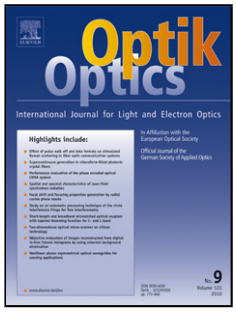

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A new image feature descriptor for content based image retrieval using Scale Invariant Feature Transform and Local Derivative Pattern

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Abstract

This paper presents a new methodology to retrieve images of different scenes by introducing a novel image descriptor. The proposed descriptor works with Scale Invariant Feature Transform (SIFT), Histogram of Oriented Gradients (HOG), Local Binary Patterns (LBP), Local Derivative Pattern (LDP), Local Ternary Pattern (LTP) and any other feature descriptor that can be applied on the image pixels. As the proposed descriptor considers a group of pixels together, higher level of semantic is achieved. In this work, a new image descriptor using SIFT and LDP is introduced that is able to find similarities and matches between images. The proposed descriptor produces highly discriminative features for describing image content. Four image datasets are used for evaluating our proposed descriptor. Comprehensive experiments have been conducted using various classifiers and different image features to show the superiority of the proposed method.

Keywords. *Content Based Image Retrieval, SIFT, HOG, LBP, LTP, LDT.*

1. Introduction

In many computer vision tasks such as image retrieval, image classification, object recognition and moving object detection, the most important stage is image feature extraction which is done