3000	0.3000	0.2500	0.2800	0.0245
9.0000	0.3125	0.1875	0.1875	0.2083	0.2708	0.2333	0.0500
10.0000	0.1458	0.2500	0.1667	0.1667	0.2500	0.1958	0.0449
					Avg	0.2405	0.0450

Table 8.110: 1024 Hz

EEGNet	LR = 0.1	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.7583	0.9250	0.9000	0.9667	0.9250	0.8950	0.0716
2.0000	0.8819	0.9097	0.6111	0.9931	0.9583	0.8708	0.1354
3.0000	0.9630	0.8704	0.6667	0.5093	0.9722	0.7963	0.1808
4.0000	0.4444	0.6319	0.9792	0.7292	0.9792	0.7528	0.2063
5.0000	0.6319	0.6944	0.9722	0.9653	0.8819	0.8292	0.1406
6.0000	0.9922	0.2636	0.8372	0.8760	0.3876	0.6713	0.2895
7.0000	0.9583	0.7153	0.3819	0.9444	0.9306	0.7861	0.2209
8.0000	0.9167	0.9333	0.7083	0.9333	0.9417	0.8867	0.0895
9.0000	0.4236	0.9792	0.9653	0.9097	0.3889	0.7333	0.2683
10.0000	0.9444	0.6597	0.8958	0.8611	0.9167	0.8556	0.1016
					Avg	0.8077	0.1705

EEGNet	LR = 0.1	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4750	0.3750	0.3250	0.3000	0.3500	0.3650	0.0604
2.0000	0.3750	0.3958	0.3333	0.3542	0.3750	0.3667	0.0212
3.0000	0.3889	0.3889	0.3889	0.3889	0.3889	0.3889	0.0000
4.0000	0.3542	0.3333	0.3542	0.4375	0.4167	0.3792	0.0404
5.0000	0.4375	0.3958	0.3333	0.3125	0.3750	0.3708	0.0445
6.0000	0.3953	0.2955	0.3864	0.3864	0.3182	0.3563	0.0412
7.0000	0.3542	0.3750	0.3750	0.3333	0.3958	0.3667	0.0212
8.0000	0.4250	0.4250	0.4500	0.4250	0.4250	0.4300	0.0100
9.0000	0.3333	0.3542	0.3750	0.3333	0.3750	0.3542	0.0186
10.0000	0.3750	0.3333	0.4167	0.3958	0.4167	0.3875	0.0312
					Avg	0.3765	0.0289

EEGNet	LR = 0.1	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.1500	0.1750	0.1500	0.3750	0.2250	0.0880
2.0000	0.2083	0.2708	0.3125	0.2500	0.2917	0.2667	0.0358
3.0000	0.3333	0.3056	0.2778	0.2222	0.2500	0.2778	0.0393
4.0000	0.2292	0.2292	0.3750	0.2500	0.2500	0.2667	0.0550
5.0000	0.2500	0.2708	0.3542	0.3125	0.2500	0.2875	0.0404
6.0000	0.3182	0.2558	0.2558	0.1860	0.1395	0.2311	0.0620
7.0000	0.2708	0.2292	0.2500	0.3125	0.2500	0.2625	0.0283
8.0000	0.3250	0.4000	0.2000	0.2500	0.3000	0.2950	0.0678
9.0000	0.2917	0.2917	0.3333	0.3125	0.2292	0.2917	0.0349
10.0000	0.3750	0.3125	0.3750	0.3750	0.3125	0.3500	0.0306
					Avg	0.2754	0.0482

Table 8.111: 254 Hz

EEGNet	LR = 0.01	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.5167	0.9750	0.9250	1.0000	0.8833	0.1854
2.0000	0.9931	1.0000	1.0000	1.0000	1.0000	0.9986	0.0028
3.0000	0.8796	0.9537	1.0000	0.4907	1.0000	0.8648	0.1921
4.0000	0.9931	1.0000	0.9028	1.0000	0.9514	0.9694	0.0379
5.0000	0.9236	0.9861	0.9097	1.0000	0.9861	0.9611	0.0369
6.0000	0.9845	1.0000	0.9845	1.0000	0.9767	0.9891	0.0093
7.0000	0.9375	1.0000	0.9861	0.7986	1.0000	0.9444	0.0765
8.0000	0.9667	0.9667	0.9833	0.9417	0.9750	0.9667	0.0139
9.0000	1.0000	1.0000	1.0000	0.9722	1.0000	0.9944	0.0111
10.0000	0.9861	0.9792	0.7083	0.9653	1.0000	0.9278	0.1103
					Avg	0.9500	0.0676

