

Deepfake Detection using ViT_B_16 model

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Abstract: *The technology of Deepfake has rapidly evolved in today's world, it poses significant challenges to society and individuals as it enables high realistic fake images, audios and videos. There is increase of risks of deception, misinformation, and reputational damage due to these advancements. To counteract this emerging threat, we have explored Vision Transformer (ViT)-based models for deepfake detection, leveraging deep learning techniques. Our study implements ViT models —ViT-B-16 trained on datasets of 5,000 images. A Flutter-based application is developed to classify uploaded images as real or fake, providing a prediction confidence score. Experimental results indicate that the ViT-based models achieve promising detection performance, with the highest accuracy reaching 87.33%. Our research highlights the importance advanced architectures in improving deepfake detection techniques. The study of Vision Transformers, showcase the potential in tackling deepfake challenges. Our research contributes to the ongoing and future efforts to enhance the deepfake detection techniques and mitigate its social, personal and environmental impacts.*

Keywords: Deepfake detection, Vision Transformer(ViT), Deep Learning, Image Classification, Misinformation prevention

