

Virtual Dressing Room Implementation Using Body Image –Clothe Mapping

Ahmad al-Qerem

Dept. computer information system
Zarqa University
Zarqa-Jordan
Ahmad_qerm@zu.edu.jo

Abstract—with recent advance in web technology, many online shopping websites have been emerged. Despite its advantages, however, online shopping presents certain drawbacks. One drawback is that it may be difficult for a person to visualize how a given article would look if worn by that person-owing to the rich variation in body size and shape, hair and skin color, etc., in the human population. Testing the fitness of clothes is highly important for both customer and trader. Our approach concentrate on how the selected garment fitted the user’s body and how it will be appear as if he/she in real world. This was carried out by identifying critical points on garment and user’s body dimensions using image processing techniques. In this paper, an application for mitigating the virtual dressing room was designed, implemented and tested.

Index Terms—Component, formatting, style, styling, insert.
(key words)

I. INTRODUCTION

Despite increasing access to technology, people in the modern world are increasingly busy. For many, however, attention to one's appearance remains a high priority. Many people continue to invest time in maintaining and augmenting their wardrobes, shopping for special outfits, etc. In some cases, the investment in time has to do with going to a retail store to try on and purchase clothing and accessories. The process of selecting the right garment in the right size by trying on a series of candidate garment can be very time consuming. Online shopping provides a faster alternative to the conventional store setting. Despite its advantages, however, online shopping presents certain drawbacks. One drawback is that it may be difficult for a person to visualize how a given article would look if worn by that person-owing to the rich variation in body size and shape, hair and skin color, etc., in a human population. In the last decade, garment trying simulation has attracted the interest of many researchers [5, 6, 7, 8, 9]. Many of these research works were using multi-view systems for cloth tracking and retexturing [9, 10, 11, 12, 13]. Optical flow has been widely used in current garment tracking and retexturing [14, 5]. Scholz and Magnor used optical flow to calculate 3D scene flow in a multi-view system and they improved their method by using colour-code with more codewords.

The purpose of the application is to make easier the process of trying clothes while shopping, which would provide comfort for both the vendor and the customer, Reducing the time and helping people to select a wide range of clothing were a motivation to make a program that helps in this area, so it has become important (very necessary) to make the process of trying and buying of clothes more comfortable, easier and more efficient. Moreover, the accelerating pace of development in modern technology – and the software programs – and their dramatic entry into life have led to the development of this application on a large scale. One of the main reasons behind

this tremendous development in technology is the direct interaction between man and computer. This type of application has become a hot topics of research [1, 2, 3, 4]. since it is related to several areas in the human-computer interaction, such as interaction for the purposes of learning, entertainment, fields of medicine and e-commerce operations. E-commerce is one of the modern terms that have entered our daily life that they are used in many life activities that are related to the revolution in information and communication technology.

II. PROBLEM DEFINITION

The problem is trying and fitting clothes while shopping. The person has to search and choose the clothes keeping in mind that the assistant will help him or her. After picking the piece, he (or she) will try it inside the changing room (Virtual dressing room) to make his or her decision. This takes time and effort from both the assistant and the customer. However, with our application there is no reason to go through this traditional process. Fig.1 Context Diagram for Virtual Dressing Room System.

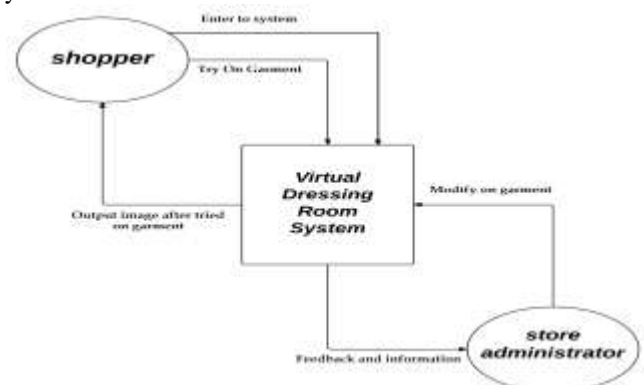


Fig.1 Context Diagram for Virtual Dressing Room System.

A. Application objectives

The main objective of the this paper is developing an application (VDRS) that realistically reflect the look and feel of the clothes as it supposed to The clothes should adapt to with certain bodies of different people. The application with the help of the customer (or the person) will carry out the process of

trying the clothing fast and easily, and then selecting the best for him or her, which will, consequently, help us to take advantage of the enormous capacity provided by the science of interaction between man and computer. This, in turn, will reflect positively on the seller in terms of selling the products in a comfortable, modern way resulting in better sales and on the customer in terms of speed and comfort in scanning through all available products offered to reach the best decision in choosing clothes.