EEGNet	LR = 0.01	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3500	0.3500	0.3500	0.4500	0.3250	0.3650	0.0436
2.0000	0.3958	0.2917	0.3125	0.4375	0.3958	0.3667	0.0553
3.0000	0.2500	0.3333	0.3333	0.2778	0.2778	0.2944	0.0333
4.0000	0.4583	0.3750	0.3542	0.3125	0.3542	0.3708	0.0482
5.0000	0.2500	0.3542	0.3958	0.3333	0.2917	0.3250	0.0503
6.0000	0.3023	0.4091	0.3636	0.3864	0.4091	0.3741	0.0396
7.0000	0.3125	0.4167	0.2500	0.3542	0.3542	0.3375	0.0550
8.0000	0.4000	0.3500	0.3250	0.3750	0.4000	0.3700	0.0292
9.0000	0.3125	0.2500	0.3750	0.3333	0.3958	0.3333	0.0510
10.0000	0.3333	0.3958	0.3958	0.3125	0.4167	0.3708	0.0404
					Avg	0.3508	0.0446

EEGNet	LR = 0.01	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.1750	0.1250	0.1250	0.2500	0.3000	0.1950	0.0696
2.0000	0.3750	0.3125	0.3333	0.2292	0.2083	0.2917	0.0632
3.0000	0.2778	0.1944	0.1389	0.1667	0.1111	0.1778	0.0572
4.0000	0.2292	0.3542	0.2500	0.2708	0.2917	0.2792	0.0429
5.0000	0.2708	0.2500	0.2292	0.2083	0.2083	0.2333	0.0243
6.0000	0.2045	0.2326	0.3256	0.2558	0.2791	0.2595	0.0413
7.0000	0.2708	0.2500	0.2708	0.3125	0.1667	0.2542	0.0482
8.0000	0.3000	0.3750	0.2750	0.3000	0.4250	0.3350	0.0561
9.0000	0.3958	0.2708	0.2083	0.3542	0.1875	0.2833	0.0808
10.0000	0.3125	0.3333	0.3333	0.3750	0.2917	0.3292	0.0276
					Avg	0.2638	0.0511

Table 8.112: 254 Hz

EEGNet	LR = 0.001	Train					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	1.0000	1.0000	1.0000	1.0000	0.6333	0.9267	0.1467
2.0000	1.0000	0.9722	1.0000	1.0000	1.0000	0.9944	0.0111
3.0000	1.0000	0.9537	0.4167	1.0000	1.0000	0.8741	0.2294
4.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
5.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
6.0000	0.5814	1.0000	0.5349	1.0000	0.2481	0.6729	0.2905
7.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.9468	0.0678

EEGNet	LR = 0.001	Validation					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3500	0.4000	0.3250	0.4000	0.2750	0.3500	0.0474
2.0000	0.3958	0.2500	0.3333	0.2917	0.3125	0.3167	0.0482
3.0000	0.3333	0.3611	0.2778	0.3611	0.3611	0.3389	0.0324
4.0000	0.3750	0.3333	0.3542	0.2708	0.3750	0.3417	0.0386
5.0000	0.3125	0.3333	0.3125	0.3125	0.3333	0.3208	0.0102
6.0000	0.3023	0.2955	0.2727	0.2955	0.2500	0.2832	0.0194
7.0000	0.3542	0.2917	0.3333	0.3542	0.3958	0.3458	0.0339
8.0000	0.5000	0.3000	0.4750	0.2750	0.4000	0.3900	0.0903
9.0000	0.2917	0.3542	0.3125	0.3542	0.3542	0.3333	0.0264
10.0000	0.4792	0.2917	0.4375	0.3542	0.5208	0.4167	0.0833
					Avg	0.3437	0.0430

EEGNet	LR = 0.001	Test					
Subject	Fold1	Fold2	Fold3	Fold4	Fold5	Avg Acc	STD dev
1.0000	0.3500	0.1750	0.2250	0.3250	0.2750	0.2700	0.0640
2.0000	0.3542	0.2292	0.3333	0.3125	0.2708	0.3000	0.0449
3.0000	0.3611	0.1944	0.2222	0.1111	0.4167	0.2611	0.1119
4.0000	0.3125	0.1875	0.2917	0.2917	0.2500	0.2667	0.0445
5.0000	0.2500	0.2500	0.2708	0.2917	0.3333	0.2792	0.0312
6.0000	0.2273	0.2791	0.2326	0.2093	0.2558	0.2408	0.0242
7.0000	0.2292	0.2500	0.3542	0.3333	0.1875	0.2708	0.0632
8.0000	0.2500	0.3500	0.3500	0.2250	0.3500	0.3050	0.0557
9.0000	0.2500	0.3125	0.2708	0.2708	0.2708	0.2750	0.0204
10.0000	0.2708	0.2500	0.3333	0.2917	0.1667	0.2625	0.0553
					Avg	0.2731	0.0515

