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CONTROLLING VLC MEDIA PLAYER BY HAND GESTURES

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Abstract

In this Project we try to control our VLC player using hand gestures with the help of OpenCV and Python. Computer applications require interaction between humans and computers. This interaction needs to be unrestricted and it has made it challenging to traditional input devices such as keyboard, mouse, pen etc. Hand gesture is an important component of body language in linguistics. Human computer interaction becomes easy with the use of the hand as a device. Use of hand gestures to operate machines would make interaction interesting. Gesture recognition has gained a lot of importance. Hand gestures are used to control various applications like windows media player, robot control, gaming etc. Use of gesture makes interaction easy, convenient and does not require any extra device. Vision and audio recognition can be used together. But audio commands may not work in noisy environments.

I INTRODUCTION

Now a days Media player has become one of the fundamental parts of our daily lives and it is used by anyone and everyone. Generally, media player has functions like volume up, volume down, play, pause, forward,backward and mute operations.This project implements computer vision and gesture recognition techniques and developsa vision based low cost input device for controlling the VLC player through gestures.To control the VLC media player without physical interaction with the computer. The image is captured and verified with our system in which image pre-processing and other techniques are used for the detection of gestures.This project aims human computer interaction becomes easy with the use of the hand as adevice.

II EXISTING SYSTEM

In the existing system, a face and hand gesture-based media player system that will provide efficient services such as pause the video when user not looking at the video and plays when userlooks at it.

Problems in existing system

- Various static hand gesture images were stored in the image database which was used.
- Gloves were used, which may be misplaced and is time consuming to wear.

III PROPOSED SYSTEM

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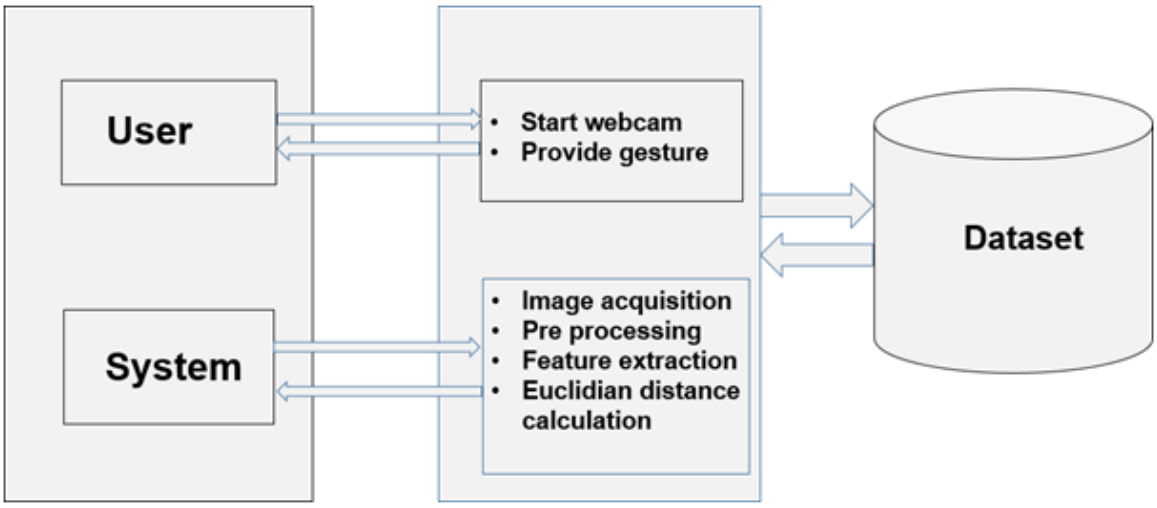
In the proposed system supports the smart facility of providing input which is by hand gesture. By this method user can handle applications from a distance without using keyboard and mouse. Thisapplication provides a novel human computer interface by which a user can control a media player(VLC) using hand gestures.

Advantages of proposed system

- The system converts the user given input as an image eliminating the use of database.
- No gloves are required while giving the input to the system.

IV AARCHITECTURE



Architecture

V ALGORITHMS

K-Nearest Neighbor is one of the simplest Machine Learning algorithms based on Supervised Learning technique. K-NN algorithm assumes the similarity between the new case/data and available cases and put the new case into the category that is most similar tothe available categories.

