Augmented Reality in Minimally Invasive Surgery

The development of medical robots and manipulators is one of the research areas of the chair. A manipulator system for automated real-time imaging with ergonomic visualization of relevant information in an augmented reality environment is currently being developed.

Within the scope of this thesis, different possibilities for the appropriate presentation of relevant information from ultrasound image data in a laparoscopic image in an augmented reality application in minimally invasive surgery in C/C++ and Matlab shall be implemented and documented by integrating existing software components. Finally, tests are to be carried out to prove the functionality and suitability of the software.

Prerequisites for the work are:
- Good knowledge and passion for image processing
- Independent operation
- Very good knowledge of C/C++
- Good knowledge of MATLAB and Java

Start of work: From now on

Proposals for accompanying courses: Automatisierungstechnik in der Medizin (Automation Technology in Medicine), Messtechnik und medizinische Assistenzsysteme (Measurement Technology and Medical Assistance Systems)

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