One positive service this application provides specially to females is that they do not have to enter a changing room that may be exploited by some assistants in peeping (or other criminal acts) Finally, this application results in our benefitting the great capacity provided by the science of the interaction between man and computer, and setting up the base line for the foundation for its future development to be used in other beneficial services and systems Fig.2 represent the schematic block diagram for Virtual Dressing Room System

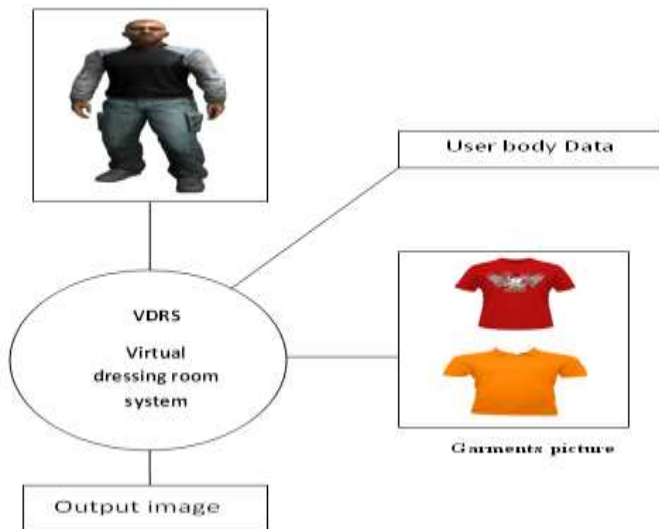


Fig.1 schematic diagram for Virtual Dressing Room System

B. Related applications

1- "Glam Storm"

The virtual fitting room enables you to try on clothes from latest collections by famous fashion labels. Just click the item you want to put on your virtual model. You can adjust the model's body measurements and add your own face picture to better reflect the reality, We want to give you the best total-look styling experience so the virtual dressing room includes the possibility to change hairstyles and makeup's as well. Check out what you would look like in the hairstyle you have always dreamt of or create the makeup of your dreams in the makeup virtual fitting room , Create fabulous looks in the virtual dressing room and participate in interesting competitions with great prizes[15].

2- "Metail"

Web site for people to finally enjoy shopping online with confidence. Using just a few simple measurements, , complete with your hairstyle and skin tone. More and more people are

experimenting with how new looks look on their Me Model, relaxed in the intimacy of their own home with their own online fitting room[16].

III. APPLICATION DESIGN APPROACH

The application approach is to replace the body image by garment mesh surface through garment image, based on the points taken from the front view and the other is from back. Fig.3 shows an overall processing flow. The red dotted rectangle covers the works done in preprocessing stage, including digital image processing and human model creation. On processing stage, garment is reconstructed around the virtual human body.

The application begin treatment process for user image wish standing in front of the camera , but we not touching for some special cases that we occur for example : standing tow person in front of the camera , to resolve this problem holograph placebo is used, which stands inside a user is consistent with and the determined whether The user is standing inside the holographic fully and correctly by five point distributed on surround. In addition to that in processing the human body image we just take the required areas (areas that are inside the holographic) and neglecting areas that are outside the holographic. The image zooming has been used to overcome the problem of small size image and this lead to decrease accuracy. On the other hand it was difficult to determine whether the user is standing inside the holography quite correctly and because of the percentage deviation in the camera. So, the percentage devotion is used at the beginning , was finding the proportion of basic deviation of the camera , and then rates and fixed rates the output depends on the predefined threshold value indicate whether it is accurate enough.