K-NN algorithm stores all the available data and classifies a new data point based on the similarity. This means when new data appears then it can be easily classified into a well suite category by using K- NN algorithm.

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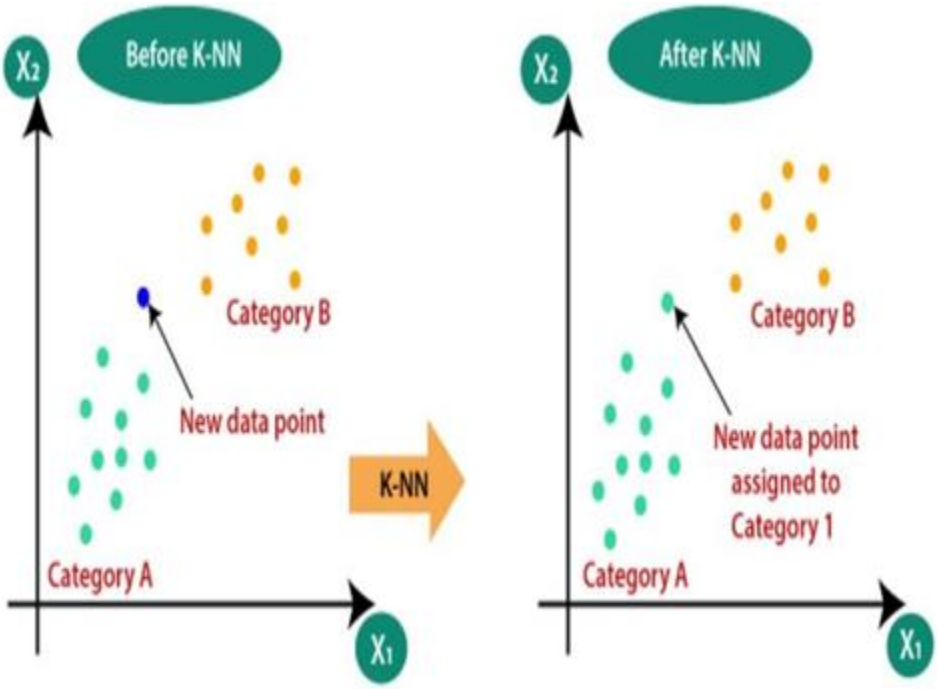
The grey scale image consists of black and white pixels, which are classified based on similarities by using KNN algorithm. Based on this the contours will be detected.

Suppose there are two categories, i.e., Category A and Category B, and we have a new datapoint x1, so this data point will lie in which of these categories. To solve this type of problem, we need a K-NN algorithm. With the help of K-NN, we can easily identify the category.



