## OPTIMAL NEURAL NETWORK CLASSIFIER FOR HUMAN EMOTION RECOGNITION FROM FACIAL EXPRESSIONS USING SINGULAR VALUE DECOMPOSITION (SVD)

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## Abstract

This research aims at developing "Humanoid Robots" that can carry out intellectual conversation with human beings. The first step in this direction is to recognize human emotions by a computer using neural network. In this paper all six universally recognized basic emotions namely angry, disgust, fear, happy, sad and surprise along with neutral one are recognized. Support Vector Machine (SVM) and Multilayer Perceptron (MLP) are used and their performance is compared. Singular Value Decomposition (SVD) and Statistical Parameters are used for feature extraction. We have achieved 100% recognition accuracy on training data set (Seen examples) and 90.43% on test data set (Unseen examples).

**Keywords:** Multilayer Perceptron (MLP), Support Vector Machine (SVM), Singular Value Decomposition (SVD), Feature Extraction, Mat lab.