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Digital Wardrobe Experience -Virtual Try on Clothing

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ABSTRACT

The image-based virtual try-on project is all about using computer vision and augmented reality. We're working on clever computer programs to spot and follow your body and the clothes you want to try on in pictures. This means figuring out how you're standing, separating you from the background, and making the clothes look real on you. It's like making a virtual fitting room with some high-tech magic. Image-based virtual try-on is a cool tech that lets you try on clothes in pictures. It uses smart computer stuff to figure out your body shape from your photo. Then, it magically puts the clothes on you in the pic, making sure they look right with the right fabric, texture, and fit. It's like a virtual dressing room on your screen. This tech wants to give you a super-real and fun way to try on clothes without actually putting them on. Imagine seeing how different outfits would look on you, just by using your computer or phone.

Keywords: Shopping, Virtual Try-on, Image Based, Clothing, Fitting Room, Algorithms, User, Virtual reality.

I. INTRODUCTION

Image based virtual Try-on clothing is a concept of providing customer an experience of virtually trying multiple clothes of his or her choice without making him travel to the shop or market. This concept of digital wardrobe can make online shopping for customer more reliable and trustable in this world where it is not possible for customer to travel every time to the shop to purchase clothing items. This system will be a digital wardrobe for the customer where they can try clothing of their choice by just uploading their image into the system. It could make online shopping way better because you won't need to visit real fitting rooms, and you'll be happier with what you buy. It's like a fashion revolution online. There are a lot of algorithms have been developed for accurately calculating the size and the shape of the body and suggesting the perfect clothing item to the user. Now a days researchers are also working on improving the privacy of the data mostly in the form of images provided by users. The proposed system introduced in this paper will help users to find out their favorite clothing items and will also provide users with the online virtual try-on experience. In this system user will provide his image to the application and then will be able to select the clothing item that he wants to try.

II. LITERATURE SURVEY

In paper [1] C-VTON: Image-based virtual try-on techniques have shown great promise for enhancing the user-experience and improving customer satisfaction on fashion-oriented e-commerce platforms. However, existing techniques are currently still limited in the quality of the try-on results they are able to produce from input images of diverse characteristics. In this work, authors propose a Context-Driven Virtual Try-On Network (C-VTON) that addresses these limitations and convincingly transfers selected clothing items to the target subjects even under challenging pose configurations and in the presence of self occlusions.

In the Paper [2] Image-based virtual try-on (VTON) systems using deep generative models have drawn significant research attention. However, the 2D clothing shape transform methods in the earlier works show serious limitations in 3D clothing deformation required in multiple-pose VTON scenarios.

[3] This paper presents a new image-based virtual try-on approach (Outfit- VITON) that helps visualize how a composition of clothing items selected from various reference images form a cohesive outfit on a person in a query image. Our algorithm has two distinctive properties. First, it is inexpensive, as it simply requires a large set of single (noncorresponding) images (both real and catalog) of people wearing various garments without explicit 3D information. The training phase re- quires only single images, eliminating the need for manually creating image pairs, where one image shows a person wearing a particular garment and the other shows the same catalog garment alone. Secondly, it can synthesize images of multiple garments composed into a single, coherent outfit; and it enables control of the type of garments rendered in the final outfit.

As per Paper [4] Authors present a novel learning model, Fit-Me network, to seamlessly fit in-shop clothing into a person image and simultaneously transform the pose of the person image to another given one. The proposed Fit-Me network helps users not only save the time used to change clothes physically but also provide comprehensive information about how suitable the clothes are. By facilitating the arbitrary pose transformation, can generate consecutive poses to help users get more information for deciding whether to buy the clothes or not from different aspects.

In this paper [5], authors present VITONGT, a new model for virtual try-on that generates high-quality and photo-realistic images. This model is composed of a two-stage geometric transformation module that performs two different projections on the input garment, and a transformation-guided try-on module that synthesizes the new image. The proposed solution on the most common dataset for this task, containing mainly t-shirts, and demonstrate its effectiveness compared to different baselines and previous methods.

A mobile-based virtual try-on system is proposed in paper [6] to deal with the problems of high cost and conflicts between computational complexity and simulation effects. In this paper, several modules are included, such as automatic 3D face reconstruction based on a single image, auto-skinning and real time local simulation of cloth. According to the experiments, the virtual try-on system introduced in this paper is able to achieve better fitting effects with lower constructing and computing costs, in which case good experience of mobile-based virtual try-on system is pro- vided.

