

Thesis Title	Face Recognition by Fractal Geometry and Backpropagation Neural Network
Thesis Credits	12
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Abstract

This thesis proposes a frontal view face recognition method by using the fractal codes of the face's edge information and the Backpropagation neural network. Only the interesting region, the region covering eyebrows, eyes and a nose, which provides the distinctive facial feature of the whole face is used in this thesis for recognition. Because of its small size, so the reduction in both of the processing time and the storage space are obtained. In the first stage, the edge pattern of such region is encoded by the fractal encoding method for obtaining the reduced identical features. Then, the fractal codes are fed as input to the 4-layer Backpropagation neural network for learning and identifying a person.

This method is performed with 50 distinct subjects and 15 images per person are used for training which takes 1.5 hours training time. For testing with 50 distinct face images, the proposed method takes 10 seconds per image and provides 88 percent recognition rate.

Keywords: Fractal Encoding / Learning / Neural Network / Recognition