

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

TITLE	AUTHOR	YEAR	DESCRIPTION	ADVANTAGES	DISADVANTAGES	METHODOLOGY
Hand Gestures Recognition Using Radar Sensors for Human-Computer Interaction	.Shahzad Ahmed .Karam Dad Kallu Sarfaraz Ahmed	2021	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.	<i>Quantitative Analysis</i> <i>Nature of Used Hand Gestures and Application</i> <i>Domain Analysis</i> <i>Real-Time HGR Examples</i>	Although radar sensors offer several advantages over the other HGR sensors (i.e., wearable sensors and cameras), the adoption of radar-based HGR in our daily lives is still lagging behind these competing technologies. Attention must be paid to miniature hardware development and real-time recognition algorithms' development.	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.
Gesture interaction in virtual reality	YangLI JinHUANG FengTIAN Hong-AnWANG	2019	This article focuses on the gesture interaction technology and discusses the definition and classification of gestures, input devices for gesture interaction, and gesture interaction recognition technology. The application of gesture interaction technology in virtual reality is studied, the existing problems in the current gesture interaction are summarized,	1) he advantage is that it is not affected by dust, moisture, or dirt, and it can adapt to harsh environments with a wide range of application. 2)long life, easy assembly, and multi-touch support. Most of the multi-touch screens in the market are based on capacitive touch screens	The disadvantage is that it is greatly affected by environmental factors, such as light, skin color, and occlusion. disadvantage is that the manufacturing process of such equipment is relatively complicated, the cost is high, the flexibility is low, and calibration is required frequently.	With the development of virtual reality (VR) and human-computer interaction technology, how to use natural and efficient interaction methods in the virtual environment has become a hot topic of research. Gesture is one of the most important communication methods of human beings, which can effectively express users' demands. In the past few decades, gesture-based interaction has made significant progress.

			and the future development is prospected.			
Hand-gesture-based sterile interface for the operating room using contextual cues for the navigation of radiological images	.Mithun George Jacob. .Juan Pablo Wachs .Rebecca A Packer	2012	This paper presents a method to improve the navigation and manipulation of radiological images through a sterile hand gesture recognition interface based on attentional contextual cues. Computer vision algorithms were developed to extract intention and attention cues from the surgeon's behavior and combine them with sensory data from a commodity depth camera.	The developed interface was tested in a usability experiment to assess the effectiveness of the new interface. An image navigation and manipulation task was performed, and the gesture recognition accuracy, false positives and task completion times were computed to evaluate system performance.	the tracking algorithm occasionally failed in the presence of several people in the camera field of view. More research is required to improve the tracking algorithm.	.Computer vision algorithms were developed to extract intention and attention cues from the surgeon's behavior and combine them with sensory data from a commodity depth camera. . Experimental results show that gesture interaction and surgeon behavior analysis can be used to accurately navigate, manipulate and access MRI images, and therefore this modality could replace the use of keyboard and mice-based interfaces.
An approach for interpretation of MEMS data for gesture based man machine interaction in advanced set-top box	T. Chattopadhyay Soumali Roychowdhury Mita Nasipuri	2009	In this paper we have proposed a method where users can use the (MEMS) as a mouse pointer or a method to give some gesture based user input (like channel/volume up/down) or as an alternative to keyboard (by writing the English alphabet in capital letter) for web browsing. We	.We get an average recognition accuracy of 99.4% . Currently different type of interface between man and machine is a reach research area. One such method for human machine interaction is gesture based interface.	1. Some of the data packets may get lost or corrupted while they are transmitted in the air interface. The addresses of these lost data packets must be identified. 2.In some of the data packets any one of the information like x,y,z information may get interchanged.	This stroke identification is done based on the observation that at the time of pen movement, which occurs at the end of every stroke, there is a sharp discontinuity in the acceleration and velocity of the sensor.

			get a recall rate of 0.994 and precision rate as 0.998.			
A Gesture-based Tool for Sterile Browsing of Radiology Images	.Junan p .Wachs Helman .Stern Yeal Edan .Michel Gillam	2008	This paper presents " <i>Gestix</i> ," 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	distance control—the hand gestures can be performed up to 5 meters from the camera and still be recognized accurately.	the surgeon had to move close to the main control wall to discuss and browse through the patient's MRI images. When such a movement is detected, the displayed image is moved off the screen and replaced by a neighbor image.	The sterile gesture interface consists of a Canon VC-C4 camera, whose pan/tilt/zoom can be initially set using an infrared (IR) remote. This camera is placed just over a large flat screen monitor. Additionally, an Intel Pentium IV, (600MHz, OS: Windows XP) with a Matrox Standard II video-capturing device is used.