As per paper [7], Image-based virtual try-on systems aim at transferring the try-on clothes onto a target person. Despite making considerable progress recently, such systems are still highly challenging for real-world applications because of occlusion and drastic spatial deformation. To address the issues authors propose a novel Flow-based Virtual Try- on Network (FVTN). It consists of three modules. Firstly, the Parsing Alignment Module (PAM) aligns the source clothing to the target person at the semantic level by predicting a semantic

parsing map. Secondly, the Flow Estimation Module (FEM) learns a robust clothing deformation model by estimating multi-scale dense flow fields in an unsupervised fashion.

The paper [8] proposes a virtual try-on system for apparel shopping that generates high-resolution virtualization without pixel disruption. The system employs a Parser Free Appearance Flow Network, which simultaneously warps clothes and generates segmentation while exchanging information. The proposed methodology outperforms existing virtual fitting methods at 192 x 256 resolution, as demonstrated by the Fre´chet inception distance (FID) performance metric. The system's technical specifications, software and hardware requirements, and user interface de- sign are presented in detail.

III.PROPOSED SYSTEM

Here in this section we will cover details about our proposed system.

A. Problem Statement

The problem statement for the image-based virtual try-on clothes is to create a system that lets user try on clothes virtually by uploading their own images. The challenge is to accurately place chosen clothing items on users image, making it look realistic and appealing.

B. Block Diagram

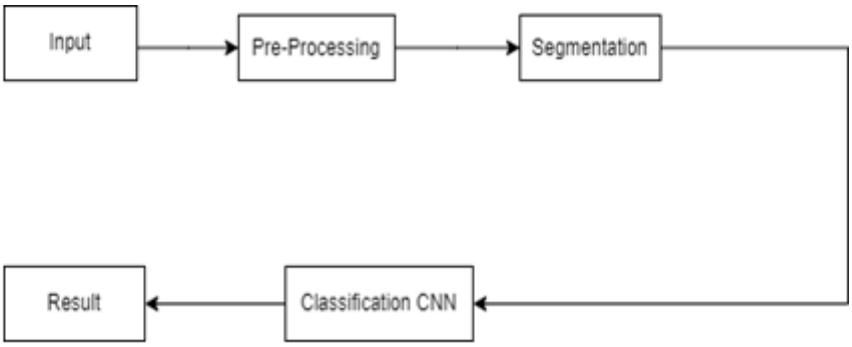

Figure1:Block Diagram

IV.RESULTS

This project explores the potential of a Digital Wardrobe Experience with virtual try-on clothing functionality. This explains how users interact with this technology and its impact on aspects like user experience and size selection accuracy. This signifies a valuable contribution to the understanding of virtual try-on technology, aligning with previous research on its benefits.

For implementation of our proposed system there is need of Software as Operating System - Windows 10/11, Front End - HTML, CSS, programming Language – java and Database-MySQL. Hardware Requirement for implementation is Processor - Intel 13, RAM - 6 GB(min), Hard Disk - 20 GB, Key Board - Standard Windows Keyboard , Mouse - Two or Three Button Mouse.

The following figure depicts the Digital Wardrobe Experience-Virtual Try on Clothing form of the project.

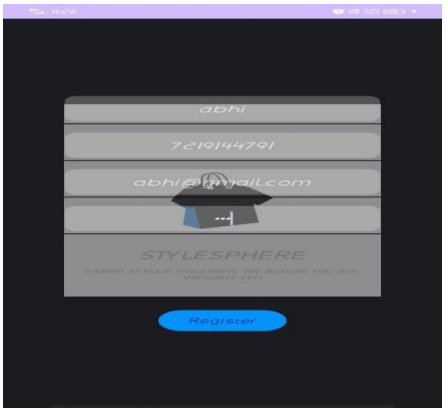

Figure2:Interface Front Page

The following figure gives the final result of the project. In this figure, we need the registration do it the first.

Figure3:Login Page

The figure depicts the login into application of the project. In this figure, it shows that login into the application.

