A Flask based Application for Recommending the Similar Kind of Dresses

Reshma B Nair[1*], N Susila[2], Ranjeetha Priya K[3], Sruthi Anand[4]

[1, 3, 4] Assistant Professor, [2]Head of the Department,
Sri Krishna College of Engineering and Technology, India
*Corresponding Author Email: reshmab@skcet.ac.in[1].

Abstract

The growth of online social networks and the amount of information shared through it are immense in the recent years. It provides information in all fields such as education, sports, fashion, etc and also updates us with all the latest news that is happening around the world. Some of the popular social media sites are Facebook, Twitter, Instagram and it has become a platform for people to easily communicate and share information. Nowadays business people use social media as their means for communication. Fashion industry is one of the businesses which frequently changes and the social media is considered to be as the cheapest and easiest means to communicate. Hence an application is created which obtains the photos of the user from their facebook account and suggests the similar kind of dresses based on their collection of dresses.

Keywords: Dress, social networking, fashion.

1. Introduction

The emergence of social media has transformed the world and its entire way of functioning, bringing the world and its people closer. Over the last decade social media has become an effective marketing tool; it has not only created a new dimension of marketing but has also provided many opportunities to the marketers to create brand awareness among consumers. It is now considered as the most transparent engaging and interactive form of public relations. The fashion industry is becoming more accessible to the general public due to the social media. Nowadays the photos that are taken are instantly uploaded in the social media. Hence a vast amount of data can be obtained from the social media sites. This methodology will help to analyze the kind of dress the user is interested and recommendation of similar kind of dresses can be made based on the interest.

Social media has become an integral part in the fashion industry. Fashion trend refers to the buying habits of the consumers at a particular period of time. This application helps the consumer to understand the current availability and also make their shopping easier by reducing the time consumption for searching the similar dresses.

2. Impact of Social Media on Society

The youth of today mainly uses the social networking sites inorder to share their ideas and emotions. They would post or tweet anything that they have in mind as well as "like" or "share" posts, pictures or links which they think are interesting. There are those who would take pictures of themselves just to post them in Facebook while there are others who tweet every action, every

Activity that they are doing on Twitter. Apart from expressing their ideas and thoughts, people also use it as a means for communication.

It is the fastest means of sharing information and people also posts the photos that they have taken recently at different scenarios. There is a lot of positive and negative impact of social media on the society.

3. Literature Review

In paper [1] the author describes about how to create a web application using python flask and MySQL. The database tables and stored procedures were created and the signup functionality was implemented.

In paper [3] the author represents a method for facial image representation using local binary patterns. The face region is divided into several regions from which the LBP features were extracted.

In paper [4] the author describes about how the similar products are obtained using python and the recommendation can be done based on the interest of the customer. This helps in improving the market value and also reduces the time of the customer to find the product that is required.

4. Proposed System

The proposed architecture diagram gives an idea of how the application is done inorder to download the photos from facebook and suggest the similar kind of dress based on their collection and also the dress that has to be worn based on the weather conditions. The input data stream is the images that are obtained from the user's facebook page. The image that is obtained is stored in a database. The face recognition and detection is then done inorder

to find out the exact user from the obtained set of images. After the exact user who has used the application to generate a wardrobe and find out the similar dresses available in the market is identified, the segmentation of dress is done and then the user can find out the similar kind of dresses that are available in the market by giving one of their dresses as input to the system. It also suggests the climatic conditions of a particular place and the type of dress that has to be worn at that place by analyzing the weather conditions at that particular place.

4.1. Recommending Similar Dresses

The schematic representation for finding out the similar kind of dresses is as follows
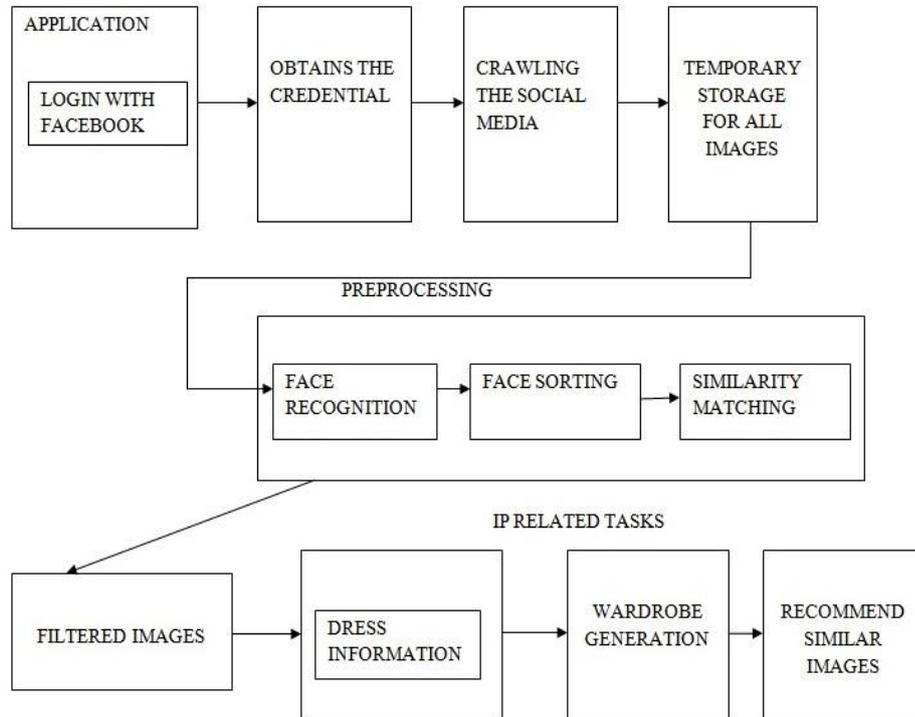
Fig. 4.1.1: Schematic representation for finding similar dresses

