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Virtual Trial Room

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Abstract*: *Virtual Trial Room is an application which enables the user to choose fabrics of different designs. The amount and type of clothing worn is dependent on physical stature as well as social and geographic considerations. Our aim is to design a compelling, interactive and highly realistic virtual app, where users/customers can choose between many different types of fabrics designs and proceed to simulate these fabrics on virtual users. Here in this paper, we have proposed a system which helps in coordination of everyday fashion. The system "Virtual Trial Room" involves virtually trying out different fabrics which is done by mining of the fabric image, alignment of models and skin colour detection of image. Our goal here is to save time of the users during trying to choose different fabrics while shopping in stores.
Keywords: Virtual Dressing, 3D Model, Positioning, PHP, MySQL.

I. INTRODUCTION

Now-a-days, fashion is not just something we wear; it's a way of life so it needs to be a wonderful experience while spending so much of time buying it. We all know during the sales the stores become the most crowded place and it becomes even more worse when we need to choose the fabrics and with the design. From the costumer point of view due to so much of confusion that how it will look after stitching the costumer just sees the designs of the fabrics and assumes that it will look good and buys it . Our goal is to save time of the user during choosing out different fabrics while shopping in different stores. We have proposed a system which helps in coordination of everyday fashion while saving time of the user and enhancing the experience. This allows the user to see a virtual image of themselves in the desired cloth of their preference and interact with the virtual mirror. The proposed algorithm is designed in a way which will be compatible on any computational efficient system having a camera. This feature makes the proposed algorithm highly independent and cost efficient. A virtual trial room is the online equivalent of an in-store . It enables shoppers to check the fabrics that how it will look on different types of the body structure and colour. A lot of shoppers have encountered a lot of problems while shopping at a high-end place for readymade garments, especially during peak hours, such as weekends. Tiresome lines, numerous restrictions, enormous crowds make it quite an unpleasant experience. Huge number of customers, and minimum numbers of trial rooms results in quite a lot of waiting time for customers, ultimately resulting in dissatisfaction. Due to security reasons, there is also a restriction on the number of garments that can be taken at one instance of time for trial. It increases the overall shopping time due to multiple trips from the shelves to the trial rooms.

From the boutique's point of view, a large percentage of thefts happen because of sneaking in garments while in the trial room. Also they are unable to show the customers the fresh stock that is supposed to be delivered to the shop in the coming few days. To overcome these problems, we propose a Virtual Trial Room.

The problem is simply the alignment of the 3D model and the fabrics with accurate position, scale, rotation and ordering. First of all, detection of the 3D model and the model body parts is one of the main steps of the problem. In literature, several approaches are proposed for model body part detection and posture estimation.

Our motivation here is to increase the time efficiency and improve the accessibility of clothes try on by creating a virtual trial room environment.

II. BACKGROUND STUDY

The idea behind making of virtual trial room is not new, it's been publicized a lot and the keen interest of the users towards this has increased the growth of this. Most of the earlier applications have tried using this by just overlaying the static image of the cloth over the image of the user captured by the camera. But the user has to align themselves according to the clothing image which was not personified and also not a great experience. Also it helped in no way to user to understand the clothing better but as we can say it was the starting of the application. But we all know behind this there were huge advancements and solutions which were more in sync with actual reality that became the motivation for this. These advancements were majorly in only two parts: the alignment of clothing according to user, and the realism of the clothing.

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A.Alignment of Clothing:

The prior attempt at Virtual Trial Room was the alignment of the user. At the very primitive application, the static image of the cloth was displayed on the screen and the user has to align him according to the static image. There were more appropriate techniques to achieve a proper positioning and alignment of the cloth to the tracked user. It was possible using some hand -held markers by the users. We would receive, combining video tracking and image identification techniques to develop some 3D information from RGB images. The markers were used for positioning, adjustment and scaling. But these markers were not as user friendly.

B.Realism of clothing

One of the highest prior of making Virtual Trial Room was to give a realistic visual experience to the users of trying out clothes without even wearing it out. So it highly depends on the alignment of cloth for the maximized experience. Different material feel differently such as cotton would feel different as compared to silk. At first it was just a static image of the cloth the size was fixed, to it was difficult for the user to actually judge the clothing.

III. PROPOSED SYSTEM

In recent years, particularly the last five years there has been a hike in usage of internet in all the categories. The number of people access the internet and utilizing internet for shopping keeps on increasing due to the development in the field of information technology. Online marketing helps the producers to bring out their varieties of products to a mass in the easiest way. For customers, online shopping would give more information and availability of all kinds of products in every stream.

