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VIRTUAL DRESSING VIEW

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ABSTRACT

Real time virtual dressing room is used in shops, mall and any shopping center. Trying cloths in shopping center is actually a time consuming activity. Besides, it might not even be possible to try on clothes in such cases as online shopping. Our motivation is to increase time efficiency and improve the accessibility of clothes try on by creating virtual dressing room environment. There has been a great increase in interests towards online shopping. In case of purchase of products like apparels which always require a sense of knowledge on how cloths would fit upon a person. This is the major reason why less number of apparels are being shopped online. Hence, a virtual dressing room which would make people know how cloths personally fits in would be a great luxury for the online sellers which could give a wide choice for customers. For online marketers, this would be a great approach for enhancing its market.

I.INTRODUCTION

The system focus on dynamic-based clothes animation technique usually involves mathematical cloth model, numerical integration of ordinary differential equations, collision detection between

the body and clothes, the self-collision detection of clothes, and other complex issues, resulting in the simulation performance is difficult to meet the real-time need of clothes animation. As an essential part of clothes animation, the dressing process also has important impact to the overall system performance and applicability, even restricting the prospect of clothes animation. The technique of Virtual Dressing Room for the virtual fitting of clothes to a person involves the recognition

of human from the background with respect to light variations and with least disturbance of other objects. This is to be followed by detecting contour of both upper and lower body, which is done by taking laplacian filter and then edge detection. After then, feature points are extracted based on the basic structure of human. With these points as reference the sample shirt is warped to fit for the person perfectly

II.LITERATURE SURVEY

According to Srinivasan K. and Vivek S.proposed [1] proposed Implementation Of Virtual Fitting Room Using Image Processing. System proposed a virtual dressing room approach using image processing. There has been a great increase in interests towards online shopping. In case of purchase of products like apparels which always require a sense of knowledge on how cloths would fit upon a person. This is the major reason why less number of apparels are being shopped online. Hence, a virtual dressing room which would make people know how cloths personally fits in would be a great luxury for the online sellers which could give a wide choice for customers. For online marketers, this would be a great tool for enhancing its market.

According to Diplom-Ingenieur et. Al. [2] proposed A Virtual Dressing Room based on Depth Data. The amount of goods the buyers return may also be reduced due to a more precise representation than 2D images of the cloth they are willing to buy using Virtual Dressing Room that we will be introducing In this project .It offers a solution for the mentioned aspects. The application is based on a mirror, represented by a display that outputs the image of the camera [2]. If a person is standing in front of this virtual mirror, the person will be able to select desired clothes. The selected garment is then virtually superimposed with the image recorded by the camera. In general, this technique can be categorized under augmented reality (AR), where a real-time view of the reality is extended and additionally overlaid with additional information. This paper mainly focuses on the applications in cloth stores and also a home setup is possible as well.

P. Ian Wilson and Dr. J. Fernandez [3] proposed a "Facial feature detection using Haar classifiers. For Haar classifier object detection the core basis is its Haarlike features. Rather than using the intensity values of a pixel, these features use the change in contrast values between adjacent rectangular groups of pixels. Then the contrast variances between the pixel groups are used to determine relative light and dark areas in the image. The haar-like feature is formed by two or three adjacent groups with a relative contrast variance. The haar features can be easily scaled and examined by increasing or decreasing the size of the pixel group. Haar like features as shown below can be used for face detection.

Euratex [4] proposed The European Textile/Clothing Industry on the eve of the New Millennium. It is an open source software. OpenCV has C, C++, Python and Java interfaces which supports Windows, Linux and Android. It was basically designed for efficient computation. The OpenCV library can take advantage of multi-core processing as it is written in optimized C/C++. The usage ranges from interactive art, to the inspection of mines and also stitching maps.

According to Philipp Presle [5] A Virtual Dressing Room based on Depth Data. This is one of the methods for the body parts detection is the use of the shape descriptors such as Histograms of Oriented Gradients(HOG).

K. Onishi et. Al [6] proposed 3D Human Posture Estimation using the HOG Features from Monocular Image. It finding faces using images with controlled background: This is the easy way out. We can use images with a plain monocolour background and use them with a predefined static background. By removing the background, it will always give us the face boundaries[6].

According to D. Chai, and K. N. Ngan, "Face Segmentation using Skin-Color Map in Videophone Applications," [7] Finding faces by motion: If a real-time video is used, the reality that a face is almost always moving can help a lot. The face can be easily detected by calculating the moving area. The main disadvantage here could be,if there are moving objects in the background.

