Virtual Try On

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1 Introduction: background, Motivation, Problem Statement

Background:
Traditional fitting rooms are often slow, inconvenient, and can make customers feel frustrated and existing virtual fitting technologies range from basic 2D approaches, which lack depth, to advanced 3D systems that require costly equipment and expertise. Tools like Microsoft Kinect provide a more accessible and efficient way to enable accurate motion tracking and 3D modeling, making virtual try-on systems feasible for broader adoption.

Motivation:
Customers often find it difficult to visualize how clothes will fit without physically trying them on. Long queues and time spent in fitting rooms further deter in-store shopping. Virtual try-ons aim to solve these issues by delivering a fast, immersive, and engaging clothing fitting experience.

Problem Statement:
The shopping experience, particularly in fitting rooms, is often inefficient and outdated. Issues such as long wait times, physical effort, and difficulty visualizing how clothes will fit contribute to customer dissatisfaction and lost sales opportunities.

2 Related Work

Related System	Weakness	Proposed Solution
Face Cake[1]	Distractions due to real backgrounds	Use plain backgrounds for focused virtual try-ons.
Zeekit[2]	Avatars limited by size, skin tone, and height	Allow users to try on clothes using their own bodies in 3D.
FX Mirror[3]	Available only in physical stores, app not Android compatible	Enable Pakistani brands to use virtual try-on tech locally.
Sapphire Pakistan[4]	Limited 3D clothes images, no virtual try-rooms	Enable users to try on clothes using their own bodies, with 3D styling experience.
Bonanza Satrangi[5]	No avatars, real face try-ons, or virtual try-rooms	Allow users to try on clothes virtually using their own bodies in 3D.

Objectives

The main objectives of our virtual try-on system are

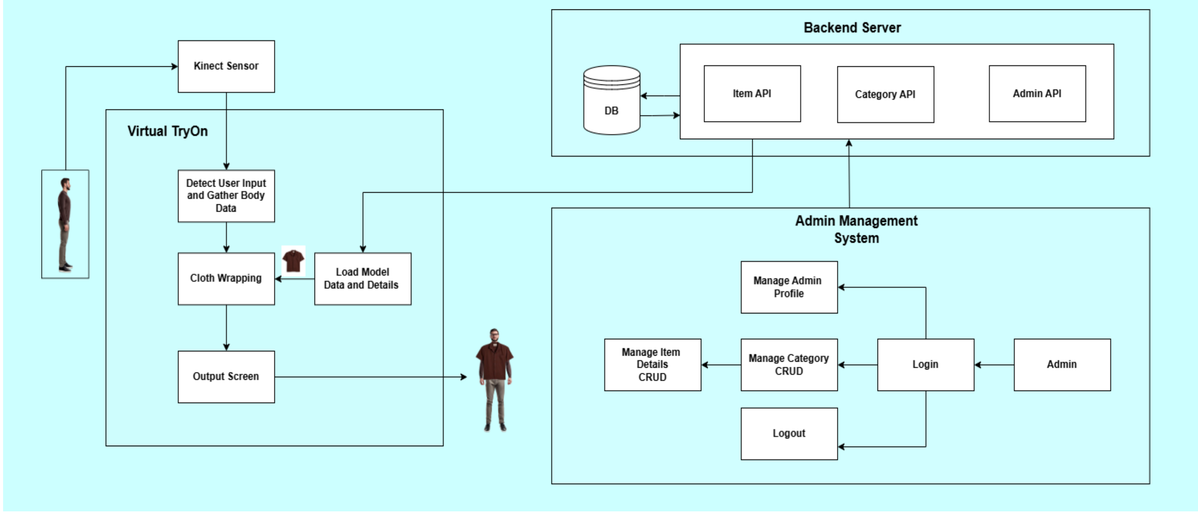
- To develop an Augmented Reality system that enables customers to virtually try on different clothing items
- To ensure the AR system accurately senses and adapts to users' body features for realistic virtual try-on experiences.
- To ensure system management and administrative roles, accessible to authorized admin.
- To navigate using hand gestures for continuous interaction.

3 Features

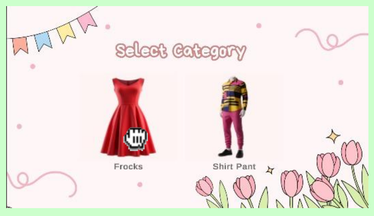
The try on-system requires a distraction-free environment and proper lighting because they are crucial for ensuring the system to accurately detect and interpret user data readings.

