A

Dissertation

On

OBJECT RECOGNITION USING SIFT

Submitted in Partial fulfilment of the requirement

For the award of the degree of

MASTER OF TECHNOLOGY

In

(Signal Processing and Digital Design)

Submitted by

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July 2013

DECLARATION BY THE CANDIDATE

<div align="right">Date: _____</div>

I hereby declare that the work presented in this dissertation entitled **"Object Recognition using SIFT"** has been carried out by me under the guidance of Mr. **Rajesh Birok**, 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 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

Object recognition systems constitute a deeply entrenched and important component of modern intelligent systems. Research on object recognition algorithms has led to advances in research and once automation through the creation of optical character recognition systems. It is very crucial for assembly-line industrial inspection systems, as well as chip defect identifications systems .It has also led to significant advances in medical imaging, defence and biometrics. In this thesis we discuss the evolution of computer-based object recognition systems over the last fifty years, and overview the successes and failures of proposed solutions to the problem. We survey the approaches adopted over the years in attempting to solve the problem, and highlight the important role that active approaches must play in any solutions that bridges the interpretation gap in the proposed object representations, while simultaneously leading to efficient learning and inference algorithms. From the earliest systems which dealt with the character recognition problem, to modern visually-guided systems that can purposively search entire rooms for objects, we discuss that a common thread of all such systems is their fragility and their inability to generalize as well as the human visual system can. At the same time, however, we demonstrate that the performance of such systems in strictly controlled environments often vastly outperforms the capabilities of the human visual system. We conclude our survey by finding that the next step in the evolution of object recognition algorithms will require radical and bold steps forward in terms of the object representations as well as the learning and inference algorithms used.