
GET DRESSUP WITH ME (FASHION RECOMMENDATION SYSTEM)

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ABSTRACT

In the rapidly evolving world of fashion, it can be easy to find the perfect outfit that reflects your personal style among the many clothing options available. To overcome this challenge, we introduced Recommended Recommendations (FRS), designed to help users find fashion options based on their taste and style. Our FRS leverages advanced machine learning algorithms and data-driven insights to analyze user interactions, clothing features, and instant fashion trends to create personalized recommendations. Integrating user analysis, collaborative filtering, and content-based filtering, our system provides rich and diverse recommendations to improve user experience. With this project, we aim to simplify the fashion discovery process, enable users to discover new trends, and transform the experience and use of fashion in the digital age.

I. INTRODUCTION

In the dynamic world of fashion, like, characterized by ever-evolving trends and an abundance of choices, finding the perfect outfit that aligns with one's personal style can often feel like a daunting task. The rise of online shopping has only amplified this challenge, inundating consumers with, like, a seemingly endless array of options and leaving many, feeling overwhelmed and fatigued by decision- making. In response to this common dilemma, our project introduces a Fashion Recommendation System (FRS), like, a groundbreaking solution driven by data-driven algorithms. By leveraging user profiling and real-time trend analysis, our FRS aims to revolutionize the way individuals discover, explore, and engage with fashion.

At the core of our project lies Python like versatile and widely acclaimed programming language known for its clarity and simplicity. Python's extensive libraries and frameworks make it an ideal choice for developing complex applications like fashion recommendation systems, offering seamless integration with other technologies. Furthermore, the high-level Python web framework Django provides developers with the tools needed to quickly create robust and secure online applications. The fundamental concept underlying our project, built with Django and Python is to provide users with a user-friendly web-based platform where they can submit their clothing preferences and receive personalized outfit recommendations.

The utilization of HTML and CSS plays a crucial role in enhancing the user experience and security of our fashion recommendation system. The creation of a registration and login page using HTML and CSS aims to provide users with a seamless and secure means of accessing the platform. New users can easily create accounts by entering their email address, password, and username, along with optional information, like their name and birthdate. Upon registration, users gain access to their personalized accounts, where they can explore fashion recommendations tailored to their preferences.

One of the key priorities in the development of our system is the protection of user data and, passwords. To ensure maximum security, passwords are encrypted and stored securely, following industry best practices. Additionally, password policies are enforced to enhance security measures further.

In conclusion, our project represents a significant advancement in the realm of fashion technology, offering users a seamless and personalized experience in discovering and exploring fashion trends. By leveraging the power of Python, Django, and Visual Studio Code, we have created a robust and secure fashion recommendation system that empowers users to curate their distinctive style with confidence and ease. Through the integration of HTML and CSS, we ensure a user-friendly interface that prioritizes security and accessibility, setting a new standard for fashion recommendation platforms in the digital age.

- The main goal of utilizing HTML and CSS to create a registration and login page is to give users an easy-to-use and safe way to access a website or web application.
- Registration Page: New users can create accounts on this page by entering their email address, password, and username, along with any further information they may occasionally choose to include, such as name and birthdate.
- Login Page: By providing their username or email address and password, registered users can access their accounts via the login page.
- Protection of Passwords: Ensuring that passwords are encrypted and not stored in plain text, as well as enforcing password policies (such as requiring a combination of uppercase, lowercase, numerals, and special characters) to improve security.

II. ASSISTIVE TECHNOLOGY

For our Fashion Recommendation System project, we employ a variety of assistive technologies and frameworks to ensure a seamless and engaging user experience. Front-end technologies like HTML, CSS, JavaScript, and Bootstrap serve as the foundation for creating an intuitive user interface! While back-end development is facilitated by the Python Django framework. Here's a detailed overview of the technologies utilized in our project:

1. HTML:

HTML plays a pivotal role in shaping the user interface of our fashion recommendation system. It allows for us to create interactive forms for users to input their preferences, browse recommended items, and engage with various platform features! Additionally, HTML enables multimedia elements integration such as images and videos to enhance the visual appeal of the recommendation system

2. CSS:

Cascading Style Sheets (CSS) are instrumental in refining the aesthetics and layout of our recommendation system's user interface. By applying CSS styling to HTML elements, we ensure consistency, readability, and visual appeal across different screens and devices. CSS enables us for customizing the appearance of buttons, navigation menus, and other interface components, providing users with a visually cohesive and pleasant experience.

3. JavaScript:

JavaScript enhances the interactivity and functionality of our fashion recommendation system! Through JavaScript, we implement dynamic features such as real-time filtering of fashion items, interactive sliders for adjusting preferences, and pop-up notifications for feedback and alerts! JavaScript frameworks like Bootstrap further streamline the development process by offering pre-built components and responsive design capabilities.

