**Deepfake in photos**

SE-A-13

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The rise of deepfake technology, enabled by Generative Adversarial Networks (GANs), threatens digital authenticity by creating highly realistic fake images that are often unnoticeable to the human eye. This project focuses on developing a robust deepfake detection model using AI-based approaches, including frequency analysis, convolutional trace detection, and deep learning models. The research examines methods like convolutional neural networks (CNNs), Support Vector Machines (SVMs), and hybrid detection models integrated with pre-trained architectures like VGG16, ResNet50, and Xception. Experimental results demonstrate that combining these methods improves performance, achieving high classification accuracy on datasets like OpenForensicsV1. With deepfake images used to spread misinformation, particularly in sensitive geopolitical contexts, this project contributes to developing a reliable, scalable system to combat digital manipulation.

Keywords: deepfake, deep-learning, GAN, images, models, photos