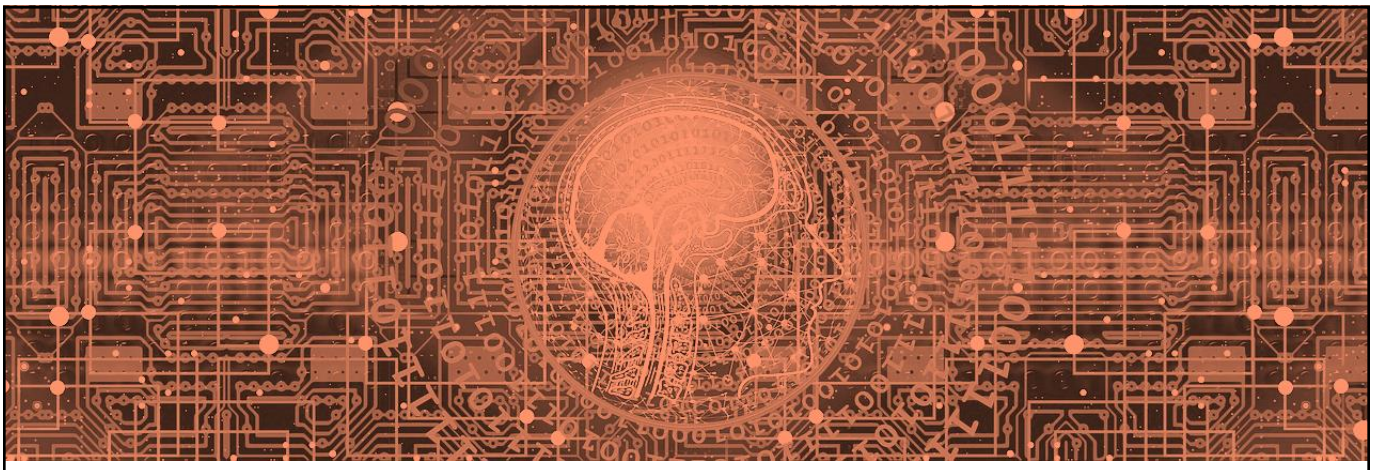

Human Robot Interaction I

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Group Discussion

What is Human Robot Interaction?

Three Aspects of This Course

- Guidelines / best practices for user-friendly design of software-intensive systems (Human Computer Interaction)
- Making / evaluating design decisions w.r.t. interacting with a robot
- Analyzing / verifying the safety of robotic systems

User Interface Design

Exercise

Define a good User Interface Design for a Liquor Web Shop

Exercise

Define a good User Interface Design for a Transport Robot in a Factory

Exercise

Define a good User Interface Design for a Receptionist Robot

Group Discussion

Summing it up: What is Important?

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Safety Engineering

Group Discussion

How can we Ensure the Safety of a System?

Commonly Used Safety Analyses

Fault Tree Analysis (FTA)

Failure Mode and Effects Analysis (FMEA)

Hazard Analysis and Risk Assessment (HARA)

...

Evaluating Design Decisions

Group Discussion

Why do we need Evidence?

Group Discussion

What Types of Empirical Investigations can be Helpful?

In this Course

Evidence-based Software Engineering

- Systematic Mapping Studies
- Systematic Literature Reviews
- Literature Search/Survey (incl. Grey Literature)

Survey Research

- Surveys (Questionnaire-based)
- Interview Studies
- Focus Groups

Case Study Research

- Case Studies
- Prototype Development
- Observational Studies

Experimental Research

- Controlled Experiments
- Quasi Experiments

Exercise

Develop a Research Question