Web Based Application of Virtual Trial Room for Sari

Karishma Dhende, Monica Jadhav, Pushpak Hegde, Siddharth Joshi, Santwana Gudadhe

Abstract - **This paper presents a Virtual Trial Room Web application using three tiered architecture which allows a user to try on virtual Sari. The most widely deployed Web application architecture is the 3-tiered system, which consists of a front-end Web server, an application server and a backend database server.**

Aim is to build a compelling, interactive and highly realistic virtual system using three tier architecture, where users can choose between many different types of sari designs and proceed to simulate this sari on virtual users. It involves virtually trying out different cloth models which is done by processing of the user image, alignment of models and skin color detection of image. A Virtual Trial Room application allows a user to try Sari. In order to gain a visual experience of the wearing the sari, the user actually has to align herself to the clothing image.

This application not only saves time and effort but also gives a wider range of collection to try saris. It also brings a digital shopping experience for the customers to purchase the saris online by using this latest technology. Thus these applications attracts the customers, retain them, offers immersive and social shopping experiences that makes customers keep coming back and it also reduces return rates. **Thus, the objective is to create a web application which will add ease to physically tiresome task of sari selection by visiting various shops and also boost sale of vendors. Our goal here is to save time of the users during trying out different Saris whereas shopping in stores or online.**

Keywords— **Virtual trial room, three tiered architecture, skin colour detection, cropped image**

I. INTRODUCTION

Shopping is a time-consuming activity for some people, whereas for others a much enjoyed one. Many approaches have been tried in the not so distant past to make it possible to simul -taneously answer two fundamental shopper concerns: "does it suit" and "does it fit", therefore reducing much of the guesswork involved in shopping [1]. It is estimated that majority of the consumers don't buy clothing online because they don't want to take any risk with the sizes. In addition, a large percentage of the purchased items are returned. This brings an additional financial burden to retail companies. Therefore, the objective of this work is to develop a Virtual Trial Room (VTR) application that can run on personal comp-uter or laptop and help the user to try various options.

A Virtual Trial Room (also often referred to as virtual fitting room and virtual changing room although they do, on examination, perform different functions) is the online equivalent of the near ubiquitous in-store changing room – that is, it enables shoppers to try on different saris to check one or more of size, fit or style, but virtually rather than physically. In this application user can pick from different Saris and then without wearing the actual sari, the user can see a live impersonation of it, worn on the user body by using image processing. Here user has choices of zoom in, zoom out and also they can give body statistics as input which will give virtual realistic view of user as output. A Virtual Trial Room application allows a user to try on Sari. In order to gain

a visual experience of the wearing the sari, the user has to align herself to the clothing image.

This VTR application can enhance the way customers shop online and help them to choose the correct type and style/colour of the saris.

II. REVIEW OF LITERATURE SURVEY

A) The Virtual Fitting Room (VFR) application is a real-time human friendly interface, which allows trying new clothes using webcams or smart phones [1]. In this three stage algorithm is used: detection and sizing of the user's body, detection of reference points based on face detection and augmented reality markers, and superimposition of the clothing over the user's image. The proposed algorithm is implemented as a universal Java applet using Open CV library functions and it can run in real-time on existing mobile devices.

B) The Multi-sensor body scanners combined with new algorithms and social media technologies have started a revolutionary shift away from the classic desktop paradigm and into the direction of intuitive, "natural interaction" where people interface with the technological world through hand gestures, speech and body language[2]. This article reviews recent examples of Virtual Fitting Rooms (VFRs) and supporting technologies which facilitate the shopping experience by letting customers to try-on apparel and/or mix and match accessories without being physically present in the retail shop. These platforms are not only powerful decision tools for the on-line shopper, but also contribute to the fun factor of in-store shopping. Using depth scanning techniques, VFRs can create accurate 3D models of shoppers and meaningfully query retail digital catalogs, filter out non-fitting items and allow customers assess the styling and matching aspects in real time. In addition, omnipresent social networking features allow sending photos or videos of the shopper wearing the apparel for quick feedback. The quality of service provided by current VFRs is sufficiently high to boost sales but also minimize returns due to improper fit.

C) Image processing design flow for virtual fitting room (VFR) applications, targeting both personal computers and mobile devices. The proposed human friendly interface is implemented by a three-stage algorithm: Detection and sizing of the user's body, detection of reference points based on face detection and augmented reality markers, and superimposition of the clothing over the user's image[3]. Compared to other existing VFR systems, key difference is the lack of any proprietary hardware components or peripherals. Proposed VFR is software based and designed to be universally compatible as long as the device has a camera. Furthermore, JAVA implementation on Android based mo-bile systems is computationally efficient and it can run in real-time on existing mobile devices.

