FACE RECOGNITION USING FACIAL ATTRACTIVENESS

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A Thesis Submitted in Partial
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The Examining Committee Approved This Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science (Computer Science).

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ABSTRACT

Title of Thesis	Face Recognition Using Facial Attractiveness
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Face recognition has gained a lot of interests from many researchers in various fields such as computer science, psychology and neuroscience for over 30 years. Commercial products of face recognition are also available in the market and have been used in many areas such as biometrics (automatic methods of recognizing a person based on a physiological or behavioral characteristic e.g., face, fingerprints, hand geometry, etc.), human-computer interaction (HCI), robotics, digital libraries, and so on. However, the technology of face recognition is still far from human ability of face recognition. We still not clearly understand how human recognize a face or how the face is represented in our brain.

In this thesis, we propose an approach for automatic face recognition using a novel set of face features derived from facial attractiveness. The motivations of this method come from the psychological studies on the effects of facial attractiveness to human face recognition abilities, and the studies of facial attractiveness in machine-learning context show that facial attractiveness can be learned and predicted by machine. To exploit facial attractiveness in face recognition, a set of features created from the distances between corresponding points on the actual face and the face archetype (the ideal form of human face) is used for identifying an individual. Experiments on the proposed method made on face images of 70 persons, with variations in light, background, image size and facial expressions, produce the recognition rate of 92.86%.

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