SMART FASHION RECOMMENDER APPLICATION

ABSTRACT:

In recent years, an increase in the standard of living, peoples attention gradually moved towards fashion that is concerned to be a popular aesthetic expression.so our project aims to recommend a fashion to the user. The user will login into the website and go through the products available on the website. Instead of navigating to several screens for booking products online, the user can directly talk to Chatbot regarding the products. Get the recommendations based on information provided by the user. This will develop by using IBM Cloud, HTML, Javascript, Cloud Object Storage, Python-Flask, Kubernates, Docker, IBM DB2, IBM Container Registry.

LITERATURE SURVEY:

Wei Dai et al [1] The proposed system is Clothing Fashion Style Recommendation System (CFSRS). A clothing dataset collected from Internet containing 27,375 men's and women's clothing images of 11 clothing categories. Recommendation system that can differentiate fashion categories of query images. This framework that divides the system into three decoupled and autonomous components in order to provide a highly flexible and extensible system. Then describe an implementation of this framework on a Linux server. To demonstrate this clothing recommendation system there are two user interfaces, including a Web Application and an iOS App. Lastly, The approaches to secure the system and user privacy.

Web server provide service to handle HTTP request, while in CFSRS it provides service for Web Application and the presenter (i.e. PHP code). PHP-FPM is a program to execute PHP code. When Nginx found the HTTP request is ponit to a ".php" file, it will calling PHP-FPM to execute the PHP code in the ".php" file. In CFSRS, PHP-FPM provides

service exclusive for the presenter. For Structured Query Language (SQL) server (i.e. database server), we use MariaDB. SQL server provides service to let SQL client to access and query data from database. In CFSRS, the SQL client is the model (i.e. Daemon program), so the SQL server provides service to the model. Secure Shell (SSH) Daemon and File Transfer Protocol (FTP) Daemon are mainly used to maintain the Linux Server.

Problem Identified:

Here MariaDB is used as database server. MariaDB is somewhat liable to bloating. Its central IDX log file, in particular, tends to become very large after protracted use, ultimately slowing performance. Caching is another area where MariaDB could use work, it is not as fast as it could be, which can be frustrating. Despite all the initial promises, MariaDB is no longer completely compatible with MySQL. If you are migrating from MySQL, you will have some re-coding to do.

Nikita Ramesh et al [2] The proposed system is Outfit Recommender System. This system is an event-based clothing recommendation system which uses object detection. Trained a model to identify nine events/scenarios that a user might attend: White Wedding, Indian Wedding, Conference, Funeral, Red Carpet, Pool Party, Birthday, Graduation and Workout. Trained another model to detect clothes out of fifty-three categories of clothes worn at the event. Object detection gives a mAP of 84.01.

First collect raw data from a variety of online sources for nine events/scenarios. Collected 400 images for every category. To identify the event, we look for objects commonly found at these events. Obtain 250 images for every object and train Tensorflow Object Detection, starting with image labeling. In order to label images, we write a Python script. Using this script, we can drag bounding boxes around objects and label them with their appropriate names. This will generate an XML file with the bounding box information and more information about the image like the file name and file location. This XML file can later be used to feed data into Tensorflow in the required format. Convert the XML files into CSV and CSV files into TFRecord files then start training different models using this data.

Once we find the top categories of clothes, we obtain items of clothing from the event images.

Problem Identified:

It recommends only current clothing database to suggest clothes. It does not shows online store database. So that a user could not directly buy the recommended clothes if he/she wants to.

Tariq HUSSAIN et al [3] The proposed system is Design and implementation of clothing fashion style recommendation system. The visual characteristics of the image are used as input conditions for the query system, and a result the system will recommended nearest images and data set. This research designs and implements two-stage deep learning-based model that recommends a clothing fashion style. This model use deep learning approach to extract various attributes from images with clothes to learn the user's clothing style and preferences. These attributes are provided to the correspondence model to retrieve the contiguous related images for recommendation. Based on data-driven, this thesis uses convolutional neural network as a visual extractor of image objects. This experimental model shows and achieves better results.

This recommendation system works with the data set to track user input data features and extracted features from data set upon which new predictions and recommendations are made. The recommendation browses the dataset for user data and available dataset features. Then, it uses the algorithm to go over the input user data and determine similarities between users input data and stored dataset features. Finally, it makes recommendations. When the repository stores data, the recommender filters the data it needs from the repository using the algorithm. When a signal is sent to the algorithm about what data are needed for filtering, the algorithm computes the similarity. The similarity results are then transferred to the recommender system which in turn sends recommendations to the webserver and finally to the respective user.