Table 8.113: 254 Hz

EEGNet	LR = 0.0001	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	0.9833	0.6833	1.0000	0.9333	0.1252
2.0000	1.0000	1.0000	1.0000	0.9583	0.9653	0.9847	0.0188
3.0000	1.0000	1.0000	1.0000	1.0000	0.7593	0.9519	0.0963
4.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
5.0000	0.9306	0.9653	1.0000	1.0000	1.0000	0.9792	0.0278
6.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
7.0000	1.0000	1.0000	1.0000	0.9583	1.0000	0.9917	0.0167
8.0000	0.9583	1.0000	1.0000	1.0000	1.0000	0.9917	0.0167
9.0000	1.0000	0.9514	1.0000	0.9931	1.0000	0.9889	0.0189
10.0000	1.0000	1.0000	0.9861	1.0000	1.0000	0.9972	0.0056
					Avg	0.9819	0.0326

EEGNet	LR = 0.0001	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4000	0.3500	0.3250	0.3500	0.4000	0.3650	0.0300
2.0000	0.3750	0.3542	0.4583	0.2917	0.2917	0.3542	0.0618
3.0000	0.2500	0.3611	0.3056	0.4167	0.3056	0.3278	0.0567
4.0000	0.2917	0.3125	0.3542	0.4167	0.3333	0.3417	0.0429
5.0000	0.4167	0.2917	0.3333	0.2917	0.3542	0.3375	0.0464
6.0000	0.2558	0.2727	0.3182	0.2727	0.2727	0.2784	0.0209
7.0000	0.3333	0.4375	0.3333	0.3125	0.2917	0.3417	0.0503
8.0000	0.3500	0.3250	0.4000	0.2750	0.4750	0.3650	0.0682
9.0000	0.3333	0.3750	0.3958	0.3333	0.4583	0.3792	0.0464
10.0000	0.3750	0.3333	0.4583	0.3958	0.3125	0.3750	0.0510
					Avg	0.3465	0.0475

EEGNet	LR = 0.0001	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3250	0.2750	0.2750	0.2250	0.3000	0.2800	0.0332
2.0000	0.3333	0.2917	0.2917	0.3542	0.2708	0.3083	0.0306
3.0000	0.2778	0.3611	0.2222	0.1944	0.3056	0.2722	0.0593
4.0000	0.3333	0.3125	0.1667	0.2083	0.2708	0.2583	0.0626
5.0000	0.2083	0.2292	0.3125	0.2500	0.2917	0.2583	0.0386
6.0000	0.2045	0.1628	0.2558	0.2791	0.2558	0.2316	0.0422
7.0000	0.1875	0.3125	0.3542	0.3542	0.2917	0.3000	0.0612
8.0000	0.2250	0.3250	0.2000	0.3250	0.3000	0.2750	0.0524
9.0000	0.3542	0.2708	0.3542	0.2708	0.2083	0.2917	0.0559
10.0000	0.2708	0.3333	0.2292	0.3958	0.3542	0.3167	0.0595
					Avg	0.2792	0.0496

Table 8.114: 254 Hz

EEGNet	LR: 0.1	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.9083	0.9667	0.9000	0.3000	0.6417	0.7433	0.2484
2.0000	0.9861	0.9514	0.9792	0.8750	0.9722	0.9528	0.0406
3.0000	0.8796	0.9815	0.9444	0.8704	0.7685	0.8889	0.0729
4.0000	0.9514	0.8958	0.9097	0.6736	0.7569	0.8375	0.1048
5.0000	0.9306	0.7778	0.9931	0.9722	0.2847	0.7917	0.2644
6.0000	0.9767	0.7442	0.7984	0.8605	0.9070	0.8574	0.0812
7.0000	0.9722	0.8958	0.7292	0.9514	0.9792	0.9056	0.0929
8.0000	0.9500	0.8083	0.9167	0.8500	0.9583	0.8967	0.0584
9.0000	0.8333	0.9653	0.8611	0.7847	0.9167	0.8722	0.0631
10.0000	0.9861	0.9028	0.9931	0.9861	0.9722	0.9681	0.0333
					Avg	0.8714	0.1060