KNN Algorithm

VII RESULTS

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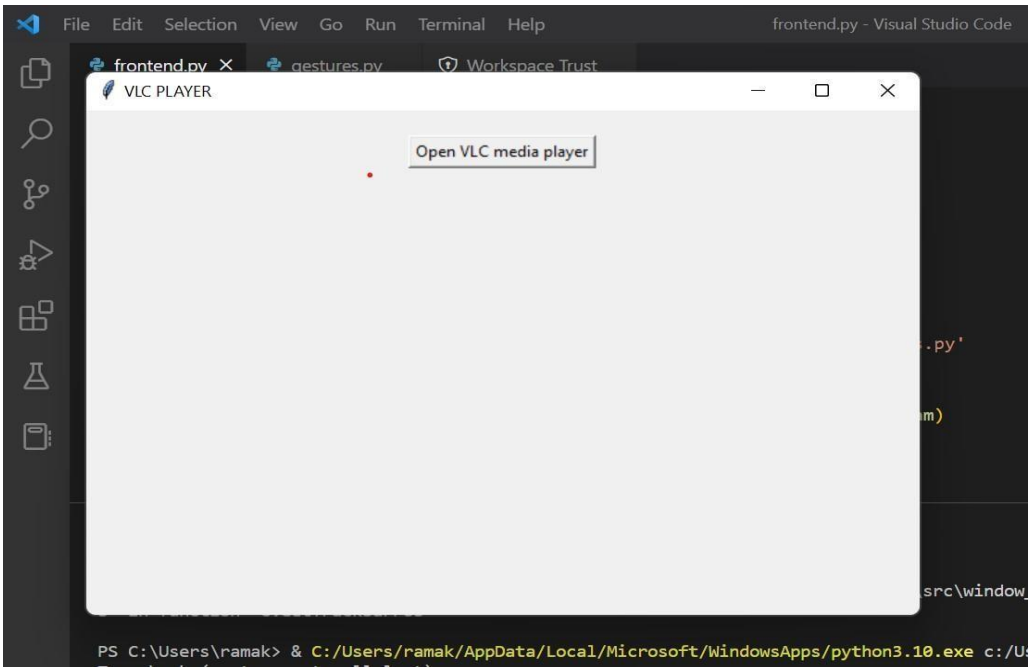
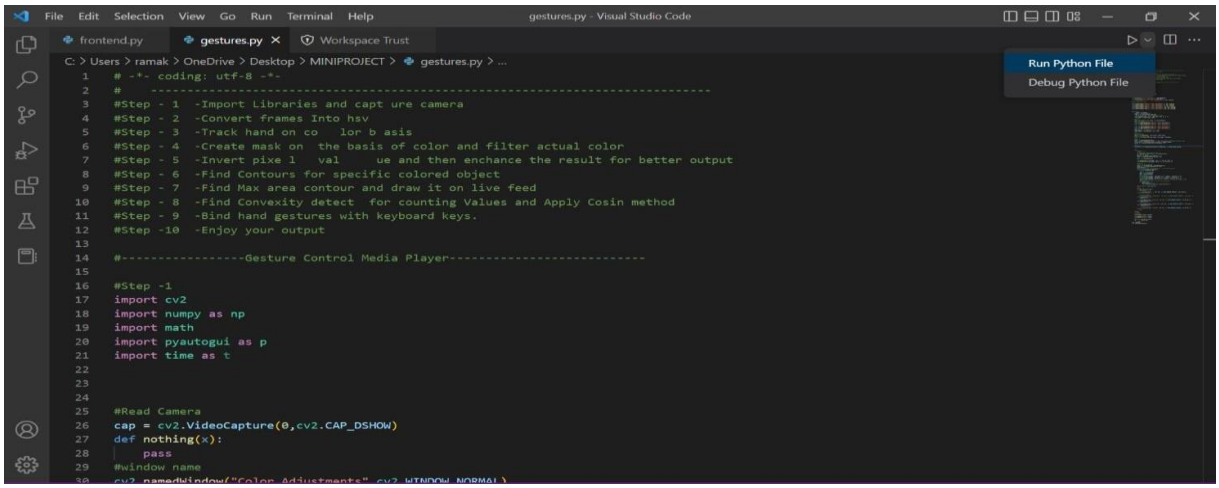


Main Page



Python Code

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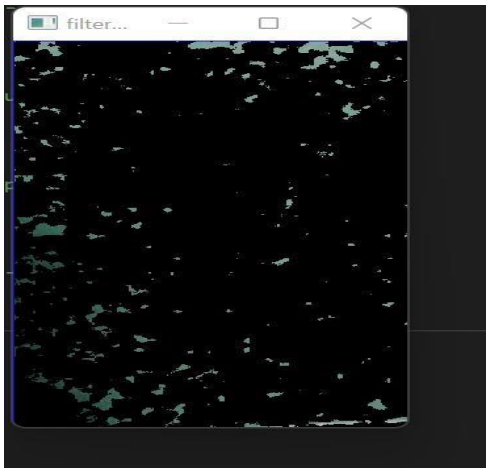
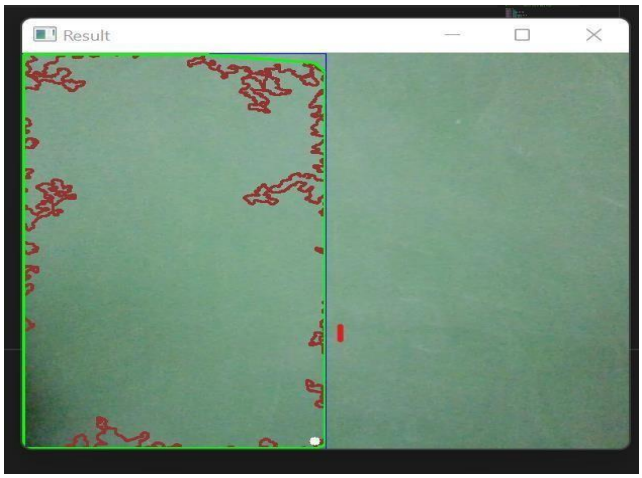
Color Adjustments Window