This makes every product to come to the doorstep and gives consumers the choice of taste and purchase. But when this comes to dressing the quantity purchased is comparatively less. This is because of the fact that people wish to know how clothes look on oneself after stitching and how both the top and bottom matches together and also how the size of clothes fits the contour of oneself. A Virtual Trial Room app is to fulfill all the above necessities and would give the comfort ability of trying on fabrics on a mannequin and hence a wide choice to consumers. This also strengthens the platform of marketing to the producers of dress materials leading to the development of mass retailing of dress marketers. Also, this should be made in a way requiring least external aid is of prime concern.

Virtual Trial Room application would enable people to check out themselves with different fabrics with less number of restrictions will give great pleasure to the customers. Virtual Trial Room application is planned to be modified to find the human male model with variable background and noisier environment. This is the more challenging task in still image using image processing.

IV. SYSTEM ARCHITECTURE

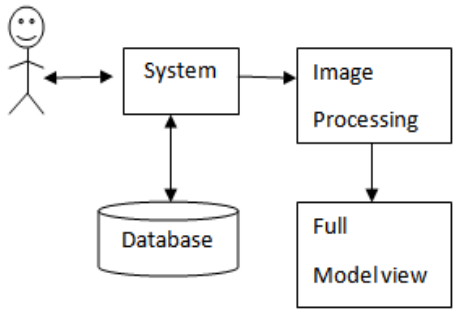

Fig1. System architecture

V. FUNCTIONAL RELATIONS

One case in which the system may know the answer to an ask able goal, even though it has not been directly answered by the user, is when a relation is functional. Relation r(X, Y) is functional if, for every X, there is a unique Y such that r(X,Y) is true. If the system has already found one Y for a particular X for which r(X,Y) is true, it should not re-ask for more instances.

A.Overloading in project

1)User: Admin

2)Functions:

*3)*Verify user.

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a) Insert Model and alignments in Database
b) Calculate cloth with model.
c) Database management.
4) User: - Customer
5) Functions:
a) Registration
b) Click Picture of Cloth
c) Send to Database
6) User: Design
7) Functions
a) Receive customer info from admin.
b) Check picture given by user.
c) Check colour, size and alignment of model.
d) Mapping model to clothed.
e) Give full model view of selected cloth.

B. Divide and conquer

Divide and conquer is an algorithm design paradigm based on multi-branched recursion. A divide and conquer algorithm works by recursively breaking down a problem into two or more sub-problems of the same (or related) type (divide), until these become simple enough to be solved directly (conquer). The solutions to the Sub-problems are then combined to give a solution to the original problem.

C. Object

Three properties characterize objects:
1) Identity: the property of an object that distinguishes it from other objects
2) State: describes the data stored in the object
3) Behaviour: describes the methods in the object's interface by which the object can be used

D. Morphism

In mathematics, morphism is an abstraction derived from structure-preserving mappings between two mathematical structures. The notion of morphism recurs in much of contemporary mathematics. In set theory, morphisms are functions in linear algebra, linear transformations in group theory, group homo morphisms, in topology, continuous functions, and so on. Morphism is a map between two objects in an abstract category. A general morphism is called a homomorphism.

Function overloading or method overloading is a feature found in various programming languages such as PHP, VB.NET, C++ and Java that allows the creation of several methods with the same name which differ from each other in terms of the type of the input and the type of the output of the function. For example, doTask() and doTask(object O) are overloaded methods. To call the latter, an object must be passed as a parameter, whereas the former does not require a parameter, and is called with an empty parameter field.

VI. PRODUCT DESCRIPTION

Customer will go to the shop and the retailer will give the information about the app that how it works, then the customer will sign in after that he will be able to see the difference types of the fabrics. Suppose he choose the fabric from the cotton section the next step will be to trying a fabric on the mannequin. The customer also will be able to change the complexion and the height of the model. Customer can set up the model according to his own personality. With the help of the "Virtual Trial Room "application is also able to find the human male model with variable background and noisier environment's. Now they can easily see what the attire looks on them virtually without even stitching and trying it out. So this is how our proposed product is going to work.

VII. SCOPEOF THE PROJECT

Growth in online shopping and the wish of people to have to enjoy its maximum utilization on purchase of dress with complete satisfaction of personal realization justifies the need to develop an algorithm which virtually dresses people with the selected dress.

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In order to achieve the above requirement, the algorithm in such a way that everything works reliably without the aid of external light adjuster or 3-D viewing or fixed camera, which is usually needed for the present algorithms creating the limitations of its own use, has been developed to reach out to all people. This algorithm would enable people to check out themselves with different dresses with less number of restrictions will give great pleasure to the online shoppers. The algorithm is planned to be modified to find the human silhouette with variable background and noisier environment which is the more challenging task in still image using image processing.

