

VIRTUAL TAILOR FOR CUSTOM STITCHING AS A SERVICE USING AUGMENTED REALITY

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ABSTRACT

In this digital age, the way we live is changing and so is the way we relate to fashion. We are becoming more conscious about what's good for us, and our clothes are now an extension of our unique personality. Tailoring is not just meant with stitching and sewing few fabrics together but it is an art. The art which can make a simple fabric turn into something very special and that too, according to your choice and style. Tailored stuff offers a classic look whether for men or women. Virtual Tailor is an online tailor web application at your doorstep for stitching the custom-made clothes. Virtual Tailor an augmented reality-based interactive platform that can be used for bespoke clothing requirements. Hire the most talented professionals for stitching garments. Virtual Tailor is an online 3D design engine that provides a novel online tailor store experience to you and the customers.

Keywords: *Virtual try-on, clothing length controllable, conditional semantic generation, generative versarial network*

1.INTRODUCTION

Traditional methods of acquiring bespoke clothing often involve time-consuming measurements, numerous fitting sessions, and a series of trial-and-error stages, resulting in a protracted and sometimes frustrating process for both customers and tailors. The Virtual Tailor project aims to address these challenges by seamlessly integrating AR technology into the world of custom stitching, offering a novel and efficient solution that enhances the overall customer experience. By leveraging augmented reality, our Virtual Tailor service transcends geographical constraints, enabling users to engage in the tailoring process from the comfort of their homes. This innovative approach not only saves valuable time for customers but also opens up new avenues for tailors to reach a wider clientele. Through the use of AR, individuals can visualize their chosen fabric, design, and fit in real-time, providing an immersive and realistic preview of the final product. Creating an augmented reality (AR) 3D model for a virtual tailor involves blending advanced technologies to offer users an immersive and realistic experience in customizing and visualizing their clothing.

1.1 OVERVIEW

Tailoring has been known to be dominated by unlearned people. The tailoring industry uses a traditional manual system to book their clients. The clients must go through a long and stressful process of getting their clothes stitched by traveling to the location of the tailor shop to get their measurements taken which are manually written on some piece of paper or on a book. Although this method is a huge threat to the information of the customer i.e. it can get lost or it can go through the hands of unauthorized people which can result in lack of data confidentiality

and integrity. Online tailoring management system will revolutionaries the system and solve these problems by automating the whole system and increase the accessibility irrespective of the customer's location provided they are connected to the internet facility.

1.2 PURPOSE

In recent years, customers' growing reliance on online shopping has increased their need to try clothes on virtually. A virtual try-on task has been proposed to facilitate clothing selection and augment the convenience of the online shopping experience. Still, it remains a significant challenge for virtual try-on to control clothing length while ensuring realistic results. Existing virtual try-on techniques can be classified into 2D image-based and 3D model-based methods. 3D model-based methods rely on 3D measurement data to reconstruct a 3D model and render multiple output images onto the model body with precise geometric transformations. Image-based virtual try-on provides customers with convenient online clothes selections by transferring garments onto a reference person. Despite the emergence of several solutions to generate photo-realistic images and adapt to complex poses, controlling clothing length remains a challenge. We argue that the clothing reconstruction did not consider clothing length information, which results in clothing length being uncontrollable in most virtual try-on methods.

2. LITERATURE SURVEY

2.1 Me or Just Like Me? The Role of Virtual Try-On and Physical Appearance in Apparel M-Retailing

AUTHOR: Chuanwang Yang and Zemei Liu

Virtual try-on (VTO) tool based on augmented reality to a traditional m-commerce interface displaying models. Technology Acceptance Model. An online experiment involving 415 respondents and a qualitative study with 49 participants are conducted. virtual try-on [5] (VTO) tool is based on augmented reality. Addresses a crucial topic in apparel m-commerce related to product presentation and consumer engagement. VTO tool is found to be less enjoyable than traditional m-commerce interfaces.

