Retrieval of GIF Images

Burak Enes BEYGO
Master's Degree Student
Student Number: N19134235
Computer Engineering Department
Hacettepe University
Ankara, Turkey
n19134235@cs.hacettepe.edu.tr

***Abstract*—This document represents the project proposal for CMP681 Information Retrieval class.**

I. Introduction

There are three decided project topic tracks for the Information Retrieval class. These tracks vary from each other regarding their end goals. The first one is the research track which consists writing a paper in conference format. The second one is the software track whose aim is to develop an open source software. The third one is the startup track which is about creating an application-oriented demo product that will be useful for end users.

My track choise for the class project is research track. I am planning to write a paper that will be suitable for submission to a conference in information retrieval area.

II. Problem and Resolution

A. Main Question

First of all, I thought about retrieving images, but there are a lot of works have been done in this area. I dig deeper and I found a good question: how do we store and retrieve GIF formatted images, and can I come up with an idea to retrieve these images faster? There is not much work for this topic. So, I decided to make a research.

GIF images are not simply images, and they are not like a video format as well. A set of images comprise a GIF image. So, there must be exceptional work to retrieve this kind of files.

B. Novelty of the Work and Solution

There might be existing researches about this topic. You can see one related research in the *References* section [1]. I am planning to come up with a solution to retrieve GIF images with higher resemblance results. The images in the GIF images might have different values of RGB and hue, saturation, value. I think that the algorithm to find the most similar GIF image in a given set will be a valuable outcome since GIF images are commonly used in social media. If people would want to find a GIF image which resembles the one they given to the retrieval system, they will find the similar GIF images with a high success rate.

C. Technical Details and Usefulness

First, I will need to find a way to compute the differences between GIF images. Then, I will be ready to apply the algorithm to give the most similar image as a result. Since there are a lot of images exist in one GIF image, taking the average of RGB values of the image parts and compare those parts may be one solution. On the other hand, taking the gradient values of the overall images might be a better solution and that might give better results. I am planning to compute the retrieval time by implementing a simple software project. By this way, I will learn which algorithm will give the better result. I will share the results in detail.

D. Timeline

First of all, I will do a detailed research about this topic. I will read a number of papers related to the GIF image retrieval area. I am planning to search through all papers until April 26, 2020. I have to think about the algorithms in detail. Algorithm or algorithms that I use for storing and retrieving will be decided until 10 May, 2020. Finally, I will write the paper explaining the details about algorithm and success results of the retrieval process until 10 June, 2020.

References

[1] Paiz Reyes, Evelyn & Nunes, Nadile & Yildirim Yayilgan, Sule. (2018). GIF Image Retrieval in Cloud Computing Environment. 10.1007/978-3-319-93000-8_30.