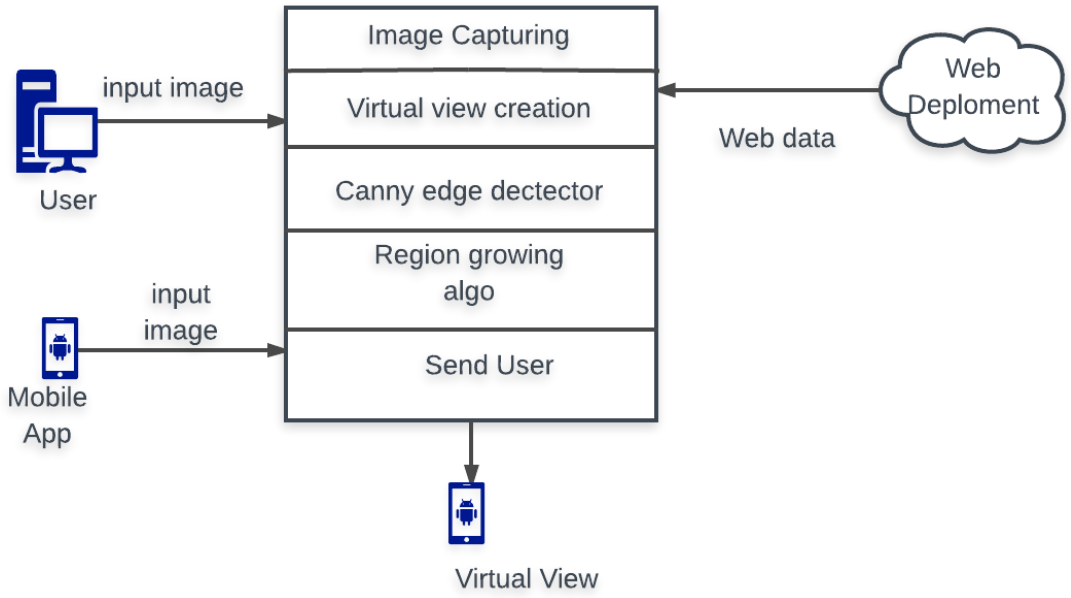
J. Young Choi, et. Al. proposed [8] Color Local Texture Features for Color Face Recognition. This work has done on OpenCV comes with a trainer as well as detector. It can be trained with your own classifier for any objects like cars, cricket bat etc. We have used OpenCV to create one such trained classifier.Here we will deal with face detection. OpenCV already contains many pre-trained classifiers for face, eyes, smile etc. Those XML files can be stored at our desired path. We have developed face detector with OpenCV using haarcascades. Initially we need to load the required XML classifiers in our system. We have used the haarcascade_frontalface_default.xml as the base xml file. Later on the input image (or video) in grayscale mode which is captured by the camera of the system is loaded. Now we find the faces in the image. If faces are found, it returns the positions of detected faces as Rect(x,y,w,h). We can create a ROI for the face detected, when this locations are detected.

According to P. J. Phillips et. Al. [9] proposed a, Finding faces by color: If color images are used, the typical skin color to find face segments might be used. The main disadvantage here is it is not very robust under varying lighting conditions and doesn't work with all kind of skin colors.

W. W. Smari and G. C. [10] proposed the task of trying clothes in stores is one of the most time consuming tasks today. Usually long queue and time required are not acceptable, for example when standing in front of full fitting rooms. Additionally time is lost when changing clothes many a times. Reducing this time and helping people to put on a large collection of garment is reduced time was a relevant motivation for this project. Using modern technology - A virtual dressing view is to fulfill all the necessities and would give the comfort ability of online shopping of clothes and hence a wide choice to consumers. This also strengthens the platform of marketing to the producers of dress materials leading to the hardware as well as software - the try-on experience can be exponentially improved. Even in web shops people are very sceptic buying clothes because an option for try-on of clothes is not available and also the feel of clothes cannot be judged. Reducing return rate of cloths.

III.ARCHITECTURE

The below figure 1 show the how proposed system has execute, basically the main objective of proposed system is to create the virtual view of system. It can support for web as well as application also. The middle were phase execute the different algorithms and create the final virtual view of user's input image development and mass retailing of dress marketers. Also, this should be made in a way requiring least external aid is of prime concern.