2.2 VICO-DR: A Collaborative Virtual Dressing Room for Image Consulting

AUTHOR: Kelly L and Lings I.N

It is a collaborative synchronous virtual dressing room for image consulting, aiming to enhance the online shopping [10]. collaborative virtual dressing room application with distinct features for both image consultants and customers. Here, real-time physically-based cloth simulation algorithm is used to enhance the realism of the virtual dressing experience. The merit is immersive and collaborative virtual dressing room experience. The disadvantage is Lack of details on the cloth simulation algorithm and absence of information.

2.3 Automated Transformation of the Manual Tailoring Industry through an Online Tailor Website

AUTHOR: Kumar A and Kashyap A.K

It provides Chabot design approaches for fashion e-commerce [13], addressing both perspectives. Conducted, analyzing specialized research in the area of chat bots for fashion e-commerce. Emphasizes the importance of Natural Language Processing (NLP) and digital communication in chat bot algorithms. Comprehensive map of Chabot approaches for retailers in the fashion e-commerce sector. Paper does not provide specific details about the methodologies.

2.4 The Application of Artificial Intelligence and VR Technology in Clothing Store Display Design

AUTHOR: Ahmadi H and Fazal-e-Hasan

Investigate and implement the application of AI and VR in clothing store display design. The delay time of 4G vs. Wi-Fi environments, image compression quality impact on delay time, and sensitivity of the robot to instructions are examined. AI modules and VR system structure described. integration of AI[15] and VR aims to enhance the overall user experience in clothing stores. Delay time is discussed concerning image compression quality, the potential trade-offs between image quality.

2.5 LC-VTON Length Controllable Virtual Try-On Network

AUTHOR: Huang H and W.C Lin

LC-VTON is to introduce a novel approach to virtual try-on [19] that allows users to control on clothes. LC-VTON proposes a clothing-agnostic person representation to quantify clothing length and a segmentation generator to predict try-on. The algorithm used is Conditional semantic generation Generative Adversarial Network (GAN). The advantage of this model is that it provides clothing-agnostic person representation for precise clothing length control. The disadvantage is that it does not provide a reference link, making it challenging to access additional details.

3.SYSTEM ANALYSIS

3.1 EXISTING SYSTEM

The tailoring industry uses a traditional manual system to book their clients. The clients must go through a long and stressful process of getting their clothes stitched by traveling to the location of the tailor shop to get their measurements taken which are manually written on some piece of paper or on a book. Although this method is a huge threat to the information of the customer i.e. it can get lost or it can go through the hands of unauthorized people which can result in lack of data confidentiality and integrity. Online tailoring management system will revolutionaries the system and solve these problems by automating the whole system and increase the accessibility irrespective of the customer's location provided they are connected to the internet facility. The custom-tailoring shop will be able to supply well fit clothing by using customization mode, but it has higher cost and lower productivity. Instead of manual measurements, body scan technology is being used to directly extract body measurements.

DISADVANTAGES

- In this system the customer has to travel to the exact location of the tailor shop where he will be getting his clothes stitched. This is a time-consuming process for the customer.
- If the designed material did not fit to the body of the customer, then they have to again reach to them.
- There might be chances of loss of given measurement or the customer design requirement