Filter Window

Threshold Window



Result Window

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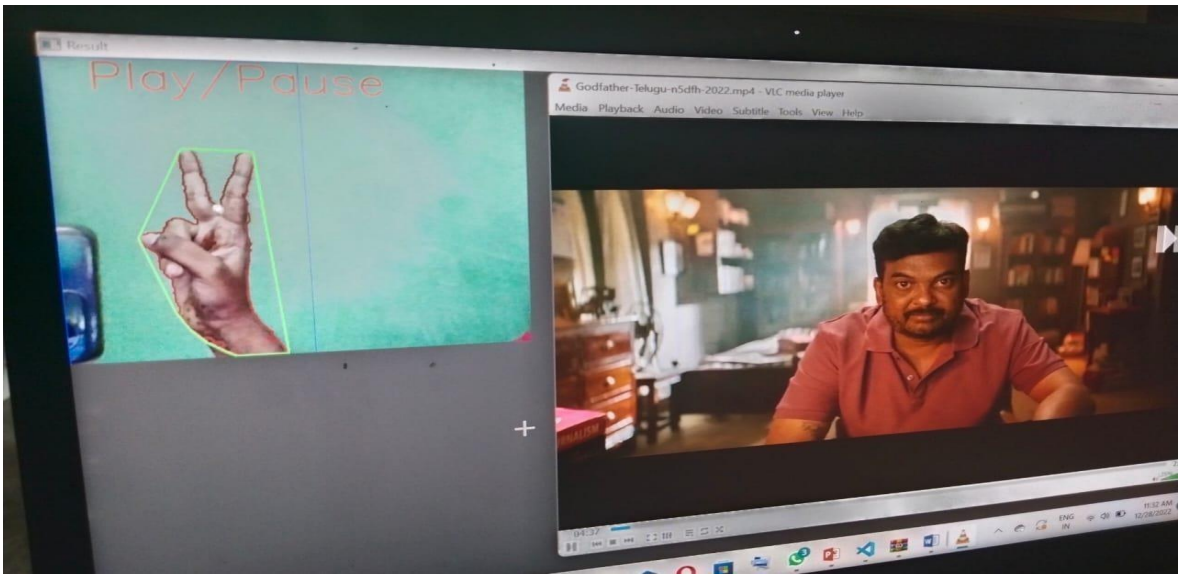
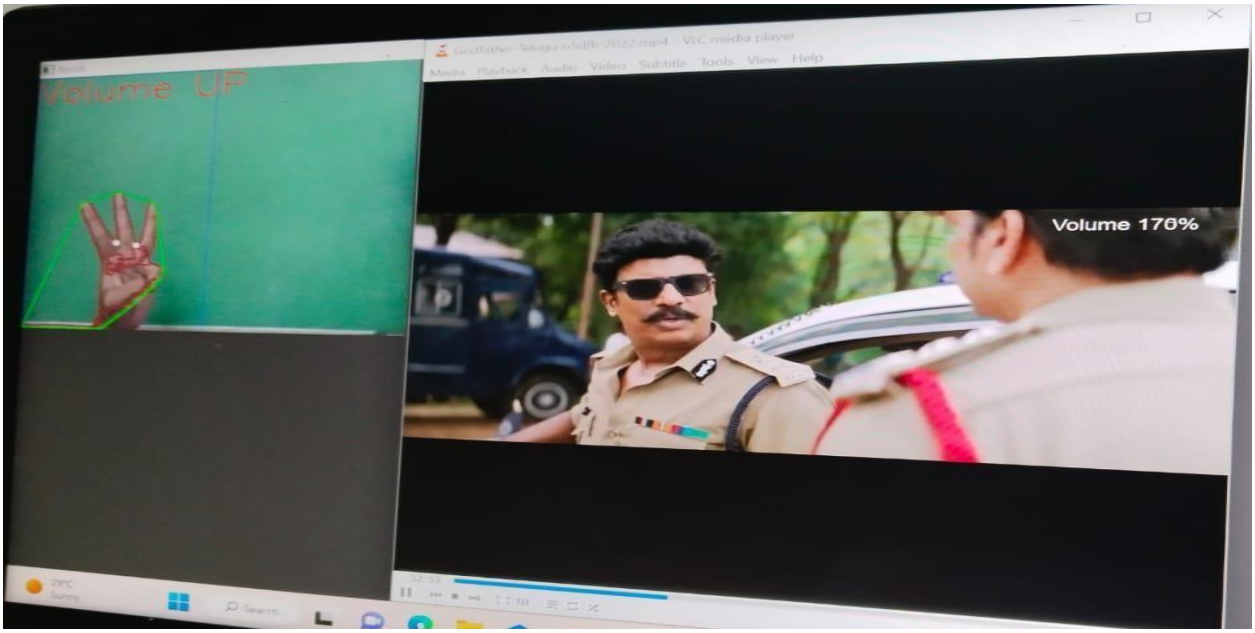


