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# Conversational Fashion Outfit Generator Powered by GenAI

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**ABSTRACT:** This innovative project explores the transformative potential of Generative AI, such as OpenAI, in the context of fashion by introducing a revolutionary Fashion AI Assistant. The primary challenge addressed is the time-consuming and often overwhelming task of selecting suitable outfits for various occasions, considering personal styles and current fashion trends. The Fashion AI Assistant, powered by GenAI, seeks to alleviate this challenge by generating customized outfit recommendations based on user preferences, style inputs, and event contexts. Leveraging the capabilities of Generative AI ensures the assistant's ability to intelligently synthesize fashionable ensembles that seamlessly merge individual tastes with contemporary fashion trends. The core objective of this project is to streamline and elevate the outfit selection process, fostering a sense of confidence and style among users. Through the integration of a stable diffusion model, the project aspires to empower individuals with personalized fashion guidance, significantly influencing their self-expression and enhancing their everyday lives.

**KEYWORDS:** Generative AI (GenAI), Fashion AI Assistant, Customized outfit recommendations, User preferences, Style inputs, Event contexts, Contemporary fashion trends, Streamline and elevate, Personalized fashion guidance, Confidence and style, Self-expression

## I. INTRODUCTION

In the era of Generative AI, product search and discovery are undergoing a transformative shift. Moving away from the conventional single open text box experience, we are transitioning towards a more conversational approach. This shift promises to revolutionize product discovery and recommendations, offering a better understanding of user needs through human-like conversational interactions. One domain where this evolution will make a substantial impact is in the context of fashion. The Fashion Outfit Generator introduced here aims to leverage Generative AI capabilities to analyze a user's historical purchase data, understanding the user's preferred style, color choices, and favorite brands. This enables the generator to suggest outfits that align seamlessly with the user's unique fashion taste. Moreover, by considering the user's interactions, such as frequently viewed or carted items, the generator ensures that its outfit recommendations remain not only relevant but also highly appealing to the individual user.

## II. RELATED WORK

Research and projects in the fields of artificial intelligent (AI), fashion and human-computer interaction are related to the working of interactive fashion clothes machines powered by artificial intelligent (GenAI). The main tasks of the project be:

1. **Fashion Recommendation Systems:** Previous work has explored the use of collaborative filtering, content-based filtering, and hybrid approaches for recommending fashion items. These systems typically analyze user preferences, past purchases, and other data to suggest clothing and accessories.
2. **Conversational Agents in Fashion:** Chatbots have been implemented in the fashion industry to provide customer support and product recommendations. These agents aim to enhance the shopping experience by offering personalized suggestions and answering fashion-related questions.
3. **Visual Search and Image Recognition:** Thanks to advances in computer vision, systems are now able to recognize clothing from images and compare it to similar products available in stores. These technologies can be integrated into conversational fashion systems to yield more accurate recommendations.

4. **Generative Fashion Models:** Stable Diffusion and other generative models have been used to create new clothing designs, predict fashion trends, and generate outfits based on specific criteria. These models can synthesize realistic images of clothing and ensembles..
5. **Personalization and Style Analysis:** Analyzing individual preferences and tastes in fashion has been researched. By learning about a user's style, artificial intelligence (AI) systems are able to provide more personalized clothing recommendations.
6. **User Interaction and Experience:** Research on user experience with conversational agents, including aspects like contentment, trust, and engagement, is important to know for creating a fashion outfit generator that works. It is imperative to guarantee that the system offers a user-friendly and pleasurable experience.
7. **Context-Aware Recommendations :**Several efforts have focused on giving fashion recommendations depending on contextual factors, such as the time of day and event. By considering these contextual considerations, outfit recommendations may become more useful and relevant.

### III. PROPOSED ALGORITHM

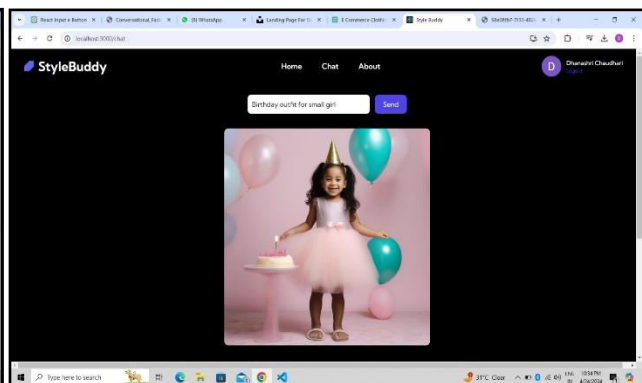
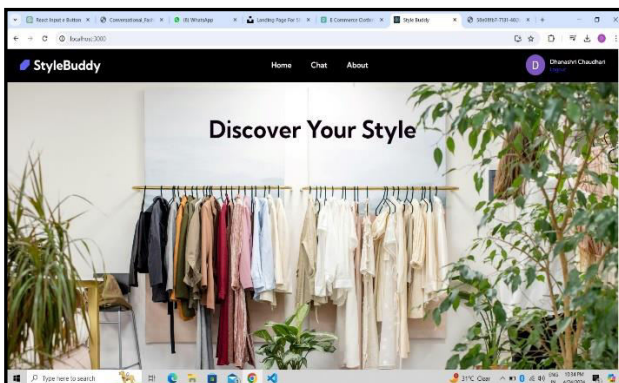
The development process of the Conversational Fashion Outfit Generator powered by GenAI involves several key algorithmic steps, including data preprocessing, feature extraction, model training, evaluation, and generation. Each step is essential for building an accurate and reliable generative model. We provide an overview of these steps and highlight their significance in the system's development.