EEGNet	LR: 0.1	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4000	0.4000	0.4000	0.2750	0.3250	0.3600	0.0515
2.0000	0.3542	0.3958	0.3333	0.3542	0.4167	0.3708	0.0306
3.0000	0.3611	0.5000	0.3333	0.4167	0.3889	0.4000	0.0572
4.0000	0.3333	0.4167	0.3125	0.3750	0.3958	0.3667	0.0386
5.0000	0.3125	0.3542	0.3958	0.3750	0.2708	0.3417	0.0449
6.0000	0.3953	0.4091	0.3409	0.3864	0.3182	0.3700	0.0346
7.0000	0.3333	0.3958	0.2917	0.4583	0.3333	0.3625	0.0583
8.0000	0.4500	0.4250	0.4500	0.5250	0.4750	0.4650	0.0339
9.0000	0.3958	0.3542	0.3750	0.3333	0.3542	0.3625	0.0212
10.0000	0.4375	0.3542	0.4167	0.3750	0.4167	0.4000	0.0306
					Avg	0.3799	0.0401

EEGNet	LR: 0.1	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.1500	0.2750	0.3000	0.2750	0.2600	0.0561
2.0000	0.3542	0.2917	0.2708	0.2500	0.1667	0.2667	0.0610
3.0000	0.0556	0.1389	0.2778	0.1389	0.1944	0.1611	0.0733
4.0000	0.2292	0.2500	0.3333	0.2917	0.1875	0.2583	0.0503
5.0000	0.1875	0.2292	0.2500	0.1875	0.2500	0.2208	0.0283
6.0000	0.2500	0.2093	0.2093	0.2791	0.2791	0.2453	0.0313
7.0000	0.1667	0.2917	0.2292	0.1875	0.2292	0.2208	0.0429
8.0000	0.3250	0.1250	0.2500	0.3000	0.3500	0.2700	0.0797
9.0000	0.3750	0.3333	0.2083	0.2708	0.3542	0.3083	0.0610
10.0000	0.3542	0.1875	0.2917	0.2708	0.3958	0.3000	0.0717
					Avg	0.2511	0.0555

Table 8.115: 1024 Hz

EEGNet	LR: 0.01	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	0.9583	1.0000	0.9417	1.0000	0.9800	0.0251
2.0000	0.9236	0.8611	0.9653	1.0000	0.9583	0.9417	0.0470
3.0000	0.9907	0.5000	0.3056	1.0000	1.0000	0.7593	0.2975
4.0000	0.9931	0.9167	0.2500	0.9931	0.9306	0.8167	0.2851
5.0000	0.6181	0.6736	0.9861	0.9306	0.9306	0.8278	0.1510
6.0000	0.9380	0.9612	0.9380	0.7674	0.9535	0.9116	0.0727
7.0000	0.7639	0.9861	0.9444	0.5417	0.9375	0.8347	0.1652
8.0000	0.9917	0.8333	0.9333	0.9917	0.9917	0.9483	0.0618
9.0000	0.9722	0.6389	0.6319	0.9583	1.0000	0.8403	0.1678
10.0000	0.9028	0.9861	0.9236	0.9792	0.9861	0.9556	0.0353
					Avg	0.8816	0.1308

EEGNet	LR: 0.01	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.4000	0.3500	0.3000	0.3500	0.2500	0.3300	0.0510
2.0000	0.5000	0.3125	0.3958	0.3542	0.4375	0.4000	0.0651
3.0000	0.3056	0.3333	0.2500	0.3333	0.4167	0.3278	0.0539
4.0000	0.3750	0.4375	0.2500	0.3750	0.4167	0.3708	0.0651
5.0000	0.3542	0.2917	0.3958	0.3958	0.4167	0.3708	0.0445
6.0000	0.3488	0.3182	0.3182	0.2500	0.3409	0.3152	0.0348
7.0000	0.3542	0.2917	0.3333	0.2500	0.3125	0.3083	0.0358
8.0000	0.3750	0.4000	0.4000	0.4250	0.4250	0.4050	0.0187
9.0000	0.3750	0.2500	0.2917	0.3750	0.4583	0.3500	0.0726
10.0000	0.3333	0.4375	0.4167	0.4792	0.4167	0.4167	0.0475
					Avg	0.3595	0.0489

EEGNet	LR: 0.01	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.2500	0.2000	0.1500	0.3500	0.2450	0.0678
2.0000	0.2917	0.1667	0.1667	0.2500	0.2083	0.2167	0.0486
3.0000	0.2778	0.4167	0.2222	0.2500	0.2222	0.2778	0.0724
4.0000	0.2708	0.2083	0.2500	0.2917	0.2083	0.2458	0.0333
5.0000	0.1458	0.3333	0.2292	0.1875	0.3125	0.2417	0.0717
6.0000	0.2727	0.2326	0.1860	0.3023	0.2326	0.2452	0.0396
7.0000	0.2292	0.1250	0.0625	0.2292	0.2917	0.1875	0.0823
8.0000	0.3000	0.2250	0.4000	0.2750	0.2000	0.2800	0.0696
9.0000	0.1458	0.3750	0.2500	0.2917	0.2292	0.2583	0.0752
10.0000	0.2500	0.3750	0.2917	0.3750	0.4375	0.3458	0.0667
					Avg	0.2544	0.0627