Play/Pause the video



Volume increased

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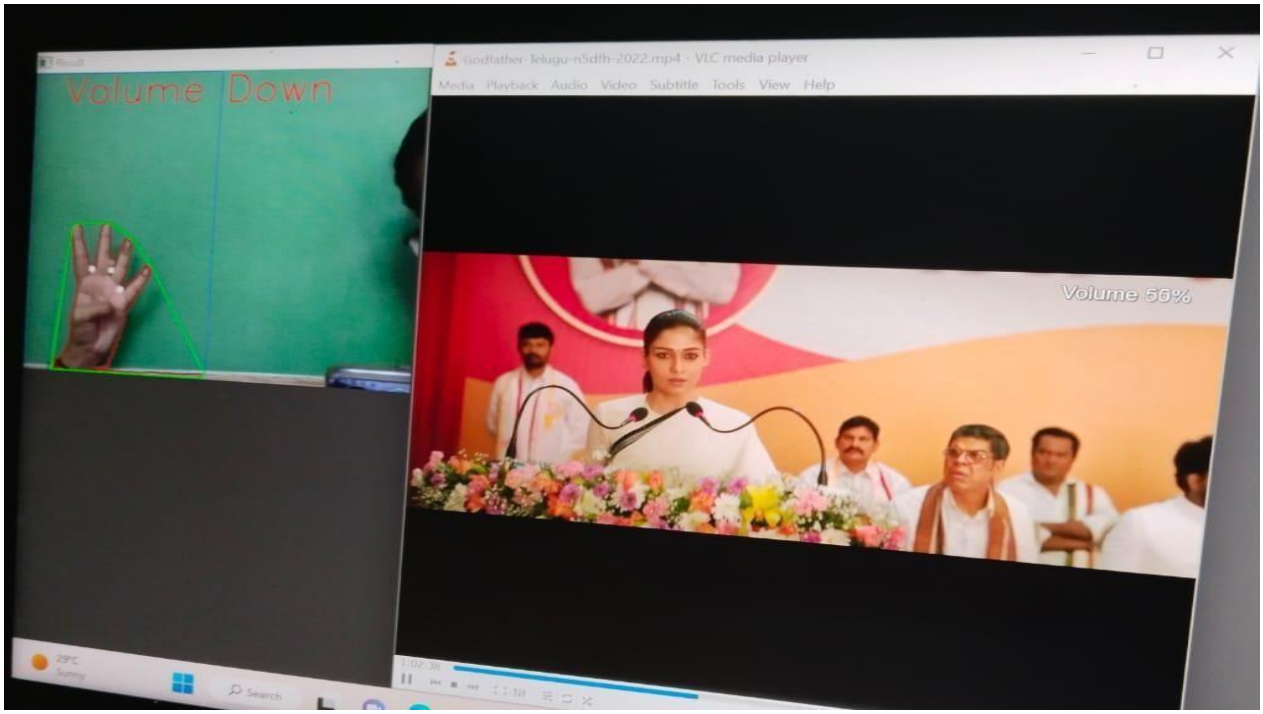
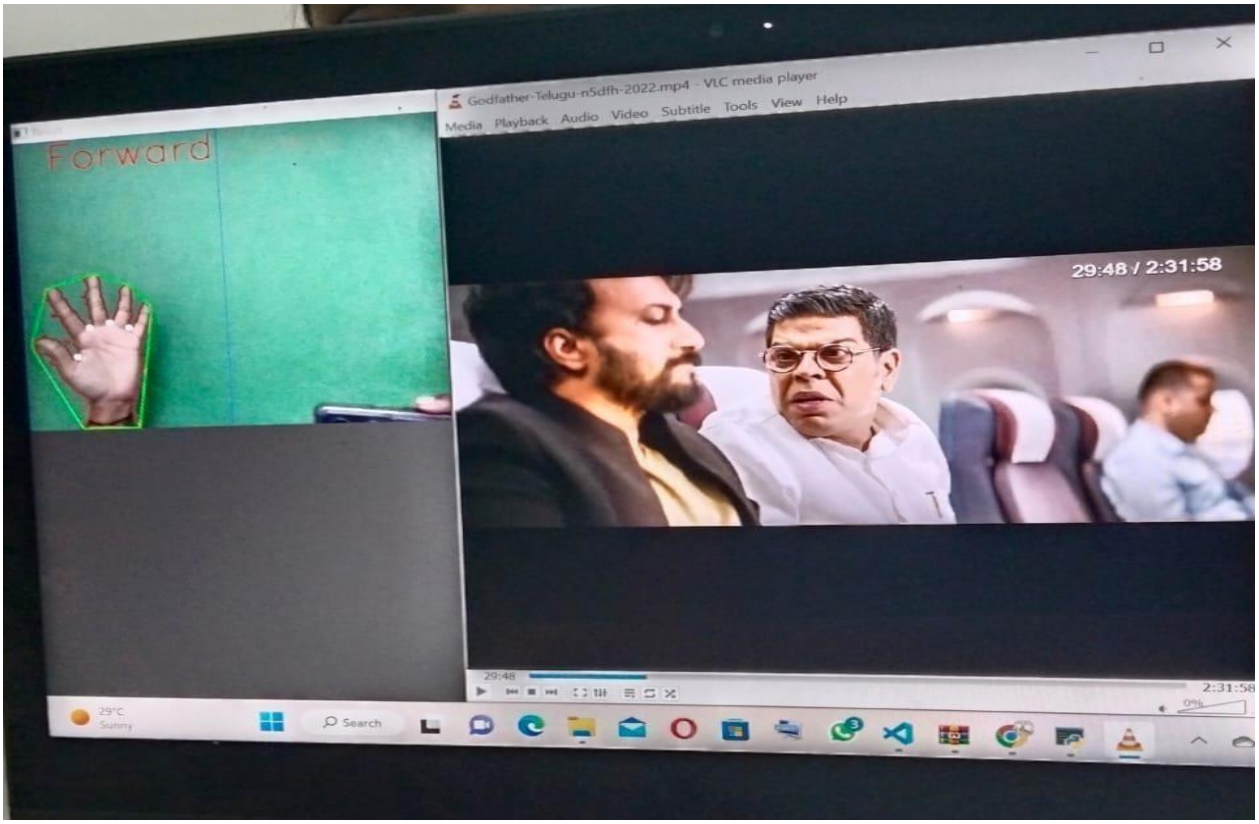


Volume decreased



Video Forwarded

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VIII CONCLUSION

This project provides a novel human computer interface by which a user can control a media player (VLC) using hand gestures. The user will provide a gesture as an input according to the relevant function. The application provides the flexibility of defining user interest gestures for specific commands, which makes the application more useful for physically challenged people.8.

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