### IV. PSEUDO CODE

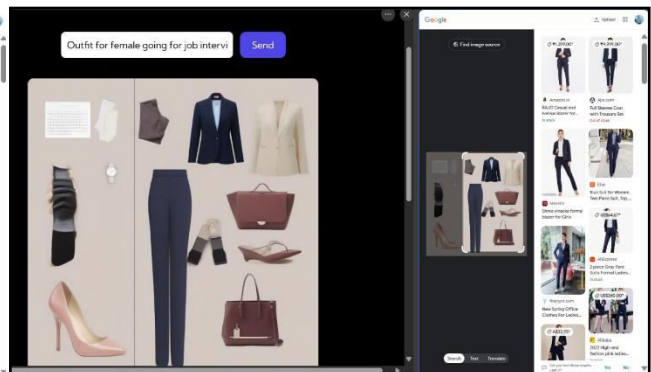
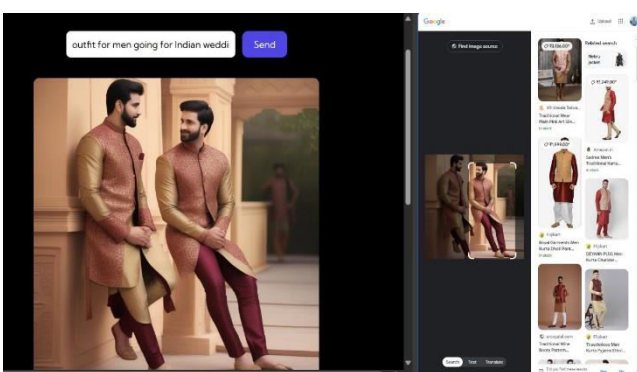
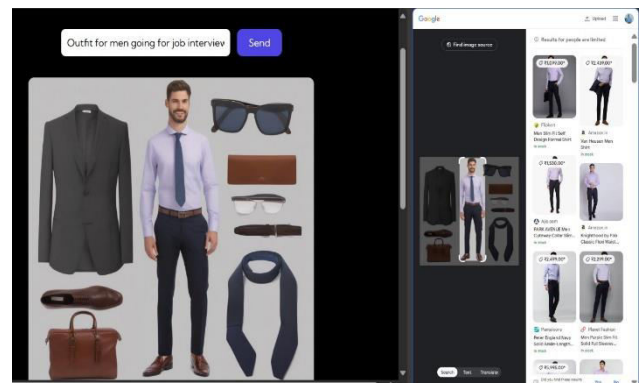
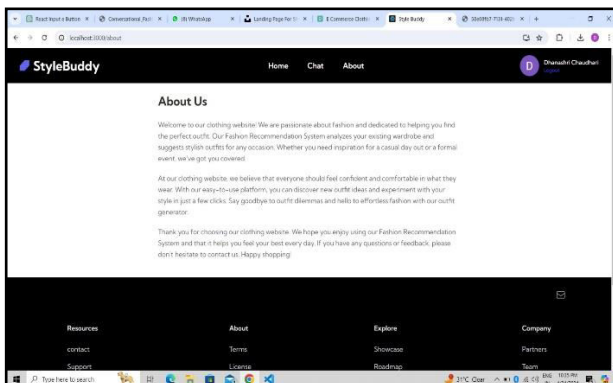
- Step 1: Register Or Login
- Step 2: Overview of Website.
- Step 3: Input Prompt.
- Step 4: Generate Image.
- Step 5: Copy Image.
- Step 6: Paste Image in Google Lens.
- Step 7: There is option for Shopping
- Step 8: End.

### V. RESULTS

The quality of the data accessed through the API and the accuracy of the generative model determine the output of the Generative AI-powered Conversational Fashion Outfit Generator (GenAI). More appropriate and fashionable outfit suggestions that reflect the user's tastes are produced by well-trained models. However, users should proceed with caution when interpreting the results, as there can be limits in capturing subtleties of personal style and keeping up with rapidly evolving fashion trends.







## VI. CONCLUSION AND FUTURE WORK

In conclusion, The Conversational Fashion Outfit Generator powered by Generative AI (GenAI) assists individuals who may be uncertain about what to wear by examining their current wardrobe and suggesting outfits that combine their existing clothing items with trendy fashion pieces. The system uses an API to access a database of outfits and clothing, allowing it to evaluate its performance and ensure that the recommended outfits align with the user's style and preferences. This intelligent combination of old and new fashion elements enables the generator to offer personalized fashion guidance tailored to the individual's tastes.

In addition to providing style recommendations, the system considers various contextual factors such as events, occasions, and weather to deliver relevant and practical outfit suggestions. By accounting for these aspects, the generator can offer advice that is both fashionable and suitable for the situation at hand. Looking ahead, future improvements will focus on enhancing the system by incorporating more data and information to create more detailed and varied outfit suggestions. By continuously refining its fashion guidance through user feedback, the system aims to provide an even more comprehensive and satisfying fashion experience for its users.

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