Table 8.116: 1024 Hz

EEGNet	LR: 0.001	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2917	1.0000	1.0000	0.5250	0.2833	0.6200	0.3222
2.0000	1.0000	1.0000	1.0000	1.0000	0.6319	0.9264	0.1472
3.0000	1.0000	1.0000	0.8241	1.0000	1.0000	0.9648	0.0704
4.0000	0.6111	0.9792	1.0000	1.0000	0.7639	0.8708	0.1575
5.0000	1.0000	1.0000	0.6597	1.0000	1.0000	0.9319	0.1361
6.0000	1.0000	0.5814	0.7597	0.4961	0.5116	0.6698	0.1898
7.0000	0.2500	1.0000	0.2500	1.0000	0.2500	0.5500	0.3674
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	0.6597	1.0000	1.0000	1.0000	0.9319	0.1361
10.0000	1.0000	1.0000	0.7708	0.8056	1.0000	0.9153	0.1043
					Avg	0.8381	0.1631

EEGNet	LR: 0.001	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.3500	0.2750	0.2500	0.2500	0.2750	0.0387
2.0000	0.2917	0.2500	0.2708	0.2917	0.3542	0.2917	0.0349
3.0000	0.3056	0.3611	0.3056	0.3333	0.2500	0.3111	0.0369
4.0000	0.2708	0.4792	0.2708	0.3542	0.3750	0.3500	0.0773
5.0000	0.3333	0.3333	0.2500	0.3125	0.2917	0.3042	0.0312
6.0000	0.3256	0.3182	0.3409	0.3182	0.2500	0.3106	0.0314
7.0000	0.2500	0.2917	0.2500	0.2500	0.2500	0.2583	0.0167
8.0000	0.3000	0.2500	0.3750	0.4250	0.4000	0.3500	0.0652
9.0000	0.4375	0.3125	0.2500	0.2917	0.2917	0.3167	0.0637
10.0000	0.3542	0.3125	0.2500	0.2708	0.3125	0.3000	0.0363
					Avg	0.3068	0.0432

EEGNet	LR: 0.001	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2500	0.3250	0.3000	0.1250	0.2500	0.2500	0.0689
2.0000	0.3750	0.3542	0.2083	0.3750	0.2708	0.3167	0.0664
3.0000	0.3333	0.3611	0.3056	0.2778	0.2222	0.3000	0.0478
4.0000	0.2917	0.3125	0.2917	0.2083	0.3333	0.2875	0.0425
5.0000	0.2292	0.2292	0.2500	0.3125	0.2083	0.2458	0.0358
6.0000	0.2500	0.1860	0.2791	0.1860	0.2326	0.2267	0.0364
7.0000	0.2500	0.3125	0.2500	0.1250	0.2500	0.2375	0.0612
8.0000	0.3750	0.4500	0.2000	0.3000	0.3500	0.3350	0.0831
9.0000	0.2917	0.2917	0.2083	0.3333	0.2500	0.2750	0.0425
10.0000	0.2500	0.2083	0.3125	0.3125	0.3542	0.2875	0.0517
					Avg	0.2762	0.0536

Table 8.117: 1024 Hz

EEGNet	LR: 0.0001	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
2.0000	0.9444	1.0000	1.0000	1.0000	1.0000	0.9889	0.0222
3.0000	0.5000	1.0000	1.0000	1.0000	1.0000	0.9000	0.2000
4.0000	0.9931	1.0000	1.0000	0.3125	1.0000	0.8611	0.2743
5.0000	0.9931	1.0000	0.2500	1.0000	1.0000	0.8486	0.2993
6.0000	1.0000	1.0000	0.9380	1.0000	1.0000	0.9876	0.0248
7.0000	0.4167	1.0000	1.0000	1.0000	1.0000	0.8833	0.2333
8.0000	1.0000	0.8583	1.0000	1.0000	1.0000	0.9717	0.0567
9.0000	1.0000	1.0000	0.7431	1.0000	1.0000	0.9486	0.1028
10.0000	1.0000	1.0000	0.3056	1.0000	0.6528	0.7917	0.2778
					Avg	0.9181	0.1491