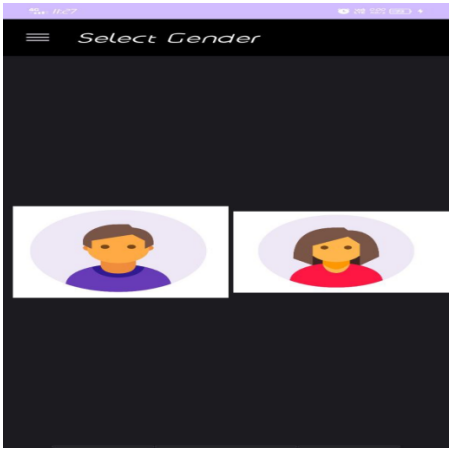

Figure4:Selection of Gender

The image depicts the selection of gender of the project. In this figure, it shows that gender like male / female

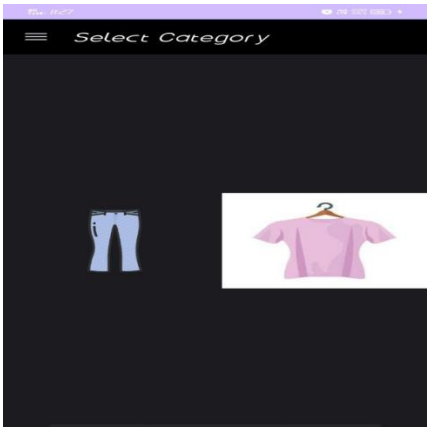

Figure5:Selection of Cloth Category

The figure displays the selection to the categories of clothes into the project. In this figure, it shows that categories of clothes

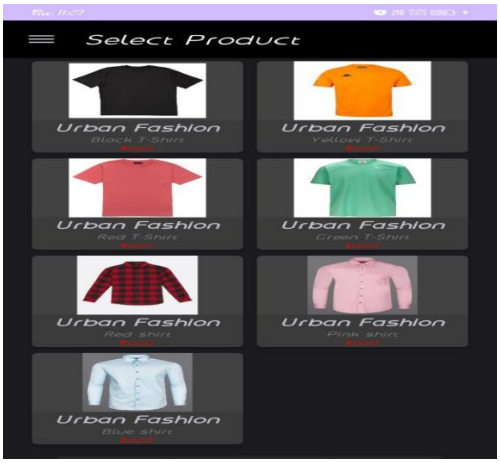

Figure6:Cloth Options in Category

In this figure, it shows that selection of the clothes. The image depicts the select the clothes and moves to the carts into the project. In this figure, it shows that clothes moves into the carts

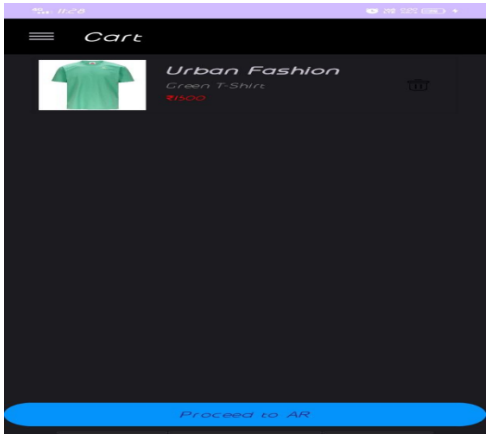

Figure7:Cloth added to cart

In this figure, it shows that model with wearing the cloths.

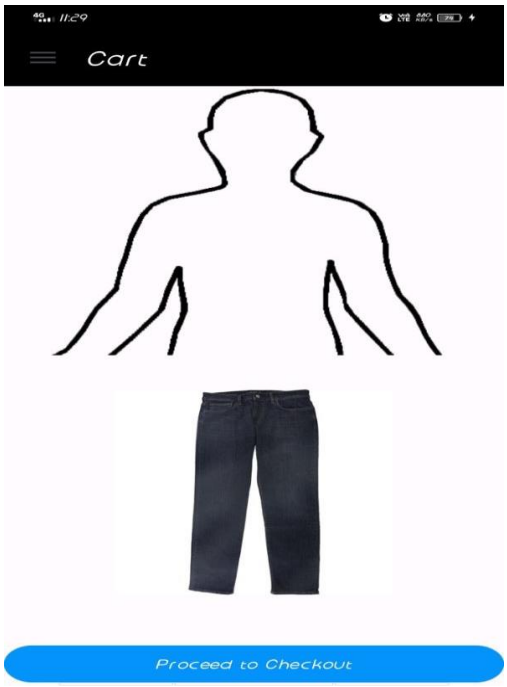

Figure8:Cloth on virtual mode

The following figure shows the payment process of that cloth in to the project. In this figure, it shows that once the cloth is finalized then payment process need to be done.

