

Face Manipulation Detection

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Abstract: The rise of digital manipulation techniques has led to the proliferation of deepfakes and other manipulated facial images, posing significant challenges to online trust and security. This paper proposes a novel deep learning model aimed at efficiently and effectively detecting face manipulations. The architecture combines the strengths of Efficient Net, a convolutional neural network (CNN) renowned for its accuracy and efficiency, with Long Short-Term Memory (LSTM) networks. Efficient Net is utilized for extracting high-level features from facial images, enabling the model to capture subtle inconsistencies that may indicate manipulation. These features serve as crucial inputs to the subsequent analysis performed by LSTM networks. LSTMs excel at capturing temporal dependencies within sequences of data, making them particularly well-suited for detecting manipulations in video sequences. By leveraging the power of CNNs for feature extraction and the sequential learning capabilities of LSTMs, the proposed hybrid approach aims to achieve superior performance in face manipulation detection. This combination allows the model to effectively analyse both spatial and temporal aspects of facial images, enhancing its ability to detect various forms of manipulation accurately.

Keywords: Face Manipulation, deep fakes, Efficient Net, LSTM