EEGNet	LR: 0.0001	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3750	0.3250	0.3500	0.3000	0.3000	0.3300	0.0292
2.0000	0.2917	0.3125	0.2917	0.2708	0.3125	0.2958	0.0156
3.0000	0.2500	0.3056	0.3056	0.3889	0.3611	0.3222	0.0484
4.0000	0.3542	0.3542	0.3333	0.2500	0.3333	0.3250	0.0386
5.0000	0.3333	0.3125	0.2500	0.2917	0.3958	0.3167	0.0482
6.0000	0.3256	0.2500	0.3182	0.3864	0.2955	0.3151	0.0443
7.0000	0.2500	0.2708	0.2500	0.2708	0.3750	0.2833	0.0468
8.0000	0.4250	0.3500	0.4250	0.5750	0.3750	0.4300	0.0781
9.0000	0.4375	0.3125	0.3333	0.4375	0.3542	0.3750	0.0527
10.0000	0.3958	0.4167	0.2500	0.3125	0.3125	0.3375	0.0610
					Avg	0.3331	0.0463

EEGNet	LR: 0.0001	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2000	0.2250	0.2250	0.2250	0.2250	0.2200	0.0100
2.0000	0.2292	0.2917	0.1875	0.2083	0.1875	0.2208	0.0386
3.0000	0.2778	0.3056	0.1944	0.2222	0.1667	0.2333	0.0515
4.0000	0.2708	0.2500	0.2708	0.2708	0.3750	0.2875	0.0445
5.0000	0.3125	0.2708	0.2500	0.2917	0.2500	0.2750	0.0243
6.0000	0.4318	0.2558	0.2558	0.2791	0.2791	0.3003	0.0666
7.0000	0.2292	0.2708	0.1875	0.2917	0.2708	0.2500	0.0373
8.0000	0.3500	0.3500	0.3750	0.2250	0.3500	0.3300	0.0534
9.0000	0.3542	0.3333	0.2292	0.2708	0.3125	0.3000	0.0449
10.0000	0.3333	0.2083	0.2500	0.2708	0.2292	0.2583	0.0429
					Avg	0.2675	0.0414

Table 8.118: 1024 Hz

EEGNet	#filters: 32, 16	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	1.0000	0.5250	0.9050	0.1900
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0490
3.0000	0.2870	1.0000	1.0000	1.0000	1.0000	0.8574	0.0292
4.0000	1.0000	1.0000	0.9931	1.0000	0.9931	0.9972	0.0034
5.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
6.0000	0.2558	0.2481	1.0000	0.2558	1.0000	0.5519	0.3659
7.0000	1.0000	1.0000	0.9931	0.8056	1.0000	0.9597	0.0771
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	0.7500	0.2569	1.0000	1.0000	0.8014	0.2889
10.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
					Avg	0.9073	0.1003

EEGNet	#filters: 32, 16	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3750	0.3750	0.3750	0.3250	0.2500	0.3400	0.0490
2.0000	0.3958	0.2917	0.3333	0.3750	0.2708	0.3333	0.0475
3.0000	0.2500	0.3333	0.3333	0.3611	0.2500	0.3056	0.0465
4.0000	0.3333	0.3333	0.3125	0.4167	0.2708	0.3333	0.0475
5.0000	0.2917	0.2500	0.3542	0.2917	0.3750	0.3125	0.0456
6.0000	0.2326	0.2500	0.4091	0.2500	0.2727	0.2829	0.0644
7.0000	0.2917	0.3958	0.3542	0.3333	0.3333	0.3417	0.0339
8.0000	0.2750	0.3250	0.3000	0.3000	0.3750	0.3150	0.0339
9.0000	0.3125	0.2917	0.2500	0.2917	0.2708	0.2833	0.0212
10.0000	0.3125	0.3750	0.3750	0.5000	0.4167	0.3958	0.0618
					Avg	0.3243	0.0451

EEGNet	#filters: 32, 16	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.3250	0.2500	0.2500	0.3000	0.2800	0.0292
2.0000	0.3125	0.3333	0.2083	0.2708	0.2500	0.2750	0.0445
3.0000	0.2500	0.3056	0.1667	0.1944	0.2778	0.2389	0.0515
4.0000	0.3542	0.2083	0.2917	0.2917	0.2917	0.2875	0.0464
5.0000	0.2292	0.2292	0.2083	0.1875	0.2500	0.2208	0.0212
6.0000	0.2500	0.2558	0.1860	0.2326	0.2558	0.2360	0.0264
7.0000	0.2917	0.2917	0.1250	0.2708	0.1667	0.2292	0.0697
8.0000	0.2500	0.3000	0.3000	0.4250	0.3000	0.3150	0.0583
9.0000	0.2708	0.2500	0.2500	0.4583	0.3333	0.3125	0.0791
10.0000	0.4583	0.3542	0.3958	0.2708	0.2292	0.3417	0.0829
					Avg	0.2737	0.0509

