**Review of Detecting GAN generated Fake Images using Co-occurrence Matrices**

In the field of fake face detection, multiple works in this field of work have been found[*Provide References*]. In this paper the author uses co-occurrence matrices from an input image and passes it onto a deep learning framework which would essentially classify is the subjected image was put through modification of not.

In order to accomplish this novel work, the author computes co-occurrence matrices on each of the RGB channels found in the subjected image. Co-occurrence matrices have formerly been known to spot hidden patterns out of an image to perform steganalysis. However, in this paper, the author passes the computed co-occurrence matrices through a convolutional neural network. The convolutional neural network then learns from the given input to find hidden patterns and features from the co-occurrence matrices.

The co-occurrence matrices had a tensor dimension of 3X256X256 which was passed on to the CNN layers of 32 5X5 Convolutional layers, Relu layer, 32 5X5 Convolutional layers, Max Pooling Layers and two 256 Dense layers followed by a sigmoid layer. Stoichatic Gradient Descent was used as the optimizer.

The model was trained on namely two datasets, CycleGAN and StarGAN and it was tested on each of those datasets. The accuracy the author conceived was 99.49% and 93.42%.