Parshvanath Charitable Trust's
A. P. SHAH INSTITUTE OF TECHNOLOGY
(Approved by AICTE New Delhi & Govt. of Maharashtra, Affiliated to University of Mumbai)
(Religious Jain Minority)

Department of Computer Science & Engineering (AI & ML)

AI Based Fashion Attire Recommendation System

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Project Guide
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INTRODUCTION

- Introducing a virtual try-on room to revolutionize online apparel shopping
- Utilizes AI and 3D technologies to accurately align virtual outfits with the user’s body in real-time
- Enhances customer confidence by allowing them to visualize apparel before purchasing
- Reduces return rates and cancellations, creating a seamless and interactive e-commerce experience

LITERATURE SURVEY

Sr. No	Title	Author Name	Description
1.	Image Based Clothing Style Recommendation System (April 2024)	Swati Shilaskar; Ojasvi Ghule; Samiksha Gudgude	This Clothing Style Recommendation System uses deep learning techniques to provide personalized fashion suggestions based on user demographics, preferences, and a vast dataset of Amazon clothing items. By integrating features such as gender, height, favorite color, and age, it enhances the shopping experience with tailored recommendations. The system continuously adapts to deliver the latest and most fashionable choices[1].
2.	AI based Fashion Stylist Recommendation System (April 2024)	Sakshi Shete; Ht Darshan; Manish Thakare; Kanchan Dhuri	This research presents an AI Fashion Stylist system that combines collaborative and content-based filtering with augmented reality to provide personalized outfit suggestions and virtual try-ons. It incorporates real-time trend analysis, community engagement, and shopping assistance while ensuring scalability, privacy, and continuous improvement through user feedback[2].

Sr. No	Title	Author Name	Description
3.	Stitching Data Threads: Impact of Artificial Intelligence on Fashion Evolution (June 2024)	Sandeep Prabhu; P Ashok; Rutuja Nandanwar; Giri Hallur	This study explores how AI has transformed the fashion industry, particularly through recommendation systems, enhancing the online shopping experience. A survey of 156 respondents shows that AI-powered recommendations are widely used across all age groups. The paper emphasizes the positive impact of AI in making online shopping more personalized and efficient[3].
4.	Future of Fashion: AI-Powered Virtual Dressing for E-Commerce Applications (September 2024)	Er. Nitasha; Sneha Kumari; Aditya Kumar; Rizul Bhardwaj; Vinita Maddheshiya; Altamas Khan	This paper introduces AI-powered Virtual Dressing technology that uses computer vision and machine learning to offer realistic virtual try-ons, enhancing online shopping experiences and reducing return rates. Survey results show strong consumer interest, highlighting its potential for e-commerce transformation[4].
5.	Virtual Dress Trials: Leveraging GANs for Realistic Clothing Simulation (October 2024)	B Sheryl Rochana; Sujitha Juliet	This work introduces a digitized fashion platform featuring GAN-driven virtual try-ons, an advanced size recommendation system, AI chatbot support, and secure online shopping. Users can explore, purchase, rate, and review fashion items, while collaboration with e-commerce businesses enhances its reach and user experience[5].

Limitations of Existing Systems

- Lack of Virtual Try-On Capability
- High Return and Cancellation Rates
- Limited User Engagement
- Generic Sizing Systems
- No Real-Time Feedback

Problem statement

- Fashion choices are highly personal and influenced by factors like body type, skin tone, occasion, and weather. Existing recommendation systems rely on basic filtering techniques, lacking real-time adaptability.
- This project proposes an AI-driven fashion attire recommendation system that integrates machine learning with 3D visualization to provide personalized outfit suggestions.
- The system analyzes user preferences, historical data, and body dimensions to generate recommendations. By incorporating computer vision and deep learning, it enables a virtual try-on experience, enhancing decision-making and reducing return rates in online shopping.

