

A Gesture-based Tool for Sterile Browsing of Radiology Images

Problem Description

Nowadays, The Healthcare industry is being significantly impacted by computer information technology. Providing doctors with effective, intuitive, precise, and safe ways of contact without compromising the quality of their job is a significant problem involved in this process. The primary means of interaction between humans and computers now are keyboards and pointing devices like mouse. But in Intensive care units (ICUs), using computer mouse and keyboards is a typical way for surgeons to transfer diseases.

In this article, we propose using hand gestures as an alternative to current interface techniques, with the key benefit of sterility. Gestures are a natural and effective approach to control images. A touchless interface would enable the surgeon to directly engage with visuals without risking sterility. Even though the voice commands also ensure sterility, the Operating Room's noise level makes it questionable.

A hand gesture vocabulary of commands was selected as being natural in the sense that each gesture is cognitively associated with the notion or command that is meant to represent it. For example, moving the hand left represents a “turn left” command.

A sterile human-machine interface is of supreme importance because it is the means by which the surgeon controls medical information avoiding contamination of the patient, the Operating Room and the surgeon