**ABSTRACT**

The Project titled” **A Compact Deep Learning Model for Robust Facial Emotion Recognition with Anaconda Python Keras and Pandas packages”** is a compact CNN model for facial expression recognition. Expression recognition on the low quality image database is more challenging because it contains more low-intensity expressions which are difficult to distinguish with insufficient image resolution. Data collection for facial expression recognition is expensive and time-consuming. Research indicates that using images downloaded from the Internet is helpful to model training for the expression recognition problem. To this end, we extra datasets to improve the training of facial expression recognition, each representing specific data source. Moreover, to prevent subjective annotation, each dataset we collected is labeled with different approaches to ensure the annotation qualities.

Recognizing precise expression from a variety of expression forms of different people would be a huge problem. To solve this problem, this project generates an **Emotion Detection Model** to extract emotion from image input. This work mainly focuses on psychological approach of **c**olor circle-emotion relation to find the accurate emotion behind the input image (image input). At first the whole image will be image preprocessed and pixel by pixel data studied. And the combinations of these circles based on combined data will result into a new color. This resulted color will be directly linked to a particular emotion. Based on psychological theories output will be of reasonable Accuracy. The major application of this work would be to predict a person’s emotion based on his face images, video frames etc. This can even be applied for evaluating the public option relating to a particular movie form the video reaction posts on social Medias.

Facial expression is one of the most powerful, natural and universal signals for human beings to convey their emotional states and intentions. The frame-to-sequence approach successfully exploits temporal information and it improves the accuracies on the public benchmarking databases. Prototypical facial expressions are anger, disgust, fear, happiness, sadness, and surprise. Contempt was subsequently added as one of the basic emotions. Having sufficient labeled training data that include as many variations of the populations and environments as possible is important for the design of a deep expression recognition system.

Behaviors, actions, poses, facial expressions and speech; these are considered as channels that convey human emotions. Extensive research has being carried out to explore the relationships between these channels and emotions. This paper proposes a prototype system which automatically recognizes the emotion represented on a face. Thus a neural network based solution combined with image processing is used in classifying the universal emotions: Happiness, Sadness, Anger, Disgust, Contempt, neutral, Surprise and Fear. Colored frontal face images are given as input to the prototype system.

After the face is detected, image processing based feature point extraction method is used to extract a set of selected feature points. Finally, a set of values obtained after processing those extracted feature points are given as input to the neural network to recognize the emotion contained *.*The three main steps that are common in automatic deep FER, i.e., pre-processing, deep feature learning and deep feature classification.