Table 8.119: 254 Hz

EEGNet	#filters: 24, 8	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.5000	0.2583	0.2583	0.3917	0.9667	0.4750	0.2620
2.0000	0.3125	0.6806	1.0000	0.8611	1.0000	0.7708	0.2575
3.0000	1.0000	1.0000	0.7500	0.3889	0.8333	0.7944	0.2247
4.0000	1.0000	0.8681	1.0000	1.0000	1.0000	0.9736	0.0528
5.0000	1.0000	0.2500	1.0000	0.9514	1.0000	0.8403	0.2957
6.0000	1.0000	0.3721	0.6744	1.0000	0.2868	0.6667	0.3011
7.0000	0.2569	0.9861	1.0000	1.0000	0.2500	0.6986	0.3635
8.0000	1.0000	0.8417	1.0000	1.0000	1.0000	0.9683	0.0633
9.0000	1.0000	0.9931	0.2569	0.8819	1.0000	0.8264	0.2882
10.0000	1.0000	0.5903	0.6528	1.0000	1.0000	0.8486	0.1865
					Avg	0.7863	0.2295

EEGNet	#filters: 24, 8	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2750	0.2500	0.2500	0.2500	0.3500	0.2750	0.0387
2.0000	0.2500	0.2917	0.2708	0.2708	0.3333	0.2833	0.0283
3.0000	0.2778	0.3056	0.3333	0.3056	0.3333	0.3111	0.0208
4.0000	0.3750	0.2708	0.4167	0.2500	0.3750	0.3375	0.0651
5.0000	0.4167	0.2500	0.2500	0.2917	0.3542	0.3125	0.0645
6.0000	0.3023	0.2500	0.3409	0.3636	0.2500	0.3014	0.0463
7.0000	0.2500	0.3542	0.3333	0.2708	0.2500	0.2917	0.0437
8.0000	0.4750	0.3250	0.4000	0.3750	0.3500	0.3850	0.0515
9.0000	0.3542	0.2917	0.2500	0.3333	0.2500	0.2958	0.0425
10.0000	0.3750	0.2917	0.2917	0.3125	0.4792	0.3500	0.0714
					Avg	0.3143	0.0473

EEGNet	#filters: 24, 8	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.2750	0.2500	0.2500	0.1500	0.2450	0.0510
2.0000	0.2292	0.3333	0.3125	0.3125	0.3958	0.3167	0.0534
3.0000	0.1667	0.2778	0.1944	0.2500	0.1667	0.2111	0.0451
4.0000	0.2917	0.1875	0.2292	0.3125	0.2917	0.2625	0.0468
5.0000	0.2917	0.2500	0.2500	0.1875	0.2917	0.2542	0.0382
6.0000	0.3409	0.3023	0.3023	0.2791	0.2558	0.2961	0.0283
7.0000	0.2500	0.2708	0.2292	0.2083	0.2500	0.2417	0.0212
8.0000	0.4000	0.2750	0.2500	0.3250	0.3250	0.3150	0.0515
9.0000	0.2708	0.2500	0.2500	0.2500	0.3333	0.2708	0.0323
10.0000	0.2292	0.2708	0.4167	0.2708	0.3333	0.3042	0.0654
					Avg	0.2717	0.0433

Table 8.120: 1024 Hz

EEGNet	Feature extract	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	1.0000	1.0000	1.0000	0.9500	1.0000	0.9900	0.0200
2.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
3.0000	0.5556	1.0000	1.0000	0.5741	1.0000	0.8259	0.2133
4.0000	0.8333	1.0000	1.0000	0.5069	1.0000	0.8681	0.1917
5.0000	1.0000	0.9653	1.0000	1.0000	1.0000	0.9931	0.0139
6.0000	1.0000	1.0000	0.9225	1.0000	1.0000	0.9845	0.0310
7.0000	0.9931	1.0000	1.0000	1.0000	1.0000	0.9986	0.0028
8.0000	1.0000	0.6000	0.9750	0.9500	1.0000	0.9050	0.1536
9.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
10.0000	1.0000	0.9931	1.0000	1.0000	1.0000	0.9986	0.0028
					Avg	0.9564	0.0629

EEGNet	Feature extract	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.3000	0.3750	0.3500	0.3000	0.3250	0.0316
2.0000	0.3958	0.2917	0.3333	0.3542	0.2708	0.3292	0.0445
3.0000	0.2778	0.1944	0.2222	0.3056	0.2222	0.2444	0.0408
4.0000	0.2708	0.2500	0.2500	0.2917	0.2917	0.2708	0.0186
5.0000	0.2917	0.3333	0.2292	0.2292	0.3750	0.2917	0.0574
6.0000	0.2558	0.2955	0.2955	0.2955	0.3636	0.3012	0.0348
7.0000	0.3125	0.2500	0.2292	0.3333	0.2708	0.2792	0.0386
8.0000	0.3500	0.3500	0.5000	0.3250	0.2750	0.3600	0.0752
9.0000	0.3125	0.3542	0.3750	0.3125	0.3958	0.3500	0.0333
10.0000	0.4167	0.4375	0.3333	0.3333	0.4792	0.4000	0.0580
					Avg	0.3151	0.0433