III. PROPOSED SYSTEM

A Virtual Trial Room is a Web application which uses three tiered architecture. This system composed of front end(client side) a graphical user interface(GUI), the main business logic resides on server side is the middle layer, and the back end is database server.

Client side or front end involves GUI which is presentation layer to the user. On GUI user will be able see different images of saris which is linked to the database where images of saris are stored. User has to select sari according to their choice clicking on next upload the image of user. Now there are design and implementation constraints for image as follows:

1. The image uploaded by the user should be color image.
2. The image size should be appropriate/passport size image.
3. The image uploaded should be Feminine.
4. All the fields of statistics should be filled correctly and it should be numeric data.

By checking all the image constraints it will go on the server for processing and finally the image of user and sari is mapped using image processing on server and send back on client machine as output image.

A. *System Architecture-*

The system is composed of user with personal computer or laptop at front end, the business logic resides on server i.e. processing of image and the database which stores the images of saris.
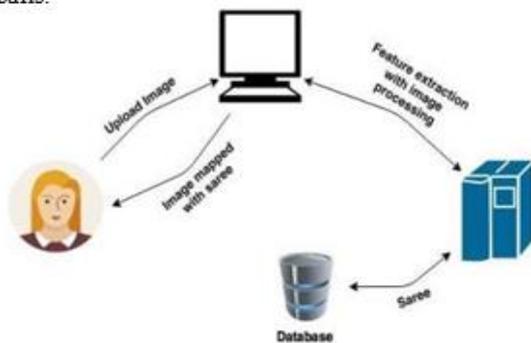
Fig 1. System Architecture

Fig 2. System Overview
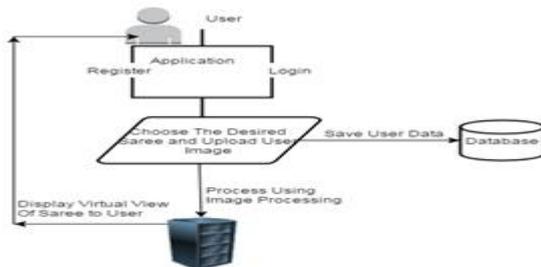
B. System Implementation-

The user accesses the web application to find the login page . On the login page there are two options login for the already registered users and sign up for new users. After login the user can select from verity of saris and then upload the appropriate photo. This user information is then saved to the server database. The selected sari and the uploaded image then go through image processing on backend and the virtual view of user in that sari can be seen.

IV. PLATFORM

WAMP is a software application server platform. It comes with a number of other modules including OpenSSL, phpMyAdmin, MediaWiki, Joomla, WordPress and more. X is for cross platform .WAMP is a type of XAMPP. Main reason of using WAMP is because of its ability to serve web pages on the World Wide Web and also provides support for creating and manipulating databases in MySQL and SQLite among others. It provides functionality for both standalone(using localhost as FTP client) as well as client-server (using content management system like Joomla or wordpress).

V. RESULT AND DISCUSSION

This advanced technology is to get virtual reality experience for the customer. These technologies are not only powerful decision tools for on-line shopping but also contribute to the fun factor for in-store shopping. This paper presents realistic application where in the users are made to try out virtual sari. The clothes are properly aligned according to the user's Statistics. POST method is used over GET method to transfer user input because of its enhanced security and flexibility in size of data to be transferred. As it is a e-commerce web site it is vital to keep track of the current state of the shopper's cart. Session id is used to achieve this goal. session_start(),session_destroy() ,etc are methods used. User enters name and password in the form. mysql_query() and mysql_fetch_array() are the methods used to check whether name and pass matches to the one in the database or to make new entry in database. With successful submission user is directed to upload page, where user select the image they wants to upload. The uploaded image is sent to target directory using move_uploaded_image() method for further processing. There is also an option to login through facebook account. For that one has to create app on facebook developer's page. App id & secret code is used to enable users to login on the website using facebook. The partially implemented link provides following pages:

Fig 3. Login Page

Fig4.Home Page

Fig5. Free Trial Page

Fig 6.Sari-Option Page

VI. FUTURE SCOPE

For more Advancement in virtual trial room we can give 3D Animation as a output instead of image and this will give more real view of a person. Also enhancements to this Virtual Trial Room, social networking features can be added, such as sharing on social networking platforms, e-mailing a snapshot to a friend or uploading the snapshot somewhere for friends and family to comment.

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