**Application of Convolutional Neural Networks Towards the Classification of Human Emotions from Images:**

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**Purpose:**

The purpose of this project is to utilize a Convolutional Neural Network (CNN) to classify the emotions shown on a human face. We have several large datasets that will be used to train the model and then the model will be applied to an image captured once the program detects a face. The program will then display this capture along with the emotion it believes to be most prevalently shown in the image. We implemented this algorithm to work as quickly as possible so that there would only be a short delay between the image capture and the final result displayed.

**Related Work:**

A. Verma et. al used a similar convolutional neural network in order to detect the emotions on the human face. Their network consisted of two convolution layers and two pooling layers and then those layers are flattened and then fully connected in the following layers. They also looked at several different types of architectures in their experiment including rectangular, modified triangular, and Venturi. They showed that the Venturi architecture had the best results with a training accuracy of 98.87%, a training loss of .0224, a testing accuracy of 86.78%, and a testing loss of .9693. For each of the seven emotions they classified their confusion matrix showed that each category had above an 85% correct classification.

**Method:**

**Experiments and Results:**

**Bibliography:**