VIII. CHALLENGES

A. Sizing of cloths.
B. Quality of the cloths.
C. Colour shades.

IX. OBJECTIVE

It allows the user to interact with the garments the show virtually and get a feel of the fit and the make of it without physically going to a fitting room. It saves your time from the long queues at the malls or departmental stores. Also saves the retailer from damaged or soiled garments due to heavy try on by customers. Virtual Trial Room is a customized, innovative web application designed with the intention of pampering fashion-conscious customer with the facility to view themselves in different attires

X. CONCLUSION

Virtual makeover is the technology based commercially important tool. It can be used for Commercial and Training purposes. Virtual makeover can be efficiently used by any person with limited motor skill for PC. It works on the advanced augmented reality technology to get Virtual Reality experience for the customer.

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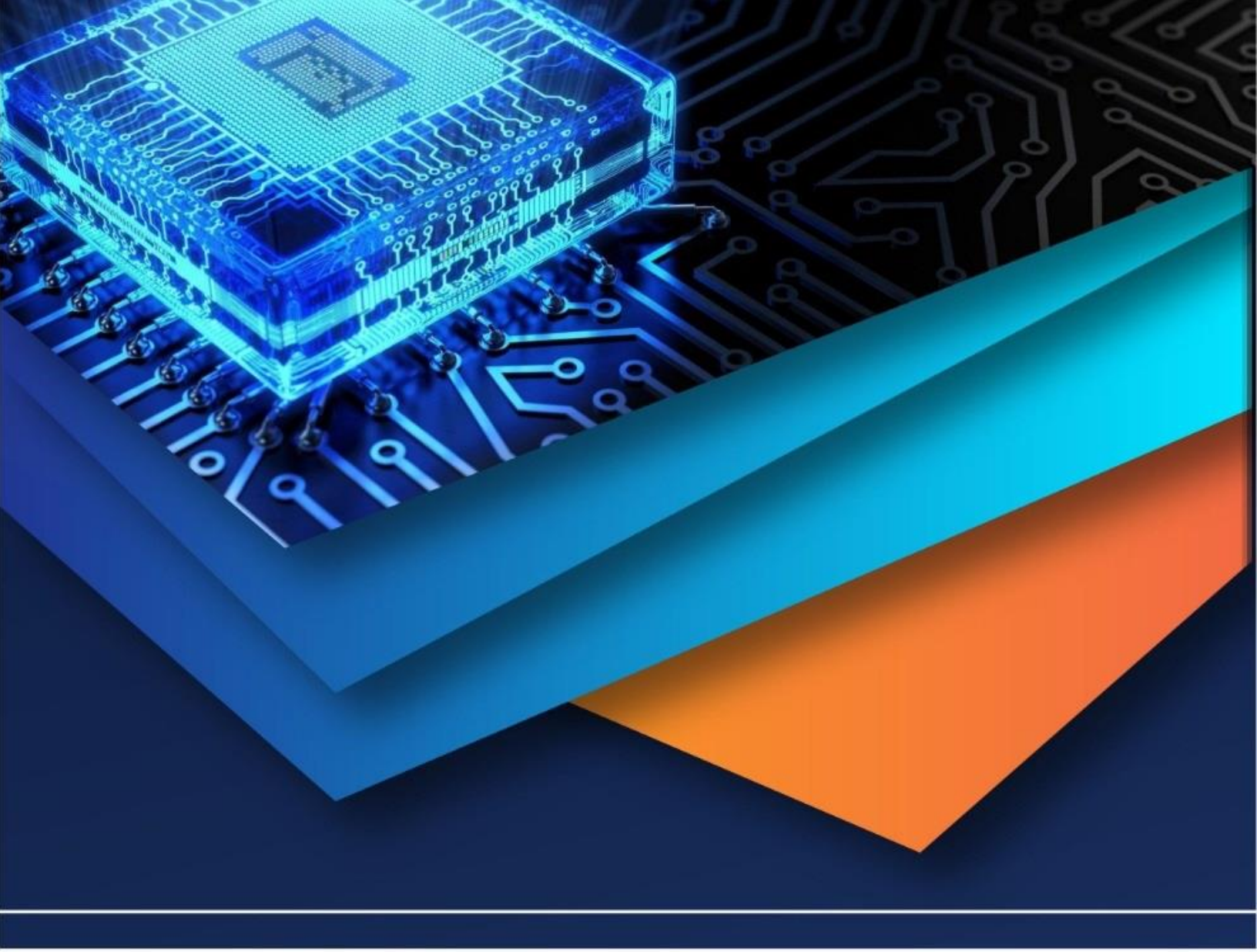

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