V.ALGORITHMS

Color Clustering Algorithm

Input : Image I, int alpha = (pixel >> 24) & 0xff; int red = (pixel >> 16) & 0xff; int green = (pixel >> 8) & 0xff; int blue = (pixel) & 0xff;

Output : RGB [] vector

Step 1: Read each Row R= $\sum_{k=0}^{n} R[k]$

Step 2: Read each column K= $\sum_{k=0}^{n} R[k]$

Step 3 : Get the RGB value of the pixel.

Step 4: Find the average of RGB i.e., Avg = (R+G+B)/3

Step 5: Replace the R, G and B value of the pixel with average (Avg) calculated in step 4.

Step 6: End for end for

Distance Vector Similarity classifier

Input: Training set (v1:N)

Output: Multiclass Classifier

Testing:

Classification of a new sample zl

for j = 1 to (k : 1) do

- Classify zl by jth model
- if (zl is classified as (+1))

if (j = 1) classj(zl) C1 else use the defined thresholds

to decide classj(zl)

else

if (j = k : 1) classj(zl) Ck else use the defined thresholds

to decide classj(zl)

end if

end for

Canny Edge Detection

Input : Image image, Threshold T

Output : Image with define edges

Step 1: Convolve image f(r, c) with a Gaussian function to get smooth image f Mod (r, c). f Mod(r, c)=f(r,c)*G(r,c,6)

Step 2: Apply first difference gradient operator to compute edge strength then edge magnitude and direction are obtain as before.

Step 3: Apply non-maximal or critical suppression to the gradient magnitude.

Step 4: Apply threshold to the non-maximal suppression image.

VI.CONCLUSION

The above work has been done with the help of Android Software. As the software deals with handling of matrices, Android is the perfect choice for dealing with images as every pixel can be considered to be a matrix

element and hence, the programming is quite easy. Additionally, Image processing toolbox provides with many number of library files which can be directly utilized for processing. Also, software is fast processing i.e. it could process 200*200 pixels in one second.

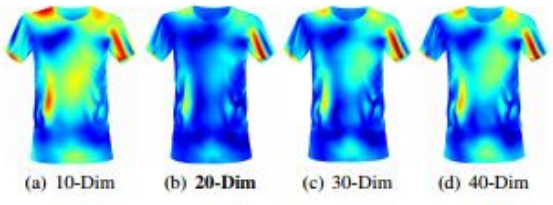


Figure 2 : Shape prediction accuracy versus subspace dimension. The shape prediction error (in cm) does not decrease monotonically with the number of principal components. Over fitting occurs with more than 20 dimensions. These errors are illustrated on one of the ground truth clothing meshes, with hot/cold colors representing large/small errors.

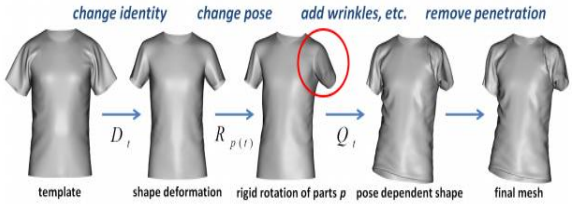


Figure 3 : (1) The template mesh is deformed to fit a new body shape. (2) The pose of the underlying body is used to apply a rotation to clothing parts. (3) Pose-dependent non-rigid deformation produces wrinkles learned from examples. (4) Vertices are moved locally to remove interpenetration with the underlying body mesh.

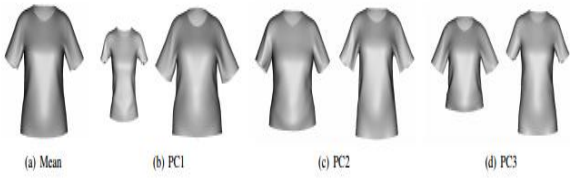


Figure 4: Deviations from the template shape: (a) template deformed by the mean deformation to create a "mean template"; (b-d) mean template deformed along the first three principal component directions (# 3 standard deviations).

Figure 5 :For each pair, the left piece of clothing shows the physically-simulated example from the pose training set, and the right piece shows the synthesized deformation patterns predicted by our model.

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. 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 best advantage of our method is the dressing process takes only a few assumptions and manual intervention for various styles of clothes, making it is possible for dressing in virtual dressing room for clothes ecommerce applications.

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