A

Major Project Report II

On

ILLUMINATION INVARIANT FACE RECOGNITION

Submitted in Partial fulfillment of the requirement

For the award of the degree of

MASTER OF TECHNOLOGY

In

(Signal Processing and Digital Design)

Submitted by

Parveen

Roll No. 2k11/spd/13

Under the Guidance of

Assistant Prof. Ajai Kumar Gautam

Department of Electronics and Communication Engineering

DEPARTMENT OF ELECTRONICS & COMMUNIATION ENGINEERING

DELHI TECHNOLOGICAL UNIVERSITY

BAWANA ROAD, DELHI- 110042

July 2013

DECLARATION BY THE CANDIDATE

July 2013

Date: _____

I hereby declare that the work presented in this dissertation entitled **"Face Recognition using Local Binary Pattern"** has been carried out by me under the guidance of **Mr. Ajay Gautam**, Assistant Professor, Department of Electronics & Communication Engineering, Delhi Technological University, Delhi and hereby submitted for the partial fulfillment for the award of degree of Master of Technology in Signal Processing & Digital Design at Electronics & Communication Department, Delhi Technological University, Delhi.

I further undertake that the work embodied in this major project has not been submitted for the award of any other degree elsewhere.

Parveen

DTU/M.Tech/147

M.Tech (SP&DD)

_____

CERTIFICATE

It is to certify that the above statement made by the candidate is true to the best of my knowledge and belief.

Mr. Ajay Gautam

Assistant Professor

Electronics & Communication Department

Dated:——————------------------ Delhi Technological University

ACKNOWLEDGEMENTS

ABSTRACT

Face recognition is one of the most important tasks in computer vision and Biometrics. LBP being a powerful feature for texture descriptor useful for identifying objects or regions of interest in an image. The texture based face recognition is widely used in various applications. The local binary pattern (LBP) method is one of the most successful for face recognition. It is basically based on characterizing the local image texture by local texture patterns. The performance evaluation of Local Binary Pattern (LBP) on simple faces, faces with occlusion and faces with illumination variation. The facial image is divided into local regions and texture descriptors are extracted from each region independently. These facial descriptors are then concatenated to form a global description of the face. The LBP labels for the histogram contain information about the patterns on a pixel-level. These labels are combined over a small region to produce information on a regional level The regional histograms are concatenated to build a global description of the face. Facial features are extracted and compared using K nearest neighbour classification algorithm. Eucledian distance measure is used for classification. The results shows that LBP consistently performs much better than the remaining other models. In the presented work we have proposed a novel approach for face recognition using LOCAL BINARY PATTERNS. For testing the proposed approach, the ORL (Olivetty Research Laboratories) database is used. It consists of 20 subjects, each having 8 orientations.