4.2 Flask based Application

Flask is a web framework that is written in Python and the latest version is Flask 0.11. Hence a flask based application is created for downloading the images of the user from their respective facebook account [1].
The steps involved are
• Registering the application
• Obtaining the keys
• Authenticating the application with Facebook
After the configuration of the application, the user is redirected to the login page.

Fig. 4.2.1: Login Page

Then the user clicks the Login with Facebook button. It initially checks whether the user is logged in. If the user is logged in it initiates the authentication process [2].
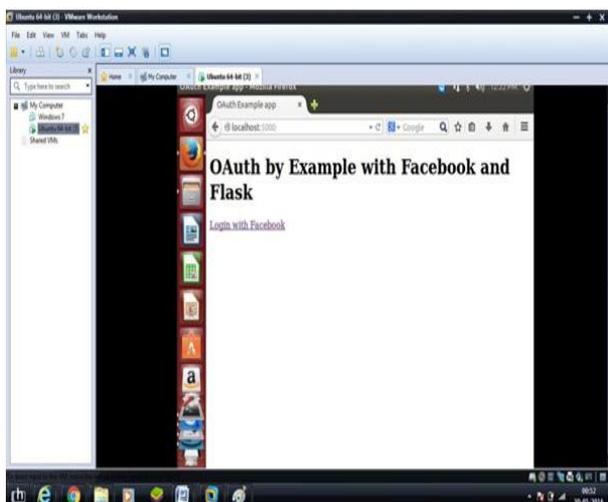
Fig. 4.2.2: Page for entering credentials

Then the user will be asked to authorize the application's access to their account.
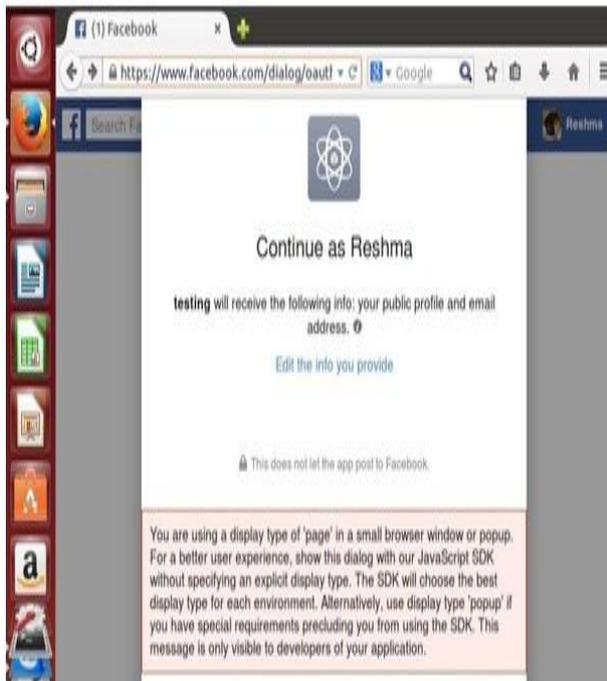
Fig.4.2.3: Page for Authorization