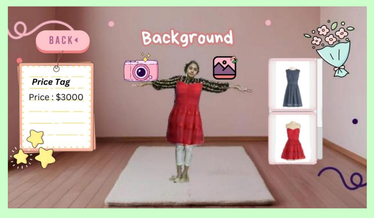
1. Implement virtual try-on for clothing items.
2. Enable users to save pictures of their virtual try-ons.
3. Show price tag alongside the virtual try-on.
4. Basic navigation using hand gestures for continuous interaction.
5. Utilize 3D depth sensors for placement of virtual items.
6. Allow admin to manage his profile.
7. Allow admin to manage inventory details.

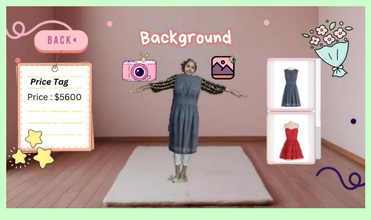
4 System Architecture/ Approach/ System Design

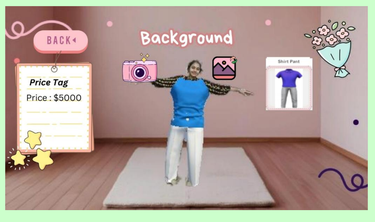


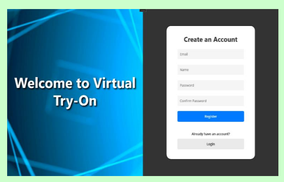
5 Working Demo

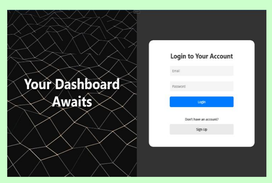


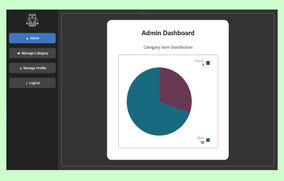


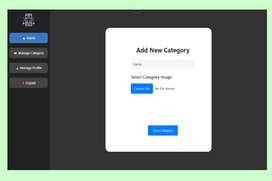


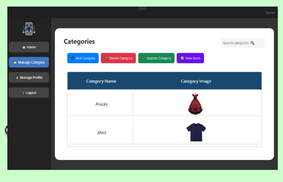


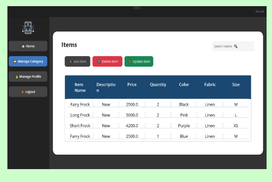


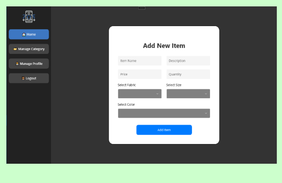


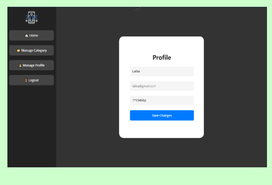


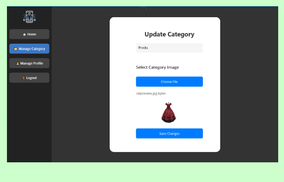


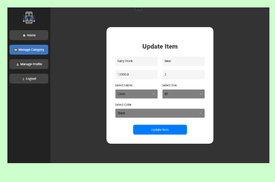












Conclusion

The Virtual Try-On System improves the traditional shopping experience by making it faster, more convenient, and more accessible. Using Augmented Reality (AR) and Microsoft Kinect technology, users can see how clothes fit them without needing physical try-ons. This approach saves time and offers a hygienic alternative to dressing rooms. For businesses, the system provides an effective tool for managing inventory and improving customer satisfaction. With easy-to-use admin features and real-time data integration, it bridges the gap between physical and digital retail. This system offers a practical way to enhance the clothing shopping experience for both customers and retailers.

References

1. "Facecake marketing technologies, inc.." https://www.facecake.com/, 2020.[Online; accessed: March 24, 2024].
2. D. Incandela, "Walmart launches zeekit virtual fitting room tech_x0002_nology." https://corporate.walmart.com/news/2022/03/02/walmart-launches-zeekit-virtual-fitting-room-technology, 2022. [Online; accessed: March 24, 2024].
3. I. FXGear, "Fxgear." https://www.fxgear.net/vr-fashion, n.d. [Online;accessed: March 24, 2024].
4. S. Pakistan, "Sapphire 3d ar app." https://www.youtube.com/watch?v=cFPH72KPZd4&list=PLvClqYv5J8g9EInHxkv1XhoQr2kRiE8yx&index=3,2018. [Online; accessed March 24, 2024].
5. Bonanza satrangi becomes the first e-store in pakistan to introduce aug-mented reality." https://images.dawn.com/news/1186025, 2020. [Online;accessed: March 24, 2024].