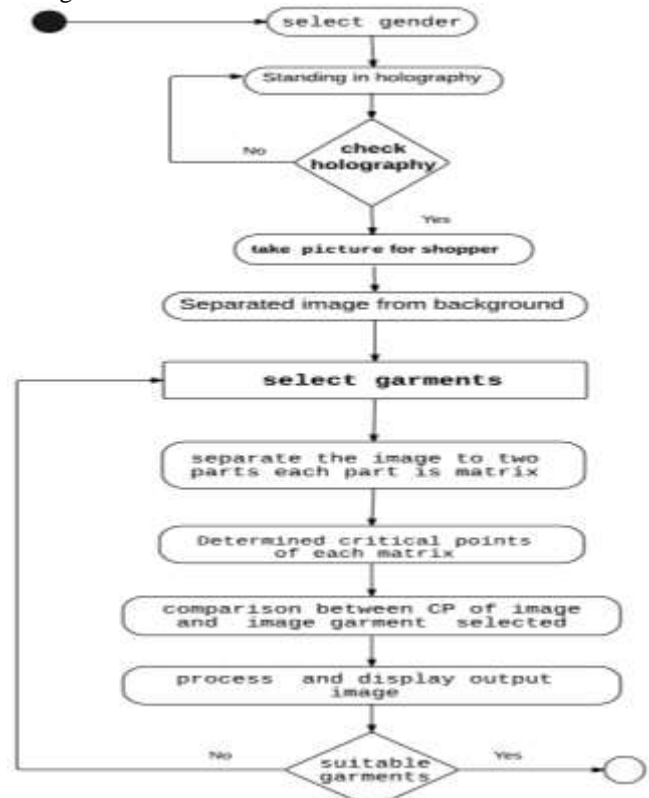


Fig.3 processing flow

IV. IMPLEMENTATION AND INTERFACE

This section shows some interfaces of virtual dressing room using the proposed approaches. The application is implemented on a PC running Windows XP with an AMDAM2 5200+ with 2GB of main memory. Several digital image processing techniques are utilized to gain the silhouette of the garment after image is input. The garment is fit on the image after 5 second for calibration process.

Get user picture in Fig.4 is a second screen show when shopper (user) be in Holographic range. the color of holographic converting to green and that's mean the shopper should be in it and Taking shape holographic to 10 second for taken picture . if shopper move when system take to him picture the picture displaying bad . Thus the user can go to next step in order to select the proper garment he/she interested in as in Fig.5.

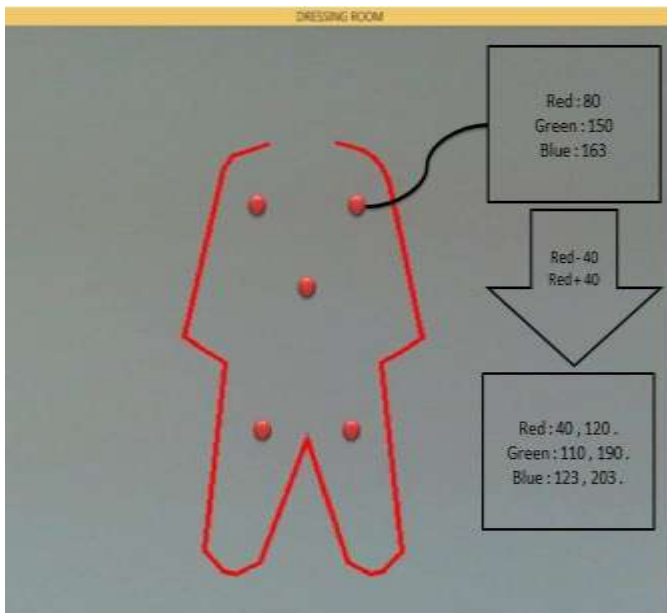


Fig.4 Holographic range area



Fig.5. proposed method and images

V. CONCLUSION

In this paper an application (VDRS) that realistically reflect the look and feel is implemented. The application with the help of the customer (or the person) will carry out the process of trying the clothing fast and easily, and then selecting the best for him or her, which will, consequently, help us to take advantage of the enormous capacity provided by the science of interaction between man and computer. This, in turn, will reflect positively on the seller in terms of selling the products in a comfortable, modern way resulting in better sales and on the customer in terms of speed and comfort in scanning through all available products offered to reach the best decision in choosing clothes. One positive service this application provides specially to females is that they do not have to enter a changing room that may be exploited by some assistants in peeping (or other criminal acts) Finally, this application results in our benefitting the great capacity provided by the science of the interaction between man and computer, and setting up the base line for the foundation for its future development to be used in other beneficial services and systems

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Ahmad Alqerem obtaining a BSc in 1997 from JUST University and a Masters in computer science from Jordan University in 2002. PhD in mobile computing at Loughborough University, UK in 2008. He is interested in concurrency control for mobile computing environments, particularly transaction processing. He has published several papers in various areas of computer science. After that he was appointed a head of internet technology Depts. Zarka University.