Schedule internship 2014-2015

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| September | **Supervised learning:**  The previous intern has developed an algorithm with which she is able to classify labeled data to determine whether or not the data contains speech.  For this purpose she abstracted Voice Activity Detection (VAD) features to aid in the classification of the data. With the detections of the VAD features she was able to detect the occurrence of speech with a accuracy of 92%, which is already quite impressive using only 2 VAD features. In this first month my aim is to analyze her work and to see whether or not I am able to reproduce the results. Once I am able to reproduce the results I will apply further improvements to the program and aim to increase the accuracy and precision.  The programs used for this first phase are PRAAT and WEKA.  The data that will be used is mostly labeled data and consist of audio recordings that last 5 minutes. The previous intern has divided each recording into timeframes of ten seconds and labeled each subset with the occurrence or absence of speech.  Since the data is processed without any preprocessing methods, preprocessing the data will make the further improvements. The preprocessing methods that will be explored are band pass filters, Weiner filters and (Fast) Fourier transforms. The reason for these choices is that the data contains a lot of noise and in order to abstract the speech we only have to look in a certain range.  Week1: \*Geen data ontvangen  Week2: \*Data niet compleet  Week3: \*Data ontvangen preprocessing kan beginnen  Week4: |
| October | **Unsupervised learning:**  In this phase various unsupervised learning algorithms will be explored and used. The reason for this phase is that the dataset contained mainly unlabeled data. Since I want to use the available time efficiently I have decided not to label the data my self. Therefore I will try to find the most suitable unsupervised learning algorithm for this particular problem. If it is not possible to find an algorithm that will achieve great results the alternative is to combine different features from different algorithm.  Previous research used the cocktail party algorithm for the detection of speech and achieved high results with this method. However, the difference between the data of that research and the available data that I have is that the data that I have is not recorded with multiple microphones and just with 1. So I am not certain in what extent I will be able to use the cocktail party algorithm. However, I will explore this algorithm to search for the possibilities.  This month I will mainly focus on investigation and comparing the different unsupervised learning algorithms and see which one fits the current dataset best.  Week1:  Week2:  Week3:  Week4: |
| November | Week1:  Week2:  Week3:  Week4: |
| December | Week1:  Week2:  Week3:  Week4: |
| January | App:  Week1:  Week2:  Week3:  Week4: |
| February | Week1:  Week2:  Week3:  Week4: |