# LITERATURE SURVEY

## 1.A Gesture-based Tool for Sterile Browsing of Radiology Images

This paper presents "Gestix," a vision-based hand gesture capture and recognition system that interprets in real-time the user's gestures for navigation and manipulation of images in an electronic medical record (EMR) database. The paper also proves that the use of hand gesture based system reduces the time taken to perform the Ssystem for MRI manipulation in an EMR image database called "Gestix" was tested during a brain biopsy surgery. Gesture operations are initiated by a calibration mode in which a skin colour model of the user's hand or glove, under local lighting, is constructed. After a short calibration process, where a probability colour model of the doctor's hand is built, images of the surgeon's hand gesturing are acquired by video-camera and each image is back-projected using a colour model. To evoke a zoom mode, the open palm of the hand is rotated within the "neutral area" clockwise/counter clockwise (zoom-in/zoom-out). To avoid the tracking of unintentional gestures, the user may enter a "sleep mode" by dropping the hand. The hand gestures can be performed up to 5 meters from the camera and still be recognized accurately.

## 2.Hand gesture recognition using machine learning algorithms

This paper describes how hand gestures are trained to perform certain actions like switching pages, scrolling up or down in a page. The system can be defined using three main steps, they are: Learning, Detection, Recognition. A hand gesture recognition system was developed to capture the hand gestures being performed by the user and to control a computer system based on the incoming information. Detection module using java where in the hand is detected using background subtraction and conversion of video feed into HSB video feed thus detecting skin pixels. The second module is the prediction module. A convolutional neural network is used. The input feed image is gained from Java. The input image is fed into the neural network and is analysed with respect to the dataset images. One of the limitations of this system is that it requires socket programming in order to connect java and python modules. Dataset is used for training the 3D CNN. Hand detection uses EGO dataset, Motion or Gesture Recognition uses Jester dataset.