4. Python Django:

As the backbone of our back-end infrastructure, Python Django empowers us to build a robust and scalable fashion recommendation system. Django facilitates the management of user data, recommendation algorithms, and integration with external APIs for retrieving fashion trends and product information. With Django's built-in security features and modular design, we ensure the reliability and efficiency of our recommendation system's backend operations.

5. MySQL:

User Profiles: Generate a MySQL database, which will be used to save users' profiles information like full name, email, password hash, any further demographic data. It is here then that users are able to create individualized accounts where they can store their previously favored items and interactions with the recommendation system.

Clothing Items Database: Create a data table to enter data about clothes, namely "category" (for example, "tops", "bottoms", "dresses"), "colour", "style", "brand", "price", and URLs for the image references. This can be the database where the system stores all the fashion items available and will be able for the recommendation system to check each item before it will be recommended to the users.

User Interactions: At MySQL, create the tables for storing user behavior history data in the recommendation system, including likes and dislikes, rating and purchases. These tables can count user interaction and the feedback rendered. Such block can be useful to adjust recommendation algorithms, improve the display of products and so on.

III. OUTLINE OF SYSTEM FRAMEWORK

The complete project architecture will be divided into four modules which are as follows:

- To create register/login page.
 - Code for uploading the clothes.
 - Choose the style preference .
 - Final result and output.
1. The first step in creating an HTML and CSS registration and login page is to design the layout, including buttons for submission and username and password input boxes. For styling, use CSS to position elements, establish background colors, and choose fonts. For buttons and input fields, use HTML form elements to ensure correct validation. To style these elements, apply CSS and adjust their size, alignment, and look. Make use of CSS to make the page responsive so that it displays well on different types of devices. Finally, put JavaScript into practice for interactive functions like user input management and form validation. To guarantee both operation and aesthetics, thoroughly test.
 2. Creating Dashboard where user will have multiple options like,
 - ◆ User can upload their clothes.
 - ◆ User can see their collection of dresses.
 - ◆ User can choose their style and preference according to their mood and season.
 3. There are two primary categories into which the final outcome can be divided: successful recommendation and unsuccessful recommendation
 - Successful recommendation: The system will generate best outfit on the bases of the preference selected by the user.
 - Unsuccessful recommendation: The system will generate a popup message that the user does not have sufficient collection of clothes to generate outfit.

Model, a refined contour extraction of the fashion model method is also developed to solve the dilemma that the accuracy and efficiency of contour extraction in the dynamic and complex video scene. As evidenced by the experiment, the proposed system outperforms in effectiveness on mass fashion information in the virtual space compared with human, and thus developing a personalized and diversified way for fashion recommendation.

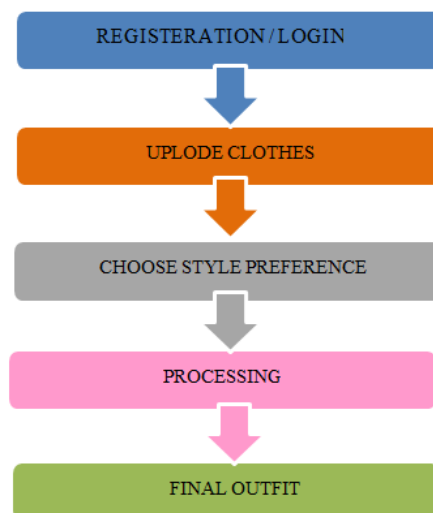


Fig.1 Flowchart for system framework

IV. REVIEW OF SOME REALTED WORKS

An Intelligent Personalized Fashion Recommendation System In this paper, we propose a novel system-Intelligent Personalized Fashion Recommendation System, which creates a new space in web multimedia mining and recommendation. The proposed system significantly helps customers find their most suitable fashion choices in mass fashion information in the virtual space based on multimedia mining. There are three stand-alone models developed in this paper to optimize the analysis of fashion features in mass fashion trend: (i). Interaction and recommender model, which associated clients' personalized demand with the current fashion trend, and helps clients find the most favorable fashion factors in trend. (ii). Evolutionary hierarchical fashion multimedia mining model, which creates a hierarchical structure to filter the key components of fashion multimedia information in the virtual space, and it proves to be more efficient for web mass multimedia mining in an evolutionary way. (iii). Color tone analysis model, a relevant and straightforward approach for analysis of main color tone as to the skin and clothing is used.

