MOdality and THought Unified- Mothú

Abstract:

Mothú translates to the Irish word for feeling, and it is this intrinsically complex cognitive process which we aim to understand through the program which was created as part of this research project. A large percentage of human communication consists of non-verbal communication, although in comparison with its verbal counterpart, non-verbal sentiment analysis remains a relatively new field. The non-verbal sentiment analysis systems currently available, although they are at the cutting edge of technology, they have not been widely adopted due to usability issues.

The program presented in this dissertation aims to analyse facial-expression and speech sentiment data in order to produce results which will allow the user to gain an insight into the sentiment felt by the subject, reducing the burden of interpretation.
Previous studies which apply sentiment analysis techniques to the study of leaders have often focused on the male sex. This research aims to expand these prior studies by conducting an extensive investigation on the sentiment of a sample of female leaders. This study will consider the sample of leaders in both emergency and non-emergency situations to determine if a deviance within their expression of emotions can be determined.

From the statistical analysis performed and the graphical representations produced, a deviance within the behaviour of the leaders was found through unimodal analysis and then validated via multimodal analysis. As the validity of results presented in this project are a consequence of the accuracy of the sentiment analysis systems used, an evaluation of the performance of these systems was conducted. FACET, used for facial expression analysis, was found to be an accurate system whereas openSMILE used for speech analysis was found to have some inaccuracies. Therefore, the precision of the audio sentiment analysis must be improved for multimodal analysis such as this to be used for practical applications.