3.2 PROPOSED SYSTEM

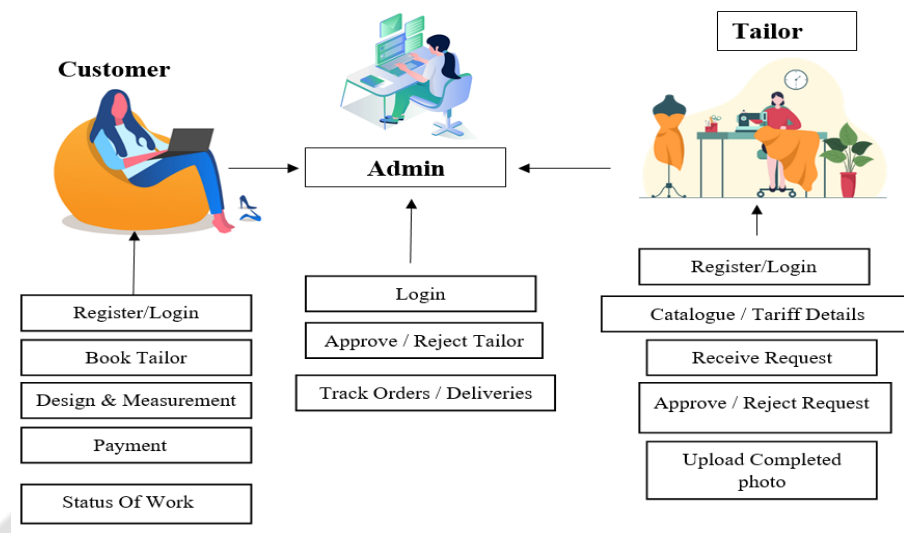
We propose a novel Length Controllable Virtual Try-On Network (LC-VTON). Our approach introduces a novel clothing-agnostic person representation that combines graphic and numerical elements and eliminates clothing information. We quantify clothing length as a numerical value that allows for continuous length control by users. We then predict a target segmentation map based on the desired clothing item and length. Considering the case wearing a top and bottom separately without intersecting, we employ the Context Incompatibility Handling module to ensure the target segmentation map is compatible with the reference. Next, we deform the clothes to align with the target segmentation map. Finally, we generate the clothing-agnostic person image corresponding to the target segmentation map and synthesize the try-on image by fusing all inputs.

ADVANTAGES

- Virtual tailor systems allow customers to customize clothing items according to their preferences, including fabric type, color, pattern, style, and fit.
- Since customers have the opportunity to visualize and customize clothing items before ordering, virtual tailor systems can help reduce the likelihood of returns due to sizing or style issues.
- Virtual tailor systems have the potential to reach a global audience, allowing businesses to expand their customer base beyond their local market.
- By offering customization options, virtual tailor systems can help reduce waste in the fashion

industry by producing clothing items on demand and minimizing excess inventory.

3.3 SYSTEM ARCHITECTURE



4.SYSTEM REQUIREMENT

4.1 HARDWARE REQUIREMENT

- Processor : Intel core i5 processor
- RAM : 16 GB
- Hard Disk : 320 GB
- Operating Systems : windows10
- Keyboard : Standard Keyboard
- Monitor : 15 Inch Color Monitor

4.2 SOFTWARE REQUIREMENT

- Server side : Python 3.7.4(64-bit)
- Client side : HTML,CSS,Bootstrap
- Back end : MySQL 5
- Server : Wampserver 2i
- IDE : Flask 1.1.1

