A

Dissertation

On

Face detection and tracking using improved Camshift

Submitted in partial fulfillment of the requirement

For the award of degree of

Master of Technology

In

Signal Processing and Digital Design

Submitted by

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2011-2013

DECLARATION BY THE CANDIDATE

July 2013

Date: _____

I hereby declare that the work presented in this dissertation entitled **"Face detection and tracking using improved Camshift"** has been carried out by me under the guidance of **Mr. Rajesh Rohilla**, Associate 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.

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CERTIFICATE

This is to certify that the work contained in this dissertation entitled "**Face detection and tracking using improved Camshift** "submitted in the partial fulfillment, for the award for the degree of M.Tech in Signal Processing and Digital Design at **DELHI TECHNOLOGICAL UNIVERSITY** by **KHUSHBU GUPTA, ROLL NO. 2K11/SPD/25** is carried out by her under my supervision. The matter embodied in this project work has not been submitted earlier for the award of any degree or diploma in any university/institution to the best of my knowledge and belief.

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Abstract

This paper addresses face Detection and multifarious tracking using improved CamShift and texture algorithm. Face is detected by calculating texture information. And Object's motion is taken into account through location and trajectory. Camshift is used to follow trajectory of the object. The Continuously Adaptive Mean Shift Algorithm (CamShift) is an adaptation of the Mean Shift algorithm for object tracking. It is a well-established and fundamental algorithm for kernel-based visual object tracking. It adjusts Search window itself in size. It will adjust itself for the size of face as the person moves closer or further from camera. And local binary pattern (LBP) technique is used to extract the texture features. LBP is a non-parametric kernel which summarizes the local spatial structure of an image and it is invariant to monotonic gray-scale transformations and rotation.

Key words: *Face tracking, CamShift, Multifarious Features and LBP*

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Dedication

I dedicate this thesis
To my family, my teachers and my friends for
Supporting me all the way & doing all the
Wonderful things for me.