A Trends-Driven Collaborative Fashion Recommendation System

Fashion has a great impact in everyday life and therefore, people pay close attention to the way they dress. Fashion item recommendation is typically a manual, curated process, where experts recommend items and trends to large populations. However, there is increasing use of automated, personalized recommendation systems, which have valuable applications in e-commerce websites. In this paper, we propose a collaborative fashion recommendation system, called CFRS. Apart from classic features, we propose a new metric, called trend score. Trend score shows how trendy a product is and is calculated taking into account the ratings provided by CFRS users (fashion experts and registered users). In particular, users rate (like/ dislike scale) current trends about colors, prints and materials. Finally, trend score is used a) for sorting products of each category from trendiest options to classic ones and b) to recommend trendy products from different clothing categories.

A COMPREHENSIVE REVIEW ON IMAGE BASED STYLE PREDICTION AND ONLINE FASHION RECOMMENDATION

Image analysis, processing, classification, and segmentation have become pivotal in style prediction and fashion recommendation. Fashion retailers have shown an increasingly growing interest in adopting this branch of artificial intelligence in their supply chains. Computer scientists and engineers have published several scholarly works on this topic since the last decade. Based on the previous studies, this is the first academic paper that has presented comprehensive review on this topic. These scholarly articles are related to image based style prediction and online fashion recommendation. This is a form of method paper that illustrates research designs of the selected articles and research methods used by the researchers. Both style prediction and online fashion recommendation have been reviewed together in this paper, because study on recommendation system can facilitate an easy understanding of fashion style prediction and vice versa. Finally, the study will be helpful for fashion retailers and future researchers to understand the nature of style prediction and online fashion recommendation using image processing technique. The scientific contribution of this paper is that it has proposed a novel approach of reviewing research methods used in style prediction and fashion recommendation systems. Additionally, the article has also proposed a personalized recommendation model for the image-based fashion recommendation system.

V. LIMITATION

- **Limited Data Quality:** The goodness of the recommendation system generally depends on the fact that information quality is high and provided in the right amounts of quantity. Often, small or unclear data, namely, a blotchy database, false items, is insufficient for the software to give a complete and effective advice
- **Scalability:** There comes a time when both the customer base and the number of fashion items expand, making the issue of scalability the main problem. Indeed, the efficiency of the recommendation system handling large amounts of data could become an issue. It may eventually take more time to process data or demand more computational resources and as a consequence, response times could turn longer.

VI. FUTURE SCOPE

The future horizon of the Fashion Recommendation System (FRS) is filled with much ahead of time hopes fueled by remedial upgrades that can bring revolution in enabling and promoting the manifestation of the explored loyalty of the users in fashion. As technology does progress and consumer desires come to change, our FRS takes a stand to be up with any adjustments made and innovations in fashion world. Of the future development options affirmed, the area with the promising results of machine's application is the use of subclass machine learning algorithms and techniques. By combining both traditional recommendation algorithms such as collaborative filtering and content-based filtering, our current system is offering a tool for improving the accuracy of recommendations as well as the augmenting personalization. With this approach, we will create a neural networks that are able to process large amount of data, analyzing the complex pattern in user behavior and fashion trend, and this is how we will be able to deliver even more relevant and tailored recommendations.

Moreover, there will be a need for incorporating several data modalities such as images, text, and video to enable an improvement of fashion recommendation systems. Furthermore, this platform will also be able to make use of image recognition techniques by looking at visual indicators like style, color and design. Similarly, the use of computer vision techniques can even allow users to receive advices from the visual cue such as displays of clothing. In this way, users will be provided with a more interactive and fully-immersed shopping session. According to another opportunity for advancement, now one is able to extend therecommendations on various goods starting from clothing ending up on accessories, footwear, and beauty aids too. Our designers have confirmed that the system would be made more competitive by integrating a variety of fashion assortments out of which, users will be able to shop for complete outfits and styles which would remodel their appeal according to their artistic preferences.

VII. CONCLUSION

In conclusion, our Fashion Recommendation System represents a significant advancement in the field of fashion technology, offering users a personalized and intuitive platform for discovering and exploring fashion trends. Through the utilization of advance algorithms, user profiling techniques, and real-time trend analysis, our system delivers tailored recommendations that resonate with individual preferences and style sensibilities. By leveraging technologies and computer vision, we have enhanced the accuracy and relevance of our recommendations, providing users with a seamless and immersive shopping experience. Moving forward, the future scope of our Fashion Recommendation System includes the integration of additional fashion categories, collaborations with industry stakeholders, and ongoing innovation to adapt to evolving consumer preferences and technological advancements. Overall, our project demonstrates the potential of technology to revolutionize the fashion industry and empower users to curate their distinctive style with confidence and ease.

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