EEGNet	Feature extract	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2250	0.2500	0.1500	0.1750	0.2500	0.2100	0.0406
2.0000	0.2708	0.3125	0.2917	0.2917	0.4375	0.3208	0.0598
3.0000	0.1944	0.2778	0.1944	0.1944	0.1944	0.2111	0.0333
4.0000	0.1875	0.2500	0.2708	0.2708	0.2917	0.2542	0.0358
5.0000	0.3125	0.2708	0.2500	0.2292	0.2292	0.2583	0.0312
6.0000	0.2045	0.2558	0.2326	0.2093	0.2791	0.2363	0.0281
7.0000	0.2500	0.1458	0.2500	0.3542	0.2292	0.2458	0.0664
8.0000	0.2750	0.3250	0.3000	0.3000	0.3250	0.3050	0.0187
9.0000	0.2083	0.2083	0.2917	0.2292	0.1875	0.2250	0.0358
10.0000	0.3542	0.3750	0.4375	0.3750	0.2292	0.3542	0.0685
					Avg	0.2621	0.0418

EEGNet	Fine tune	Train					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.8250	1.0000	0.7917	1.0000	0.9917	0.9217	0.0932
2.0000	0.5069	1.0000	1.0000	0.5903	1.0000	0.8194	0.2227
3.0000	1.0000	1.0000	1.0000	1.0000	0.9167	0.9833	0.0333
4.0000	1.0000	1.0000	0.8472	1.0000	1.0000	0.9694	0.0611
5.0000	0.7847	1.0000	1.0000	1.0000	0.6181	0.8806	0.1555
6.0000	1.0000	0.8140	0.5426	0.5271	0.9612	0.7690	0.2010
7.0000	0.8264	1.0000	0.5903	1.0000	1.0000	0.8833	0.1612
8.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
9.0000	1.0000	0.8611	0.6250	1.0000	1.0000	0.8972	0.1464
10.0000	0.9167	0.9931	1.0000	1.0000	1.0000	0.9819	0.0327
					Avg	0.9106	0.1107

EEGNet	Fine tune	Validation					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.3000	0.3750	0.2750	0.3500	0.3250	0.3250	0.0354
2.0000	0.4375	0.3958	0.1875	0.2708	0.3333	0.3250	0.0890
3.0000	0.1944	0.3889	0.3611	0.2222	0.2778	0.2889	0.0758
4.0000	0.3333	0.2708	0.3542	0.3958	0.3333	0.3375	0.0404
5.0000	0.3125	0.2292	0.3750	0.3125	0.3125	0.3083	0.0464
6.0000	0.3488	0.2955	0.2955	0.2955	0.2273	0.2925	0.0386
7.0000	0.2708	0.3542	0.3333	0.3542	0.2917	0.3208	0.0339
8.0000	0.4000	0.3250	0.3500	0.3250	0.3500	0.3500	0.0274
9.0000	0.3750	0.3125	0.3125	0.3542	0.3958	0.3500	0.0333
10.0000	0.3125	0.4375	0.3750	0.3750	0.3958	0.3792	0.0404
					Avg	0.3277	0.0460

EEGNet	Fine tune	Test					
Subject	**Fold1**	**Fold2**	**Fold3**	**Fold4**	**Fold5**	**Avg Acc**	**STD dev**
1.0000	0.2000	0.2250	0.2000	0.3250	0.2250	0.2350	0.0464
2.0000	0.2500	0.2500	0.4167	0.1875	0.2292	0.2667	0.0784
3.0000	0.3333	0.2500	0.1944	0.2778	0.1944	0.2500	0.0527
4.0000	0.1667	0.3542	0.2083	0.2917	0.2708	0.2583	0.0654
5.0000	0.2917	0.3125	0.2292	0.2292	0.2708	0.2667	0.0333
6.0000	0.2500	0.1860	0.3023	0.3953	0.2326	0.2733	0.0715
7.0000	0.2917	0.2917	0.1250	0.1042	0.3958	0.2417	0.1107
8.0000	0.3250	0.3500	0.2500	0.3250	0.4000	0.3300	0.0485
9.0000	0.2708	0.2292	0.2917	0.2500	0.3125	0.2708	0.0295
10.0000	0.4167	0.4167	0.1667	0.4167	0.3125	0.3458	0.0982
					Avg	0.2738	0.0635