



The use of doctor-computer interaction devices in the operation room (OR) requires new modalities that support medical imaging manipulation while allowing the doctor's hands to remain sterile, supporting his focus of attention, and providing fast response times.

In two brain surgeries at the Neurosurgery OR Washington procedures were observed to gain insights about the use of current technologies and how they affect the quality of the surgeon's performance. It is found that: (a) surgeons kept their focus of attention between the patient and the surgical point of interest on the touch-screen navigation system; (b) a short distance between the surgeon and the patient was maintained during most of the surgery; (c) the surgeon had to move close to the main control wall to discuss and browse through the patient's MRI images.

In this project, the model is first trained on pictures of various hand motions, such as showing the numbers 1, 2, 3, and 4 with the fingers. The video frame is captured by this model using the built-in webcam. The gesture is recognised by comparing the image captured in the video frame with the pretrained model.

Feature Extraction

Classification

Output gesture is identified

Pre trained model

Hand Segmentation

Capture video frame using integrated webcam

