



Bahria University
Discovering Knowledge

FINAL YAER PROJECT REPORT

**REAL TIME EMOTION DETECTION THROUGH
FACES USING SVM
(RESEARCH BASED)**

By

ROHMA NAJAM (41231)

ERUM SHAHEEN (41211)

SYED NABEEL HAIDER (41235)

SUPERVISED BY

(SAMEENA JAVAID)

BAHRIA UNIVERSITY (KARACHI CAMPUS)

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ABSTRACT

Detecting and recognizing human emotions through technology is a very active research nowadays, in the fields of Computer Vision and Human-Computer Interaction. There are many modern techniques through which this procedure is implemented. Some famous techniques are Digital Image Processing, Template Matching, Machine Learning (which further includes Neural Network and Support Vector Machines). If computers can successfully understand human emotion, we can make systems which can reduce the gap of Human Computer Interaction. In this project we have worked on some different color models which segment and separate features of the face. The features we need to identify are the eyes and mouth/lips region. Once the features are recognized using the color models, these features need to be extracted. For that purpose, we have used SVM (Support Vector Machine) with LDA (Linear Discriminant Analysis) technique to detect the eye and lips region from the human face image and then with the help of a pre-trained SVM model we have detected the emotion from those facial features. This research project also includes an effective way to detect 6 different emotions, namely **Happiness, Sadness, Anger, Disgust, Surprise** and **Fear**, using the frontal face image of a human begin as input.

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