

A GESTURE-BASED TOOL FOR STERILE BROWSING OF RADIOLOGY IMAGES

INTRODUCTION

Examining patient-specific image data, gathered from computed tomography scans and magnetic resonance imaging scans, during a surgical procedure requires doctor-computer interaction that supports medical imaging manipulation while allowing doctors' hands to remain sterile.

However, traditional methods of human-computer interaction fail to provide an efficient method of medical image manipulation supporting users' focus of attention. With the advent of Artificial Intelligence, a new mode of interaction, Gesture-based interaction is introduced. Gesture-Based interaction provides an efficient, intuitive, accurate and safe means of interaction without affecting the quality of work.

A vision-based hand gesture recognition system has been proposed for surgeons to interact with medical image viewers during an operation. This system interprets the real-time user's hand gestures and translates it to appropriate commands which are then used for manipulation of radiology images.

LITERATURE SURVEY

S.No	Authors	Title	Objective
01.	Elishiah Miller et. al.(2020)	RadSense: Enabling one hand and no hand interaction for sterile manipulation of medical images using Doppler radar	An end-to-end and unobtrusive system that uses Doppler radar-sensing to recognize hand and finger gestures when either one or both hands are busy
02.	Valentine Bernasconi et. al. (2022)	GAB- Gestures for Artworks Browsing	A web application which uses hand motions to directly query pictorial hand gestures from the past. GAB enables users to record a sequence with the hand movement of their choice and outputs an animation reproducing that same sequence with painted hands

03.	Soraia Figueiredo Paulo et. al.(2019)	Touchless interaction with medical images based on 3D hand cursors supported by single-foot input: A case study in dentistry	A prototype to explore a design space that extends beyond 2D manipulation by enabling 3D interaction and design guidelines for future work on foot-supported touchless interaction in dental settings.
04.	Atif Ahmed et. al.(2017)	Neuro-fuzzy model with subtractive clustering optimization for arm gesture recognition by angular representation of kinect data	A simple and robust framework based on Neuro-Fuzzy System (NFS) for identification of human arm gestures using skeletal data from Kinect sensor
05.	Ashish S. Nikam et. al.(2016)	Sign language recognition using image-based hand gesture recognition techniques	Hand gesture is one of the methods used in sign language for non-verbal communication. This paper presents a system prototype that is able to automatically recognize sign language based on real time hand gesture recognition to help deaf and dumb people to communicate
06.	Xenophon Aggelides et. al. (2020)	A Gesture Recognition approach to classifying Allergic Rhinitis gestures using Wrist-worn Devices: a multidisciplinary case study	A multidisciplinary Gesture Recognition case study using a Machine Learning approach for the detection and classification of allergic rhinitis-related gestures
07.	B.Dhanalaksmi et. al.(2020)	Improving Cognitive Learning of Children with Dyspraxia using Selection based Mid-Air Gestures in Athynos Game	A new game, Athynos using augmented reality for improving and upgrading the skills that develop cognitive learning and hand-eye synchronization for the children affected with dyspraxia.

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