Research questions

- **RQ1**: How is software developed for mobile service robots?
    - **RQ1.1** What software engineering principles are used, incl. processes or QA techniques?
    - **RQ1.2** What technological spaces are used?
    - **RQ1.3** What is the role of open source resources and reusable libraries?
- **RQ2:** How is SE in mobile service robotics different from SE in other domains?
- **RQ3**: What challenges do practitioners face when engineering mobile service robots?

Interview questions

Background

Professional background: Study subject, work experience, roles at company including current role

Experience with robotics software: past projects and main characteristics (what about, how large, what technology, what role in the project, what robot), and current project

Experiences and challenges

[in the following, either focus on one (e.g., largest one or where the interviewee also has most substantial knowledge in) or let report experiences in multiple projects; decide ad hoc]

Related to RQ1

What is the development process? What activities? (e.g., requirements engineering, design, implementation, QA, evolution/maintenance) How performed? (e.g., waterfall, agile, V-Model, XP, Scrum) -> RQ1.1

Which kinds of software engineering paradigms are used? (e.g., object-oriented, modularity, components, frameworks, model-driven, product lines) -> RQ1.1

What technological spaces are used? (e.g., programming language, frameworks, middleware, IDEs, DSLs, etc.) -> RQ1.2

If ROS is used, what makes it attractive? Any disadvantage?

Do you re-use libraries or integrate open-source resources in your projects? -> RQ1.3

Related to RQ2

How do you think robotics software engineering differs from software engineering in other domains?

How does hardware influence the development process? (can also relate to how software development for service robots differs from software development for industrial automata-like robots)

How do you specify and implement the mission of the robots?

How do you specify and implement the behavior of the robots?

How do you deal with dynamic adaptation?

Do you adopt any AI based solution?

Related to RQ3

What software-engineering challenges exist?

Which development activities are especially time-consuming (and why)?

Which development activities are especially error-prone (and why)?

Which development activities take an especially large effort (and why)?