

Development of a Virtual Dressing System

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Introduction

Recent years there have been an overwhelming growth in the usage of internet based systems to sell appareled based products to online customers. One of the major problems that experienced by both electronic apparel merchants and customers is the difficulty in determining how a cloth will fit to the customer. Customers are reluctant to purchase garments online because they are unsure about the exact size to order, and how that cloth will look on them. Virtual dressing room is a relatively new concept which is slowly becoming more popular. This new technology allows the customer to fit on the virtual garments on a live video model of the customer. Therefore, the customer can be certain that both the style and the fit are matched before garments are purchased online.

The need for the virtual dressing systems is becoming more essential with the rapid growth of online marketing systems. This will benefit the customers by saving the don and doff time. Also customers can order clothes online without going to a shop and try clothes. In addition customers can save lot of time that is wasted in fit on queues. Also shop owners can reduce the extra cost that is involved in fitting rooms and quality of the clothes will not be deteriorated by frequent touches by customers. Instead of operating in a limited geographical area shop owners can use virtual dressing rooms to sell their garments in the internet to a large customer base around the world.

Methodology

This work developed an argument reality virtual dressing room system that can dress up a virtual model of the customer using image processing techniques. There are two stages in the modeling process namely, image selection and image processing. First live video stream of the customer is loaded to the image processing application which is run on a computer. In the computer interface where the video stream is running there are buttons with various functionalities like garment selection and zooming. Next the customer needs to hold and move a color tag that can be detected by the image processing software. When the customer selects the suitable garment color tag is over layered by the chosen garment. Therefore, when the customer move the color tag in the real world garment is moved left-right, front and backward in the virtual dressing room environment. Therefore, by using color tag as a guide customer can virtually dress the clothes in the virtual environment.

The proposed system used Visual Studio 2008 with openCV image processing libraries in HSV color spectrum. It is observed even a low resolution web camera can be used to input live video stream to the system. Also by using this interactive software user can zoom in out the dress in order to fit it to his body.

Results & discussion

Subsequent testing of the system showed virtual dressing room system works at an acceptable level. Major drawback is computation and image processing time are too high and it limits the real time usage. Image processing time can be further reduced by optimizing the codes and memory usage. Computation burden is further reduced by the

fixing a single colour background in the dressing room. This will reduce the burden of detecting the colour tag and the user from the live video stream.

References

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