Report

Period: Oct. 24-30, 2014

Task: **Simulating and estimating multimodal emotion recognition using different multimodal emotion databases**

Subtasks: **SVM training and classification, Performing simple actions on NAO, Analyzing facial and vocal data**

1 Task 1

Simulating all audio data from SAVEE database I have created a database for 14 vocal features, including: pitch, intensity, first, second, third and fourth formants and their bandwidths, mean autocorrelation, mean harmonics-to-noise ratio, mean noise-to-harmonics ratio and standard deviation. For this analysis I have used I have used PRAAT software to extract features. I evaluated the performance of the SVM binary classification by doing one-vs-all binary classification and using the pairs of the features described above for the emotions of 'happiness' and 'sadness'. The results have shown that the highest performance for classification has been reached when I used the pitch and intensity pair(for the 'happiness' the recognition rate is 74.76% and for the 'sadness' it is 71.11%).

2 Task 2

Using Choregraph program perform simple action on the NAO humanoid robot.

3 Task 3

Analysing the facial and vocal emotion recognition by AV clips recorded on the Kinect camera.

Tasks for the Next Week

1 I am planning to estimate the SVM binary classification performances for 'angry', 'fear', 'disgust', 'neutral' and 'surprise' emotions. The decisions of different features will be combined by using data fusion techniques such as majority voting, mean rule, and weighted sum rule.

2 Simulating the results of Multimodal Emotion Recognition of four and five categories by using ensemble of trees of binary SVM classifiers.