

Bachelor Projects in **Social Robotics**

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Themes At the social robotics lab, we are investigating how to design and implement AI-driven social robots to support people in various domains, including healthcare and education. There are always different topics available relating to specific new or ongoing projects. Current topics:

- Social robots for speech and language therapy.
- Developing a new social robot for higher education.
- Developing a generic framework for programming different social robots.
- Investigate multimodal turn-taking modules for social robots.
- Investigate potential effects of linguistic alignment in human-robot interaction.
- Investigate personalised fine-tuned ASR will improve HRI.
- Language models for people with a language impairment.

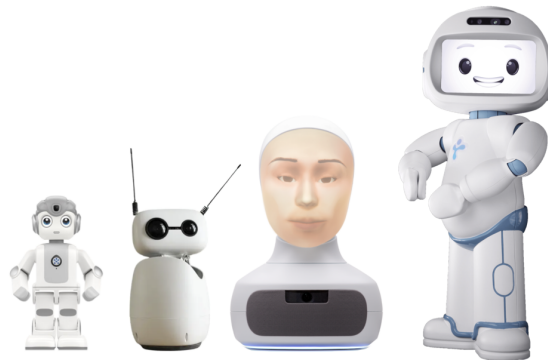


Figure 1: The robots hosted by the lab. From left to right: Alpha Mini, Reachy Mini, Furhat and QT.

What to expect. A typical bachelor project is organised as follows: You start with a given (sub)problem that a social robot could provide a solution for. For example, how can a robot support children with a developmental language disorder? Or how can we improve the quality of a conversation between a robot and a person? After having done some background/theoretical research, you will

develop a technological solution for the specific problem at hand. Often, starting by proposing a potential solution and then implement this on the robot. This typically consists of building a multimodal dialogue manager/controller that connects the robot's sensors and actuators with AI (a large language model, visual language model, and/or some logic). After building this, the system is usually evaluated with a small experiment -sometimes in the lab, sometimes at other locations such as schools.

While useful, it is not required to have taken the *Social Robotics* or *Social Robotics Practical* courses. Interested? Send me an email: p.a.vogt@rug.nl or check out <https://www.ai.rug.nl/paulvogt/>.