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Deep Fake Video Detection

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Abstract: *Deep learning algorithms have become so strong due to increasing processing power that it is now quite easy to produce an identical human-synthesized video, sometimes known as a "deep fake.". Scenarios where these realistic face swapped deep fakes are used to create political distress, fake terrorism events, revenge porn, blackmail peoples are easily envisioned. In this work, we describe a deep learning-based method that can effectively distinguish AI-generated fake videos from real videos. Our technique can recognize the replacement and reenactment automatically. deepfakes. We are trying to use Artificial Intelligence(AI) to fight Artificial Intelligence(AI). Our system uses a Res-Next Convolution n e u r a l network to extract the frame-level features and these features and further used to train the Long Short Term Memory(LSTM) based Recurrent Neural Network(RNN to classify whether the video is subject to any kind of manipulation or not, ie whether the video is deep fake or real video. In order to improve the model's performance on real-time data and replicate real-world circumstances, we assess our approach using a sizable, well-balanced, and diverse set of prepared data by mixing the various available data-set like FaceForensic++, Deepfake detection challenge, and Celeb-DF. We also show how our system achieved competitive result using very simple and robust approach*

Keywords: Deepfake Video Detection , Convolutional Neural Network(CNN) , recurrent neural network (RNN) , Res- Next Convolution Neural Network , long short term memory(LSTM) , Generative Adversarial Network (GAN) , DF- Deepfake