UNIVERSITI TEKNOLOGI MARA

FACE ANTI-SPOOFING USING CONVOLUTIONAL NEURAL NETWORKS

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ABSTRACT

Face anti-spoofing is a revolutionary technology involved in various aspects of daily life. Specifically, facial anti-spoofing is a detection process that involves using printed or even keepsakes to mimic genuine facial appearances, and it is related to the facial detection application. The problems that face anti-spoofing are the need for security enhancement, the lack of biometric authentication, and the system's vulnerabilities in manipulating facial detection. In this project, the Convolutional Neural Network (CNN) algorithm was implemented using TensorFlow in Python to detect fake face images. The model facilitated a straightforward construction of the CNN, allowing for sequential handling of inputs. The model included Conv2D and MaxPooling2D layers for feature extraction, followed by a flattened layer and a dense layer with dense, dropout, and batch normalization layers. This project is due to its ability to do face detection and anti-spoofing tasks and handle high-dimensional data. The study investigates CNN requirements, develops a prototype system, and evaluates its accuracy, achieving an impressive 86% accuracy in detecting fake facial appearances. Therefore, proving that the system can carry out the detection task may have emerged as a pivotal solution for detecting and mitigating face-spoofing attacks.

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