

A Dissertation

On

AGE INVARIANT FACE RECOGNITION

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

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Submitted By

RAVI PAL

(Roll no.:-2K12/SPD/15)

Under the guidance of

MR. AJAI KUMAR GAUTAM

(Assistant Professor)



Department of Electronics and Communication Engineering

Delhi Technological University

(Formerly Delhi College of Engineering)

Bawana Road, Delhi-110042

(2014)

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.

Ravi Pal
2K12/SPD/15
M.Tech (SPDD)

CERTIFICATE

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

Ajai Kumar Gautam
Assistant Professor
Electronics and Communication Department
Delhi Technological University, Delhi-110042

Dated:

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Ravi Pal
2K12/SPD/15
M.Tech (SPDD)

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
