

IBM - NALAYA THIRAN
A GESTURE BASED TOOL FOR STERILE BROWSING OF
RADIOLOGY IMAGES

LITERATURE SURVEY

Faculty Mentor

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1.

Bacterial contamination of computer keyboards in a teaching hospital.

Author : Schultz M, Gill J, Zubairi S, Huber R, Gordin F

<https://pubmed.ncbi.nlm.nih.gov/12725363/>

We tested 100 keyboards in 29 clinical areas for bacterial contamination. Ninety five were positive for microorganisms. Streptococcus, Clostridium perfringens, Enterococcus (including one vancomycin-resistant Enterococcus), Staphylococcus aureus, fungi, and gram-negative organisms were isolated. Computer equipment must be kept clean so it does not become another vehicle for transmission of pathogens to patients.

2.

Face MOUSe: A Novel Human-Machine Interface for Controlling the Position of a Laparoscope

Author : Nishikawa A, Hosoi T, Koara K, Negoro D, Hikita A, Asano S, Kakutani H, Miyazaki F

<https://ieeexplore.ieee.org/document/1236756>

Robotic laparoscope positioners are now expected as assisting devices for solo surgery among endoscopic surgeons. In such robotic systems, the human-machine (surgeon-robot) interface is of paramount importance because it is the means by which the surgeon communicates with and controls the robotic camera assistant. We have designed a novel human-machine interface, called "FAce MOUSe", for controlling the position of a laparoscope.

3.

The NeuroStation- a highly accurate, minimally invasive solution to frameless stereotactic neurosurgery

Author : Smith KR, Frank KJ, Bucholz RD

<https://pubmed.ncbi.nlm.nih.gov/7923044/>

The NeuroStation is an image-guided neurosurgery workstation designed to deliver frameless stereotaxy within an ergonomic, integrated surgical environment. Generally, stereotaxy can provide the neurosurgeon with important intra-operative localization information using diagnostic images such as computerized tomography (CT) or magnetic resonance imaging (MRI). To date, however, stereotaxy has not been widely accepted by neurosurgeons due to the procedural difficulties of incorporating conventional stereotaxy. The NeuroStation addresses the problems of conventional stereotaxy through the use of frameless stereotactic methods wherein state-of-the-art instrumentation and computer innovations allow: a) standard surgical instruments to be used as the localization device; b) multipoint registration methods in place of frame-based registration; and c) real-time interactive surgical localization. The NeuroStation can thus be transparently integrated into the neurosurgical procedure providing the neurosurgeon with image-guidance for surgical planning, biopsies, craniotomies, endoscopy, intra-operative ultrasound, radiation therapy, etc.