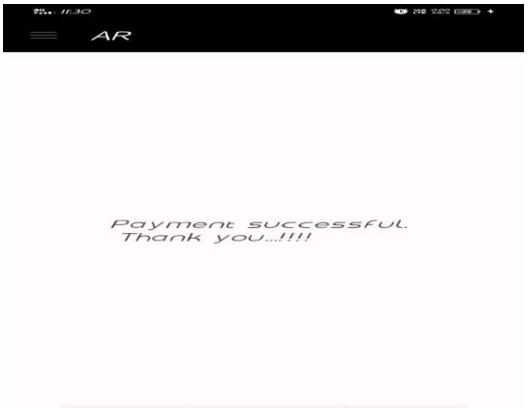

Figure9:Payment Option

V. CONCLUSION

Image-based virtual try-on for clothes offers a convenient and personalized shopping experience. It allows customers to try on clothes virtually, saving time and eliminating the need for physical fitting rooms. Retailers can showcase their products in an immersive way, increasing customer engagement. However, it's important to consider the limitations of virtual try-on, such as potential in accuracies in fit and color representation. Overall, it's a transformative technology that enhances the online shopping experience and improves customer satisfaction.

VI. REFERENCES

[1]. Fele, B., Lampe, A., Peer, P., &Struc, V. (2022). C-vton: Context-driven image-based virtual try-on network. In Proceedings of the IEEE/CVF winter conference on applications of computer vision (pp. 3144-3153).

[2]. T. T. Tuan, M. R. Minar, H. Ahn and J. Wainwright, "Multiple Pose Virtual Try-On Based on 3D Clothing Reconstruction," in IEEE Access, vol. 9, pp. 114367-114380, 2021, doi: 10.1109/ACCESS.2021.3104274.

[3]. A. Neuberger, E. Borenstein, B. Hilleli, E. Oks and S. Alpert, "Image Based Virtual Try-On Network From Unpaired Data," 2020 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), Seattle, WA, USA, 2020, pp. 5183-5192, doi: 10.1109/CVPR42600.2020.00523.

[4]. C. -W. Hsieh, C. -Y. Chen, C. -L. Chou, H. -H. Shuai and W. -H. Cheng, "Fit-me: Image-Based Virtual Try-on With Arbitrary Poses," 2019 IEEE International Conference on Image Processing (ICIP), Taipei, Taiwan, 2019, pp. 4694-4698, doi: 10.1109/ICIP.2019.8803681.

[5]. M. Fincato, F. Landi, M. Cornia, F. Cesari and R. Cucchiara, "VITON-GT: An Image-based Virtual Try-On Model with Geometric Transformations," 2020 25th International Conference on Pattern Recognition (ICPR), Milan, Italy, 2021, pp. 7669-7676, doi: 10.1109/ICPR48806.2021.9412052.

[6]. H. Zhu, J. Tong, L. Zhang and X. Zou, "Research and Development of Virtual Try-On System Based on Mobile Platform," 2017 International Conference on Virtual Reality and Visualization (ICVRV), Zhengzhou, China, 2017, pp. 406-407, doi: 10.1109/ICVRV.2017.00098.

[7]. T. Wang, X. Gu and J. Zhu, "A Flow-Based Generative Network for Photo-Realistic Virtual Try-on," in IEEE Access, vol. 10, pp. 40899-40909, 2022, doi: 10.1109/ACCESS.2022.3167509.

[8]. Virtual Try-On System using Machine Learning. Virtual Try-On System using Machine Learning. Prof. Nilesh Bhojane Dhanashree Gaikwad .

[9]. Seunghwan Choi, Sunghyun Park Minsoo Lee, and Jaegul Choo. Viton- hd: High-resolution virtual try-on via misalignment-aware normalization. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), pages 14131–14140, June 2021.