

## **ABSTRACT**

Hand Gestures are a normal form of actions which we often use in our daily life for interaction. Therefore it can be used for natural and intuitive Human Computer Interaction. To achieve this goal, computers should be able to visually recognize hand gesture from video input. However, vision-based hand tracking and gesture recognition is an extremely challenging problem due to the complexity of hand gestures, which rich diversities due to high degrees of freedom involved by the human hand. The main objective of this project is to develop a simple and efficient hand gesture based interaction system for controlling applications like media players using computer vision and pattern recognition techniques.

In this project, we have designed and developed an effective gesture recognition system for controlling the media players. It consist of three main modules like preprocessing of the hand image, hand tracking and gesture recognition from the hand features. The project implements a hand tracking technique which is based on color detection by using a red color glove. The recognition of the gesture is done by the K Nearest Neighbour algorithm. This gesture recognition system is not only replace the use of mouse and keyboard to controll the media players but also provide different gesture commands which will be usefull for controlling the application.

**KEYWORDS:** Hand Gesture, Hand Tracking, K-NN, Gesture Recognition, Hu-  
moments, Webcam etc.