Proposed System Design

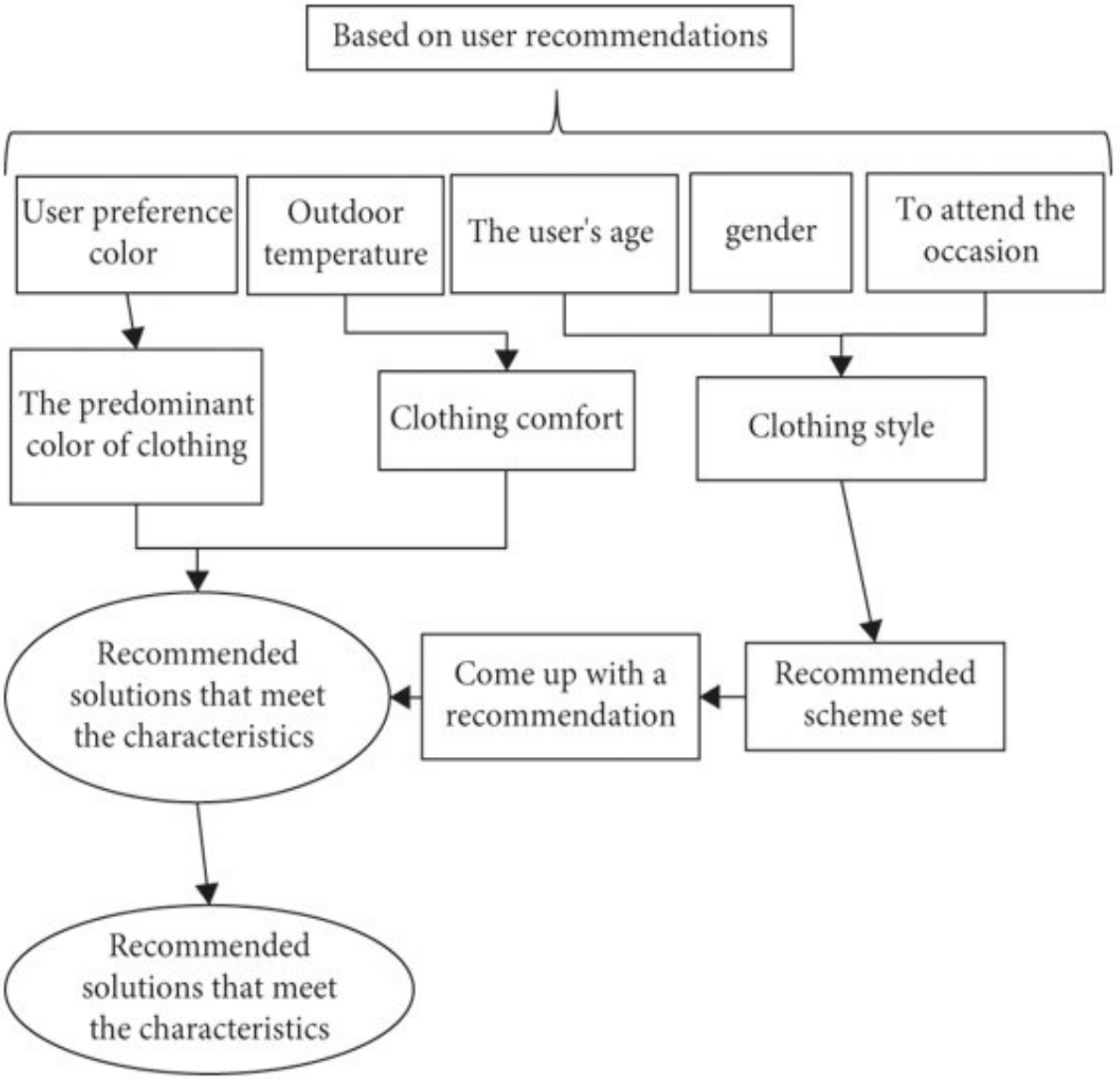
- The proposed system integrates AI, machine learning, and 3D visualization to deliver personalized fashion recommendations.
- **Real-Time Virtual Try-On:**

Augmented Reality (AR): Integrates AR technology to allow users to virtually try on garments, providing a realistic view of fit and style before purchase.

- **Seamless Integration and Privacy:**

Unified Platform: Connects with digital closets, wearable devices, and retail platforms for a seamless user experience.

Flowchart


Based on user recommendations
User preference color
Outdoor temperature
The user's age
gender
To attend the occasion
The predominant color of clothing
Clothing comfort
Clothing style
Recommended solutions that meet the characteristics
Come up with a recommendation
Recommended scheme set
Recommended solutions that meet the characteristics

TECHNOLOGY STACK

Software Requirement:

- CMake (3.12.0)
- MediaPipe
- OpenCV (3.4.2.17)
- Scipy (1.0.0)
- Cascade Trainer GUI (1.8.0)
- Tkinter Canvas (8.6.8)
- Numpy (1.18.1)
- Anaconda (4.8.2)
- Python
- Flask Web Framework (1.1.1)

Hardware Requirement:

- Web Cam
- 8GB RAM

IMPLEMENTATION

TRY & BUY

Home Shop Upcoming Features About Contact Try & checkout

All Products Women Men

White T-Shirt for Man
Rs 235.64

Red T-Shirt for Man
Rs 125.50

Orange T-shirt for Man
Rs 134.75


Orange T-shirt
Pink T-shirt
Red T-shirt


Orange T-shirt
Pink T-shirt
Red T-shirt

CONCLUSION

- The AI Based Fashion Attire Recommendation System improves user experience by offering virtual try-ons and personalized recommendations based on user preferences, enhancing the shopping process
- The system has shown high accuracy in predicting the right fit and style, reducing returns and cancellations by offering a more realistic visualization of clothing
- Overall, the solution contributes to a better user engagement and higher satisfaction in e-commerce fashion

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THANK YOU...!!