Analysis of Image Retrieval Techniques

A Dissertation submitted towards the partial fulfilment of
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CERTIFICATE

This is to certify that the dissertation title "**Analysis of Image Retrieval Techniques**" submitted by **Ms. Arunima Sidhu, Roll. No. 2K14/VLS/04**, in partial fulfilment for the award of degree of Master of Technology in "**VLSI design and embedded systems",** run by Department of Electronics & Communication Engineering in Delhi Technological University during the year 2014-2016., is a bonafide record of student's own work carried out by her under my supervision and guidance in the academic session 2015-16. To the best of my belief and knowledge the matter embodied in dissertation has not been submitted for the award of any other degree or certificate in this or any other university or institute.

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DECLARATION

I hereby declare that all the information in this document has been obtained and presented in accordance with academic rules and ethical conduct. This report is my own work to the best of my belief and knowledge. I have fully cited all material by others which I have used in my work. It is being submitted for the degree of Master of Technology in Signal Processing & Digital Design at the Delhi Technological University. To the best of my belief and knowledge it has not been submitted before for any degree or examination in any other university.

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ABSTRACT

In the recent years we have observed a rapid rise in the size of digital image compilations. Giiga bytes of test images are created daily by both civilian as well as military equipment. However to manage such incredible amount of data pouring in everyday from so many sources we need to have an efficient storage and retrieval system for images. Since the 1970s work on retrieval of images is being actively carried on. Image retrieval can be looked upon from two angles- one his text based and the other being visual based.

We have divided our work in two phases – first we have tried to retrieve text from an image using Support Vector Machines (SVM) and Maximally Stable Extremal Regions(MSER), second we retrieve image using the Bag of Visual Words technique (BoVW) where we have worked on inscription images.

The text retrieval is carried on by first getting the output of images containing text from the SVM and then further processing of the SVM result using MSER. The proposed method for inscription image retrieval can be used to recognize inscriptions in languages from across the world. SURF (speeded up robust features) is used as an image feature extractor. A visual vocabulary is created by representing the image as a histogram of visual words which helps in the retrieval process. Usage of SURF ensures scalability, faster processing better results with darkened and blurred images. We demonstrate the method on a combination 300 inscriptions images comprising of several languages.

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