A Dissertation

On

AGE INVARIANT FACE RECOGNTION

submitted in partial fulfillment of the requirements for the award of degree of

Master of Technology
In
Signal Processing & Digital Design

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DECLARATION BY THE CANDIDATE
JULY 2014

Date: _____

I hereby declare that the work presented in this thesis entitled "**Age Invariant Face Recognition**" has been carried out by me under the guidance of **Mr. Ajai Kumar 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 Engineering Department, Delhi Technological University, Delhi.

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

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

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ABSTRACT

Age Invariant Face Recognition as an emerging research topic in Face Recognition Research Community has many practical applications such as in law enforcement, finding missing children or identifying criminals, passport renewal etc. Facial Aging has not received adequate attention compared to other sources of variations due to pose, lighting, and expression. Most of the studies related to aging focused on age estimation and aging simulation. In the past decade Generative approaches and the discriminative approaches are developed in order to obtain Age Invariant Face Recognition. With the popularity of discriminative method in this thesis I represent age variant face images as SIFT and LBP features, and then combined with multiclass support vector machine for verification.

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LIST OF ABBREVIATIONS

SIFT   Scale Invariant Feature Transform

LBP   Local binary pattern

SVM   Support vector machine

AAM   Active appearance models

ASM   Active shape models

PCA   Principal component analysis

GOP   Gradient orientation pyramid

WLBP   Walsh-Hadamard Transform Encoded Binary Pattern

UDP   Unsupervised Discriminant Projection

LPP   Locality preserving projections

MLBP   Multi Scale Local Binary Pattern

MFDA   Multi-feature discriminant analysis

MDL   Multi-view discriminative learning

LDA   Linear Discriminant Analysis

DOG   Difference of Gaussian

CAR   Correct Acceptance Ratio

CRR   Correct Rejection Ration

EER   Equal error rate

ROC   Receiver Operating Characteristic curve

CMC   Cumulative Match Curve