Image Search Engine

# Abstract

## Introduction

This, for the most part, can be used as a search retrieval system. Trying to search images based on text or tags, can get very tedious. Sometimes, it could become impossible if there exists no text or tags, or if the images are tagged incorrectly. We can’t solely rely on such tags to do our searching for us. Thus, I implemented an algorithm using which will use the features and content of an image to search for another image in the given dataset. By extension, this has multiple uses, and that depends on the searching mechanism that you intend to use. For example, in the medical field, doctors would like to search for tumors in the human body using an already existing image of a tumor. They can use this algorithm, compare both the images and conclude whether there is a tumor or not. In this project, using a given image we try to retrieve images having similar features, using the background of the image. This will result in all the images chosen to have a similar background setting as the original chosen image. For example, if a picture is taken in sunset, then the engine will retrieve other pictures taken during sunset as well.

## Problem Statement

The basis of the problem statement is as follows… On receiving a query image, the engine must try to analyze the features of the image and compare it with the already existing images in the dataset. It must then try to retrieve those images which have similar background features. Therefore, this will result in retrieved images to have similar or same background. Thus, we can choose an image in the same or similar background but with a different central focus. This algorithm doesn’t focus on face recognition. It only focuses on analyzing the background.

## Procedure

There are four programs written in python altogether. ColorDescriptor, Search, Searcher, Index.

Primarily, we must first index and ready the dataset for use. This is done with the help of the index function. The index program will acquire all the features of the images in the dataset and index them as well. This is also known as readying the dataset.

In this program, we use the background RGB colors to analyze the dataset images. Here the function index runs over the dataset and call the colorDescriptor program. This color Descriptor program will analyze the given image and select the RBG values and store them along with the index. When a query image is given, we will analyze the query image and select it’s features and then compare it with the given images.