

# Report

**Period:** September 8-14, 2014

**Task:** Multimodal Emotion Recognition

**Subtask:** Literature review on application different methods and algorithms for improving emotion recognition rate and accuracy

## **1 Review of the application of Spontaneous Filipino Emotion Database**

This study focus on the development of a multimodal emotion recognition system that is trained using a spontaneous Filipino emotion database. The system extracts facial and voice features that are then classified into the correct emotion label using support vector machines (SVM). Based on the results of the study, we conclude that by using the combination of voice and facial modalities we get higher recognition accuracy than using each of them separately.

## **2 Review of Ensemble of SVM Trees for multimodal emotion recognition**

According to this study we formulate the emotion recognition task as a multi-category classification problem and suggest a solution based on the automatically generated ensemble of trees with binary SVM classifiers in the tree nodes. We perform four-way (anger, happiness, sadness, neutral) and five-way (included excitement) emotion recognition using the different combinations of acoustic, lexical and facial features. The experiments showed that ensemble of trees of binary SVM classifiers perform better than classical multi-way SVM classification and gain modern results for all feature combinations.

## **3 Review of Exploring Fusion Methods for multimodal emotion recognition with Missing Data**

The study aims at the development of a multimodal, ensemble-based system for emotion recognition. Special attention is given to a problem of missing data in one or more modalities. The system used in this work solves the problem in the multimodal fusion stage, so various ensemble techniques as well as rather novel emotion specific approaches are explained on how to compensate for temporarily unavailable modalities (facial, vocal or gesture).

## **Tasks for next week**

- 1 Study other methods and algorithm for multimodal Emotion Recognition.
- 2 Performing simple tasks on NAO with a Choregraphe program to make it do simple actions.
- 3 To do the computational part of study by working on a MATLAB program package.

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