

APPLICATION master thesis

Provisional working title:

Modeling Human Preferences in Human-Robot Collaboration: An Interdisciplinary Approach from Engineering, Social Sciences, and HCI

Initial situation / problem:

Task allocation in human-robot collaboration (HRC) determines which agent, human or robot, performs a task based on availability and capability. Optimizing this process enhances productivity; however, human well-being and individual preferences must also be taken into account. Measuring, modeling, and **integrating human preferences** into the process can lead to solutions that balance efficiency with human satisfaction and comfort.



The aim of the work:

The objective of this master's thesis is to **explore and understand human preferences in collaborative work settings**. It aims to develop an interface that can effectively receive and communicate these preferences with users. Additionally, the thesis focuses **on modeling human preferences** to support adaptive and user-centered system behavior.

Main tasks:

- Conduct a literature review on human preferences in Human robot collaboration.
- Develop an intuitive interface for receiving and communicating human preferences
- Model human preferences to enable adaptive task allocation and improve user experience

Requirements

- **Basic programming skills (e.g., Python)**
- **Interest in human-computer/robot interaction**
- **Familiarity with user-centered design principles**
- **Optional: Experience with interface development or data analysis**

You can get more information in a personal conversation with the content supervisor.

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