PREFACE

Vision is the most powerful among five human senses. Visual information, conveyed in the form of images gives better impact than textual information. The fields of the digital image processing have grown rapidly over the past decades. Digital image processing is concerned primarily with the extraction of useful information from the images.

This thesis is basically, focused on invariant features detectors for the image registration and mosaicing applications. Image registration is the process of determining the optimal spatial transformation that maps one image to another. For example, images captured at different time intervals and/or from different perspectives, from different imaging devices.

In this thesis, we presented a successful detector using steerable filters. Its performance is compared with the four detectors, viz., Harris, SUSAN, KLT and FAST. Numerous registration and mosaic experiments are presented using synthetic, building and other images. We demonstrated that our detector enables accurate and efficient image registration and mosaic applications.