Problem Identified:

Here constructed the model of stacked CNN to predict the features specific to these attributes and to train the models with the dataset to generate accurate predictions regarding almost all forms of images. If the images contain some degree of tilt or rotation then CNNs usually have difficulty in classifying the image. CNN sometimes may lead to low accuracy results if training dataset is poor.

Samit Chakraborty et al [4] In recent years, the textile and fashion industries have witnessed an enormous amount of growth in fast fashion. On e-commerce platforms, where numerous choices are available, an efficient recommendation system is required to sort, order, and efficiently convey relevant product content or information to users. Image-based fashion recommendation systems (FRSs) have attracted a huge amount of attention from fast fashion retailers as they provide a personalized shopping experience to consumers. With the technological advancements, this branch of artificial intelligence exhibits a tremendous amount of potential in image processing, parsing, classification, and segmentation. Despite its huge potential, the number of academic articles on this topic is limited. The available studies do not provide a rigorous review of fashion recommendation systems and the corresponding filtering techniques. To the best of the authors' knowledge, this is the first scholarly article to review the state-of-the-art fashion recommendation systems and the corresponding filtering techniques. In addition, this review also explores various potential models that could be implemented to develop fashion recommendation systems in the future. This paper will help researchers, academics, and practitioners who are interested in machine learning, computer vision, and fashion retailing to understand the characteristics of the different fashion recommendation systems.

Problem Identified:

An effective recommendation system is a crucial tool for successfully conducting an e-commerce business. Fashion recommendation systems (FRSs) generally provide specific recommendations to the consumer based on their browsing and previous purchase history. Social-network-based FRSs consider the user's social circle, fashion product

attributes, image parsing, fashion trends, and consistency in fashion styles as important factors since they impact upon the user's purchasing decisions

Venugeetha et al[5] This proposed system is fashion recommendation system.A recommendation program is a comprehensive suite of web applications that includes predicting user responses to options. The recommendation system has been a hot topic for a long time. A recommendation program commonly called Recommendation Techniques, they are simple algorithms that aim to provide the most relevant and accurate information to the user by filtering useful items from a large pool of information resources. Recommendation engines discover data patterns in the data set by studying consumer preferences and generating results related to their needs and interests. The main objective of this work is to Develop a fashion recommendation system which answers the queries related to fashion shopping.To identify the fashion type of given input image.If the given fashion image is valid then similar set of clothing will be recommended.Retrieving the similar search query products from different e-commerce websites.

Problem Identified:

To recommend a cloth, we develop two inceptions based convolutional neural networks as prediction part and one feed forward neural network as recommender. we reach to 98% accuracy on colour prediction, 86% accuracy on gender and cloth's pattern predictions and 75% accuracy on clothing recommendation

Summary of Literature Survey:

Author	Year	Title	Methods used	Limitations
Wei Dai	2015	Clothing Fashion Style Recommendation System	Nginx PHP-FPM MariaDB OpenSSH	MariaDB caching is not as fast. MariaDB will slow the application performance
Nikita Ramesh	2018	Outfit Recommender System	Tensorflow OpenCV NumPy Protobuf	Not supporting to directly buy the recommended clothes.
Tariq HUSSAIN	2021	Design and implementation of clothing fashion style recommendation system	CNN algorithm	Leads to low accuracy.
Samit Chakraborty	2021	Fashion Recommendation Systems, Models and Methods	RNN algorithm	Recommendation by only previous purchase history
Venugeetha	2022	Fashion recommendation system using CNN	OpenCV Numpy Pillow	Accuracy rate is low.

Reference:

1. Wei Dai, Clothing Fashion Style Recommendation System, Northeastern University, May 2015.

2. Nikita Ramesh, Outfit Recommender System, San Jose State University, March 2018.

3. Tariq HUSSAIN, Design and implementation of clothing fashion style recommendation system using deep learning, December 2021

4. Samit chakraborthy, Fashion Recommendation Systems, Models and Methods ,June 2021

5. Venugeetha, Fashion recommendation system using CNN, Don Bosco Institute of Technology, Bengaluru, India, April 2022.