An SQLite database is used to store the data that is obtained from the facebook profile. A user_profile table is created and the information of the user is stored in that table.
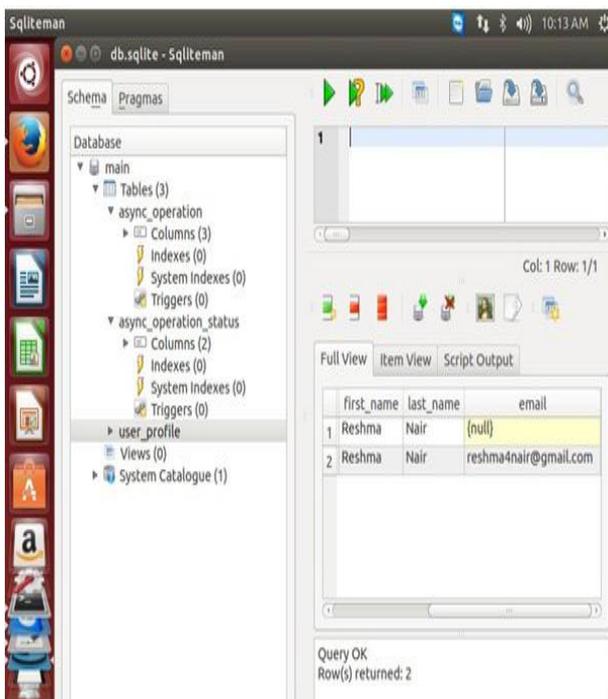

Fig.4.2.4: SQLite Database

4.3 Face Detection and Recognition

The default face recognition algorithm in OpenBR is based on the Spectrally Sampled Structural Subspaces Features (4SF) algorithm.

The principal steps in 4SF algorithm is [3]

- Detection
- Normalization
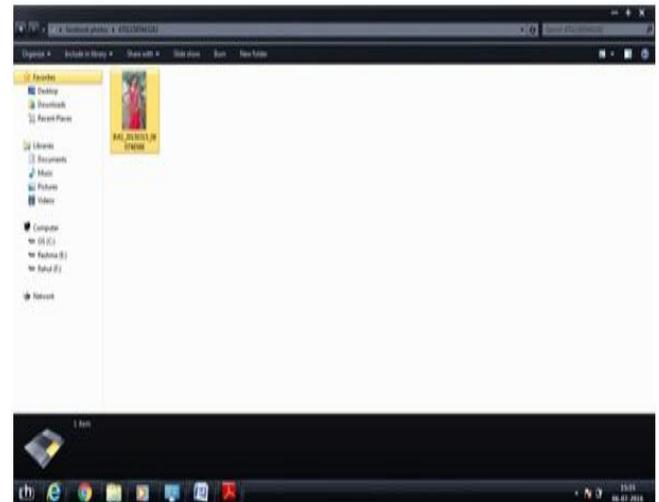- Representation
- Extraction
- Matching

Training Dataset

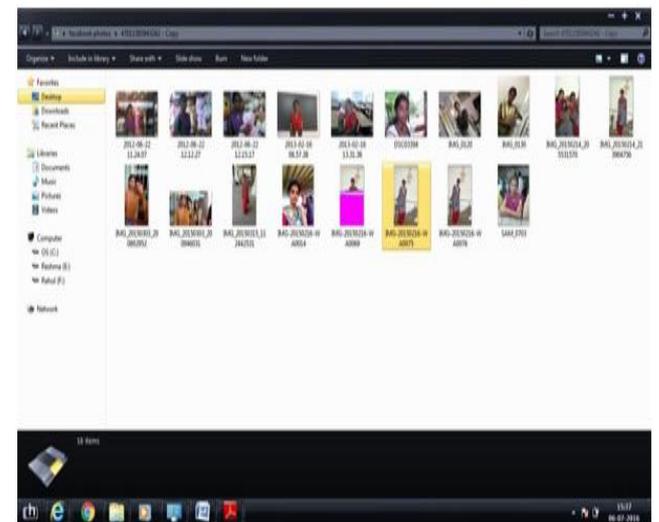
Fig.4.3.1: Training Dataset

Testing Dataset

Fig.4.3.2: Testing Dataset
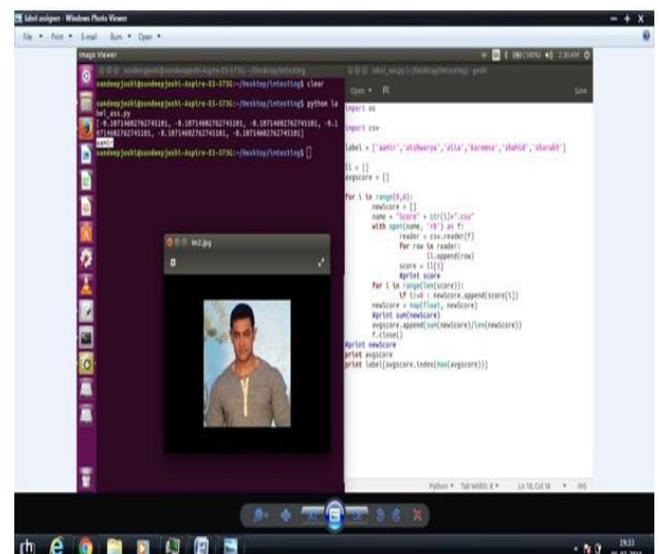
Face Detection and Recognition

Fig.4.3.3: Face Detection and Recognition

4.4 Similarity Matching

The recommendation is made based on the collection of dresses in the wardrobe. A dataset of about 2000 images is considered for analysis.

