

Literature Survey

S.NO	TITLE	AUTHORS	ABSTRACT	DRAWBACKS
1	A Gesture-based Tool for Sterile Browsing of Radiology Images settings	JAUN P WACHS,HELMAN I ,Yael EDAN	The use of doctor-computer interaction devices in the operation room (OR) requires new modalities that support medical imaging manipulation while allowing doctors' hands to remain sterile, supporting their focus of attention, and providing fast response times. 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. Navigation and other gestures are translated to commands based on their temporal trajectories, through video capture. “Gestix” was tested during a brain biopsy procedure. In the in vivo experiment, this interface prevented the surgeon's focus shift and change of location while achieving a rapid intuitive reaction and easy interaction. Data from two usability tests provide insights and implications regarding human-computer interaction based on nonverbal conversational modalities	Finding and dealing with health information,Not being able to get questions answered or needs met, increased health cost

2	Hand Gestures Recognition Using Radar Sensors for Human-Computer-Interaction: A Review	SHAHZAD AHMED,MKARAM DAD KALLU,SARFARAZ AHMED, SUNG HO CHO	<p>Human–Computer Interfaces (HCI) deals with the study of interface between humans and computers. The use of radar and other RF sensors to develop HCI based on Hand Gesture Recognition (HGR) has gained increasing attention over the past decade. Today, devices have built-in radars for recognizing and categorizing hand movements. In this article, we present the first ever review related to HGR using radar sensors. We review the available techniques for multi-domain hand gestures data representation for different signal processing and deep-learning-based HGR algorithms. We classify the radars used for HGR as pulsed and continuous-wave radars, and both the hardware and the algorithmic details of each category is presented in detail. Quantitative and qualitative analysis of ongoing trends related to radar-based HCI, and available radar hardware and algorithms is also presented. At the end, developed devices and applications based on gesture-recognition through radar are discussed. Limitations, future aspects and research directions related to this field are also discussed.</p>	<p>Essentially our testing dataset is too controlled. An ideal dataset should consist of practical examples that we will meet</p> <p>out on the field, meaning that we want a dataset that consists of a variety of lighting, different hands and rescaled images.</p>
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Overview

In two brain surgeries at the Neurosurgery OR at the Washington Hospital Center, procedures were observed by the authors to gain insights about the use of current technologies and how they affect the quality of the surgeon's performance. We 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.

The hand gesture control system “*Gestix*” developed by the authors helped the doctor to remain in place during the entire operation, without any need to move to the main control wall since all the commands were performed using hand gestures.