**Deepfake Detection Using Deep Learning Techniques**

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**Abstract:**

The proliferation of deepfake images and videos presents a formidable challenge to individual and national security, with potential implications for public opinion, societal stability, and geopolitical affairs. Detecting and mitigating the risks associated with deepfakes require innovative approaches and robust methodologies. This study investigates the development of a Convolutional Neural Network (CNN)-based model for deepfake detection, leveraging advancements in feature extraction and transfer learning techniques. Through meticulous dataset curation and augmentation, coupled with a comprehensive model architecture inspired by the InceptionV3 model, we propose a reliable solution for identifying manipulated imagery. The proposed model achieves promising results in distinguishing between authentic and deepfake content, demonstrating competitive performance compared to existing approaches. Insights gained from this study contribute to the advancement of deepfake detection technology, with implications for safeguarding individuals and fostering trust in information ecosystems.

**Keywords**: **—** Deepfake, Convolutional Neural Network, InceptionV3, Transfer Learning, Image Classification, Model Architecture, Dataset Curation, Augmentation Techniques, Robust Detection, Model Evaluation**.**