

## Deteksi Citra Wajah Buatan AI Menggunakan Model Xception

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### *Abstract*

*Generative adversarial networks (GANs) have emerged as a valuable deep learning technique, capable of generating lifelike artificial faces through learned data. However, the proliferation of GAN-generated content raises concerns about detecting artificially created faces. Therefore, it is important to detect artificially generated faces visually to prevent fraud, ensure security and privacy, maintain information credibility, and support law enforcement and public safety. To address this challenge, we present a system designed specifically to detect fake face images generated by AI. Our research contributes to the ongoing efforts in combating the challenges posed by GAN-generated fake content, particularly in the domain of face images. By developing robust detection systems, we can enhance our ability to identify and mitigate the potentially harmful consequences of deceptive or maliciously generated visual content. Our research leverages the Xception model, utilizing depthwise separable convolution as the underlying method for classification. We used a collection of 20.000 images comprising both generated faces from the StyleGAN dataset and real faces from CelebA-HQ. Our system's performance was evaluated using a testing set and has resulted in an impressive accuracy of 98.77%. The generated class has 98% in precision and f1-score, and 97% in recall. For the real class, it has 97% in precision, 98% in recall and f1-score. This indicates the system is effective in accurately distinguishing between generated fake faces and authentic ones.*

*Keywords: fake face detection, cnn, xception, deep learning.*

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