The similar dresses are identified by calculating the eucledian distance between the image features of two images. The similar dresses are identified and displayed for the user.

This will help the user to identify the similar kind of dresses that are available in the market. Here the option is to find out 10 similar dresses [4].
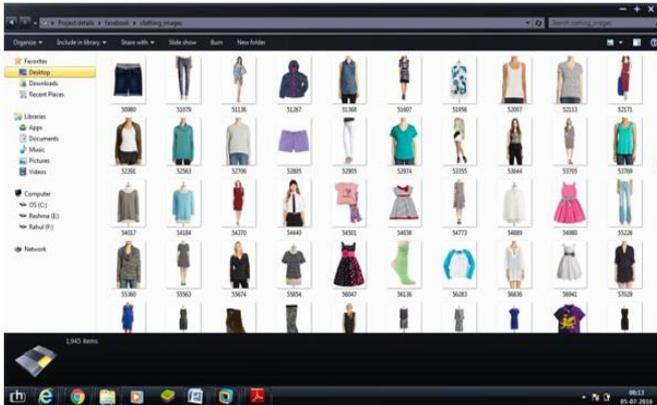
Market Dataset

Fig.4.4.1: Market Dataset

When the value of N_IMG is 500 it displays the similar dresses but the accuracy is less and when the value of N_IMG is 1500 it displays the similar dresses with more accuracy.

Fig.4.4.2: value of N_IMG is 500

Fig.4.4.3: Value of N_IMG is 1000

5. Conclusion and Future Enhancements

The analysis of a user wardrobe will help to understand the interest of a user and also recommend the similar kind of latest collections available in the market. This will help the consumer to understand the current availability and also make their shopping easier by reducing the time consumption for searching the similar dresses.

The recommendation can also be done based on the weather to give an idea to the user about the climatic condition of a place that the user is about to travel and also let them know the type of dress that they must wear based on the climatic conditions at the particular place during their time of travel.

The analysis can also be extended to identify the interest based on the colour, brand etc. The weather recommendation can be used to display the dress by analysing the wardrobe of the user.

References

[1]   https://code.tutsplus.com/tutorials/creating-a-web-app-from-scratch-using-python-flask-and-mysql--cms-22972

[2]   https://github.com/mitsuhiko/flask-oauth/blob/master/example/facebook.py

[3]   T. Ahonen, A. Hadid, and M. Pietikainen, Face description with local binary patterns: Application to face recognition. IEEE Trans. on Pattern Analysis and Machine Intelligence, 28(12):2037–2041, 2006

[4]   http://blog.untrod.com/2016/06/simple-similar-products-recommendation-engine-in-python.html

[5]   S.Sheeba Rani, R.Maheswari, V.Gomathy and P.Sharmila, "Iot driven vehicle license plate extraction approach" in International Journal of Engineering and Technology(IJET) , Volume.7, pp 457-459, April 2018

[6]   https://github.com/groveco/content-engine

[7]   FaizanAhamed, AaimaNajam, ZeeshanAhmed, Image based Face Recognition and Detection: "State of the Art", International Journal of Computer Science Issues

[8]   Frejlichowski D, Czapiewski P, Hofman R. Finding Similar Clothes Based on Semantic Description for the Purpose of Fashion Recommender System. Asian Conference on Intelligent Information and Database Systems[C]. Springer Berlin Heidelberg, 2016.

[9]   R.Maheswari, S.Sheeba Rani, V.Gomathy and P.Sharmila, "Real Time Environment Simulation through Virtual Reality" in International Journal of Engineering and Technology(IJET) , Volume.7, No.7, pp 404-406, April 2018

[10]   K. T. Talele, S. Kadam, A. Tikare, Efficient Face Detection using Adaboost, "IJCA Proc on InternationalConference inComputational Intelligence", 2012

[11]   Dipon Kumar Ghosh , Prithwika Banik , Dr. S. Balakrishnan (2018), Review-Guppy: A Decision-Making Engine for Ecommerce Products Based on Sentiments of Consumer Reviews", International Journal of Pure and Applied Mathematics, Volume 119, No. 12, 2018, pp.1135-1141.

[12]   S. Balakrishnan, A. Jebaraj Rathnakumar and K. N. Sivabalan, "Information Security in D-Media (Digital Media)", ARPN Journal of Engineering and Applied Sciences. May 2016, Vol. 11, No. 9, pp. 5707- 5710.