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Study: Morning

Biometric Authentication : Iris Recognition Using Deep Learning

A Graduate Project Submitted to the department of Information Security of the College of Information Technology, University of Babylon, in Partial Fulfillment of the Requirements for the Bachelor's degree in the Information Security of Information Technology.

By

Hamida Hassan Mushait

Supervised by

Prof. Dr. Eman S. Al-Shamery

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Abstract

In a biometric system a person is identified automatically by processing the unique features that are posed by the individual. Iris Recognition is regarded as the most reliable and accurate biometric identification system available. In Iris Recognition a person is identified by the iris which is the part of eye using concepts of neural networks. The aim is to identify a person in real time, with high efficiency and accuracy by analysing the random patters visible within the iris if an eye from some distance,

Convolutional neural network is a practical algorithm that is highly suitable for image processing and pattern recognition, its effectiveness and flexibility have seen it being applied in many fields. This study focuses on the development of an iris recognition system based on convolutional neural network with high precision and efficiency.

A total of iris samples from 5 individuals with both sides of the eyes included are used to train the deep recognition system. The model shows an early sign of underfitting and little convergence with inadequate number of training epoch. However, as the training epochs are increased, the trained model managed to achieve a testing accuracy of 99%.