Facial Expression Analysis using CNN

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Abstract*: Face Expression recognition is of great importance to real-world applications such as video conference, human-machine interaction and security systems. As compared to traditional machine learning approaches, deep learning-based methods have shown better performances in terms of accuracy and speed of processing in image recognition. This report proposes a Modified Convolutional Neural Network (CNN) architecture by adding two normalization operations to two of the layers. The normalization operation which is batch normalization provided accelerates the network. CNN architecture is employed to extract distinctive face features and a Softmax classifier is used to classify faces in the fully connected layer of CNN. In the experiment part, Georgia Tech Database shows that the proposed approach has improved the facial Expression recognition performance with better recognition results.*

Keywords: Convolutional Neural Network