5.SYSTEM IMPLEMENTATION

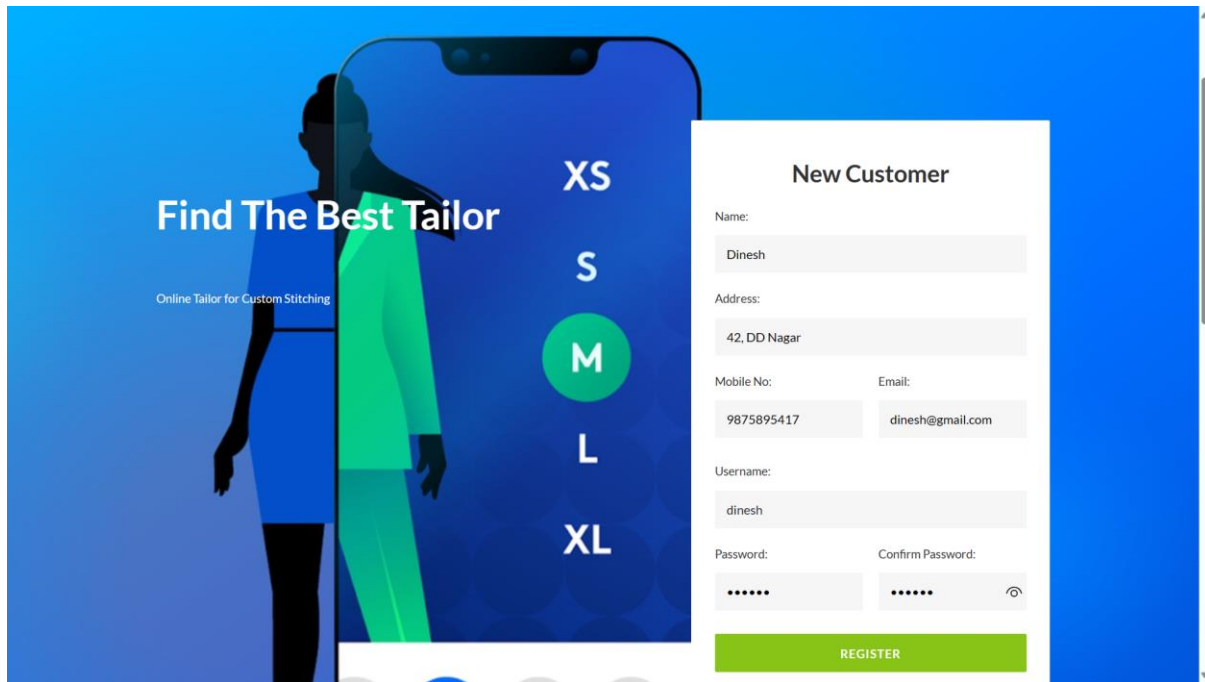


Fig – 5.1: Customer Login

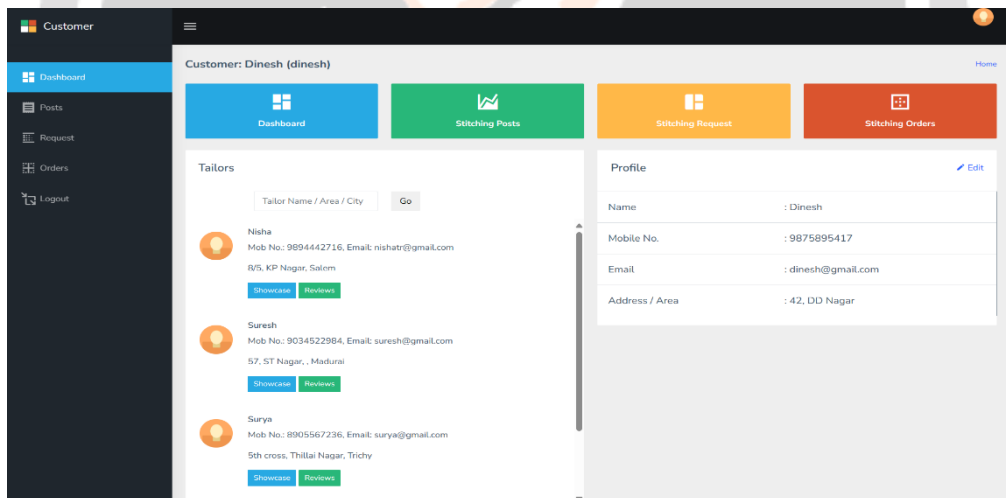


Fig – 5.2: Customer dashboard

5.1 ALGORITHM IMPLEMENTATION:

5.2 EXPERIMENTAL RESULT AND ANALYSIS

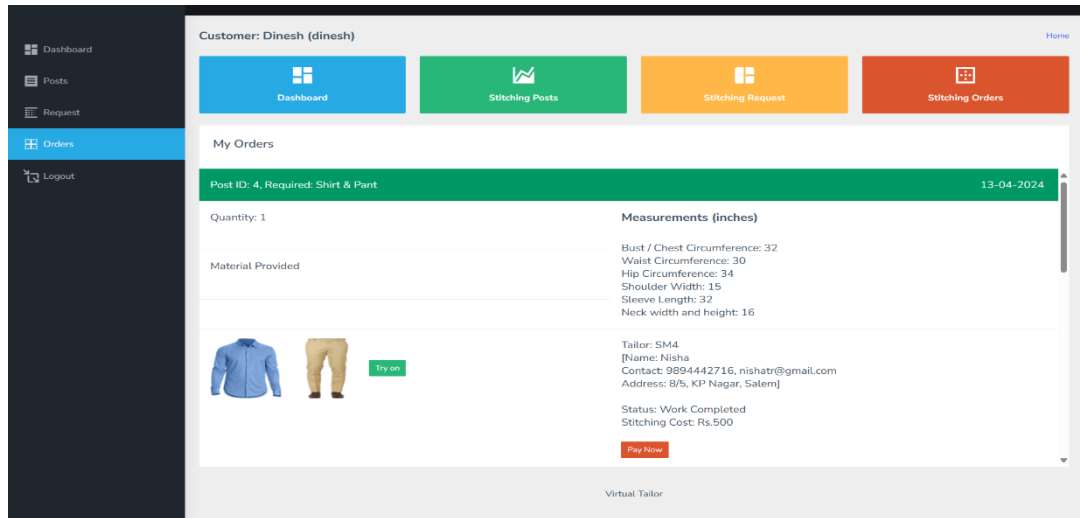


Fig – 5.3: Predicted Result

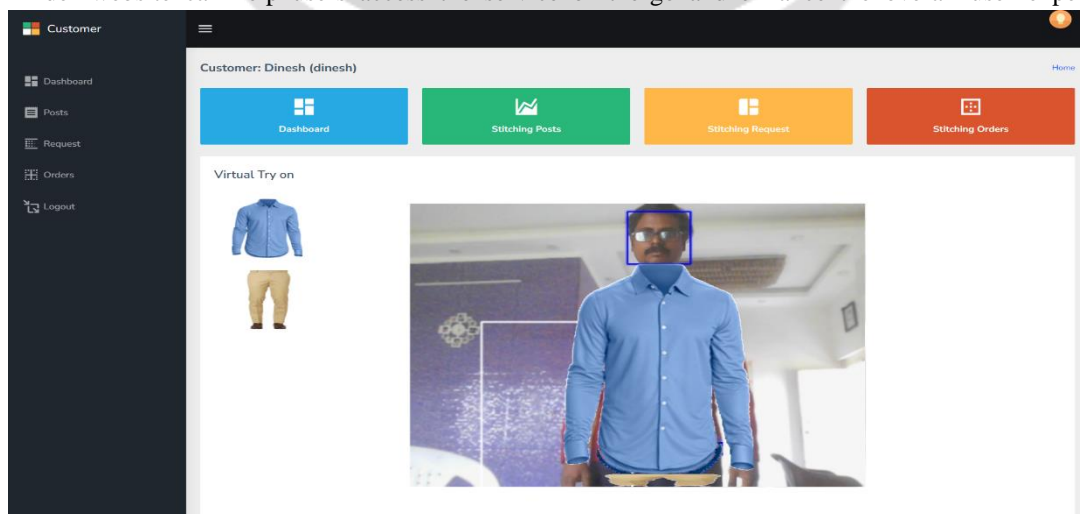
7.CONCLUSION & FUTURE ENHANCEMENT

7.1 CONCLUSION

Developing a Virtual Tailor, a tailor finder website can be a great idea to help people find tailors in their local area. In conclusion, a tailor finder website can be a useful tool for people looking for tailors in their local area. With the right website design, search functionality, reviews and ratings, tailor profiles, and marketing strategies, a tailor finder website can be successful in helping users find the best tailor for their needs. The website can provide a database of tailors with their contact information, location, services offered, and reviews from previous customers. Such a website can help users find tailors who offer the services they need, while also providing important information like ratings, reviews, and contact details. With the right design, functionality, and optimization, a tailor finder website can help users find the right tailor for their needs. By providing a useful service to potential customers, tailor can attract a large user base and generate revenue through advertising, subscriptions or commissions from tailors.

7.2 FUTURE ENHANCEMENT

Here are some future enhancements that can be made to a tailor finder website, developing a mobile app for the tailor finder website can help users access the service on-the-go and enhance the overall user experience.



Personalized recommendations, using machine learning algorithms, the website can provide personalized recommendations to users based on their past search history, preferences, and behavior on the site. Chatbot

integration, integrating a chatbot can provide instant assistance to users and help them find the right tailor for their needs. Social media integration, adding social media integration can help users share their experience with the website and the tailors they have used, thereby increasing the website's visibility and credibility. These enhancements can improve the user experience and increase engagement with the website, ultimately leading to more traffic, more users, and more revenue.

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