A Novel Detection System for Human Retina Based on Fuzzification Neural Network

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Abstract

Automated methods are based on human biometrics for the purpose of verifying a person's identity based on the physiological or behavioural features of humans. Biometrics traits include facial, iris, retina, fingerprint, and tongue. Preserving biometrics is very important because it is one of the means of preserving the information of others. One of the most important biometrics, most accurate, and powerful methods of identity verification is human retina. The unique retina features per person can be displayed as a compact binary form. For the purpose of confirming an individual's identity, the unique retinal features of the individual can be easily compared with the reference template. In this paper, a novel detection system is proposed for retinal images utilising the fuzzification model that integrated with deep learning neural networks. In addition, identification system based on human retina is considered the most protect scheme of modern applications. The novelty in this paper is integrated between fuzzy set and deep learning neural networks. Practically, this is first time to integrate between fuzzification model and artificial neural network. The obtained experimental results of the proposed identification

system demonstrate that the suggested approach possess outstanding detection rate with decline error rate as well as reducing the number of false alarms.

Keyword: Image Processing