ABSTRACT

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Title : **IMPLEMENTATION AND ANALYSIS OF GABOR WAVELET AND ARTIFICIAL NEURAL NETWORK METHODS ON FACE RECOGNITION SYSTEM BASED ON VIDEO SEQUENCES**

In the fields of biometric, facial recognition technology is one of the fastest growing fields. In the last 30 years there have been several proposed methods to increase the performance of face recognition system. So the author propose a face recognition system with gabor wavelet method and artificial neural networks to enhance the performance of the system.

In this final project a feature extraction using gabor wavelet and classification using Artificial Neural Network methods will be proposed. Therefore some stages to get the result desire are the pre-processing stage, to get the object (face detection), then the features extraction, and the last stage is the classification of recognitional face. The video sequences input for the database and for presenting the result will be taken indoor with 9 faces maximum in the frames.

The purpose of this is to tested on parameters contained on the feature extraction classification, and resolution of the input video. The system can run well in testing 9 faces in the frame, with the best accuracy rate in recognizing face obtained at the highest resolution of 720p using 5 spatial frequencies and 6 orientations on Gabor wavelet, while using 8x16 on the diagonal dimension reduction, and 2 hidden neurons in Artificial Neural Network with data retrieval taken from the front of users with average accuracy 77.21%

Keywords: Biometrics, Face Recognition, Gabor Wavelet, Artificial Neural Network