A

Dissertation

On

Robust Human Detection for Surveillance

Submitted in Partial fulfilment of the requirement

For the award of the degree of

MASTER OF TECHNOLOGY

In

(Signal Processing and Digital Design)

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DECLARATION BY THE CANDIDATE

July 2013

Date: _____

I hereby declare that the work presented in this dissertation entitled **"Robust Human Detection For Survillance"** 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

It is certified that the dissertation entitled **"Robust Human Detection for Surveillance"** is a work of **SUBRADEB CHOUDHURY** Roll No. **2K11/SPD/24**, a student of Delhi Technological University. This work was completed under my direct supervision and guidance and forms a part of the Master of technology in Signal Processing and Digital Design course and curriculum. He has completed his work with utmost sincerity and diligence.

The work embodied in this major project has not been submitted for the award of any other degree to the best of my knowledge.

Rajesh Rohilla
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A successful and satisfactory completion of any project is the outcome of invaluable aggregate contribution of different personal fully in radial direction, explicitly, or implicitly.

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ABSTRACT

Video Surveillance has received tremendous attention in the present scenario. It has a wide range of applications like it can be used in Border areas of a country or in market areas as well as in the restricted areas for monitoring objects. Human Detection is a field of Video Surveillance where monitoring of humans take place i.e. the human is detected first and its trajectory is estimated for the purpose of monitoring.

In this project, a robust human detection method is proposed. The Human Detection System consists of 2 stages. First stage involves Image Pre-processing where the Motion region is extracted and Image Segmentation is applied to this motion region. The second stage classifies the segmented image as a human or a non-human based on Aspect Ratio of Human. So, we can say that the Motion region is incorporated with the Aspect Ratio feature to propose a Robust Human Detection Method.

A Dataset is made where the background colour matches with the Human Skin Colour. In this situation it is very difficult to track the human. We propose a system where we can track human under such conditions. The system is tested in PETs Database also and an overall Detection Rate of 85% is reported. However, the Detection rate gets reduced drastically when the human is occluded in the scene.

Keywords– Frame Differencing, Aspect Ratio, Human Detection, HoG

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