**README**

The following scripts have been included in the zip folder:

1. **feature\_extraction.ipynb:**
2. In this script the features are extracted for task 1 using the Parselmouth package in python.
3. The speech files are processed and the 6 features are extracted along with the speaker names, session, start time and the words. All of this information is organized into a dataframe
4. Then the the data in the frame is Z-normalized over each unique speaker in the data frame above and the normalized data is organized into a new dataframe
5. Then using the extracted data frames (normalized and unnormalized), the mean and standard deviation is plotted for each feature using a bar plot with y error lines showing the standard deviation.

**Note**: For the feature extraction in task2 using OpenSmile, the following bash script was used to extract the features from the speech files:

for f in hw3\_speech\_files/\* ; do echo $f

SMILExtract -C config/IS09\_emotion.conf -I hw3\_speech\_files/speech01.wav -O dataset.arff

; done

2. **Classification.ipynb**

1. In this script, first extracted features for task 2 (using OpenSmile) are first imported into a dataframe
2. Then the data in the frame is Z-normalized over each speaker (as done in feature\_extraction.ipynb)
3. Then leave-one out cross validation is performed using XGBoost classifier by leaving out one of the 7 speakers as the test set in each experiment. Also the pre-processing function of imputation (insert missing values) is done for each training data set created.
4. A classification report is generated for each experiment and the reports are printed.