



Bachelor Thesis

Theoretical / Practical

Computer aided Teleoperation of Humans to Technical Systems

Keywords: Human-Machine-Interaction, HSI, Telepresence, Teleoperation

General conditions:

Duration: 3-4 Months

Prerequisites:

- Able to work independently and in time
- Show personal initiative and skills for self-organization
- Show capability of intensive / extensive reading, and summarizing

Content:

For some exploring or manipulation tasks in a remote environment which is impenetrable by distance, scaling, or living conditions, a so-called telepresence system can help human operator to a robotic teleoperator over a communication channel through a human system interface (HSI), so that human cognitive capabilities can be extended also to remote environment. But, how can we ensure the reliability and consistence of the communication/ teleoperation?

The goal of the thesis is to make an intensive /extensive literature research on the concepts of teleoperation and telecommunication via HMI in synchronous but distributed situations. The main tasks include

- Literature research regarding
 - Concepts of teleoperation via HIS,
 - Approaches of computer aided teleoperation, and
 - Implementation of teleoperation in faulty cases
- Comparing the reviewed concepts / approaches
- Applying at least one teleoperation approach on a given daily working example



The detailed research results have to be documented (in LaTeX) and the whole work has to be demonstrated within an oral presentation.

Betreuer: Xingguang Fu, M.Sc.
Büro: MB 351
Telfon: 0203 / 379 1584
E-Mail: xingguang.fu@uni-due.de