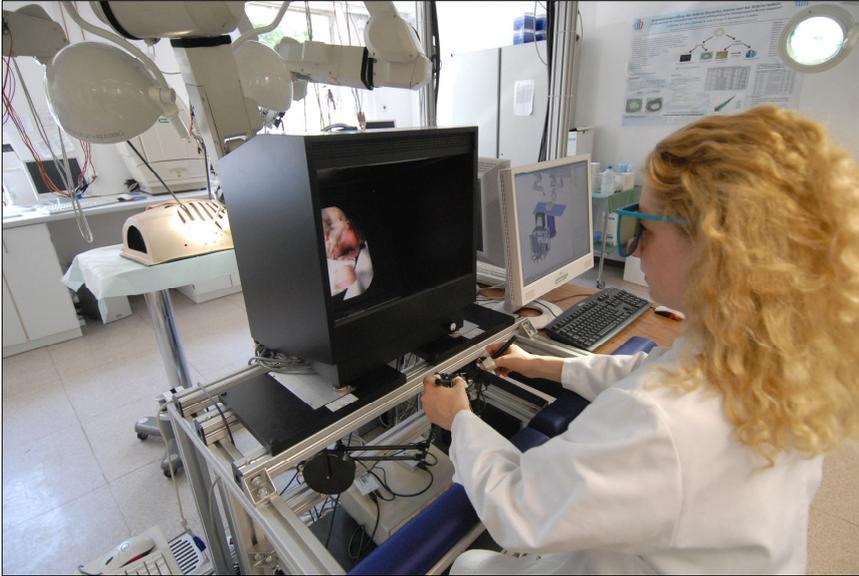


# Bachelor / Master / Diploma Thesis: Advanced User Interface Design For A Medical Workstation

**Keywords:** UI Design, Data Visualization, Human-Robot-Interaction, Medical Robotics



**Description:** We have developed and evaluated a robotic system for minimally invasive surgery. The system can be controlled by haptic input devices that feed back forces to the user.

In order to allow **multiple users** to operate the system simultaneously, we are interested in a shared control N:M scenario, involving new input devices like the depicted “spacemouse”.

A **3D screen** is used to visualize additional medical data and to improve navigation through system functions. „**Virtual walls**“ shall avoid the intrusion into certain regions by the user. Also **speech recognition** could be an alternative input modality to improve the user acceptance.

The project will be implemented in close cooperation with the German Heart Center, and therefore most parts of the work will be carried out at the Inner City Campus (Arcisstr. 21).

**Prerequisites:** Prospective candidates should have knowledge in C++.

**Application:** please contact Christoph Staub (staub@in.tum.de) to discuss your designated topic.