Student Conference: Research Project (6 CP)

Learning outcomes:
The students work alone (groups can be possible if the project is complex enough) on a scientific project (e.g., literature study, designing an experiment, implementing a technique) of their choice under supervision. Besides obtaining knowledge on the project topic, during the lectures students will learn about scientific work, research methods, scientific writing, presenting, and related topics. Project topics can stem from any innovative field in software engineering (or computer science as a whole). We will provide some example topics, but the students are encouraged to define their own ones together with their supervisor. During the lectures, students will do a short kick-of presentation to introduce their topics to the group. Besides the lectures, the course requires the students to work independently on their project following the research method they selected, with supervision as needed. Before the final submission, a draft is submitted for which the students receive feedback in the form of two reviews by their peers. In the end, they have to submit a scientific paper (refined based on the reviews) and present the results in front of the course; thus simulating a real scientific conference.
After this module students

- understand and can employ basic research methods
- are able to critically reflect on and review scientific publications
- know how to write scientific papers and present their results
- can plan and execute a research project

Contents:
Research Methods:

- Research strategy and process
- Research design (experimental, case study, literature survey)
- Qualitative, quantitative, and mixed methods
- Scientific guidelines
- Scientific publication systems (conferences, journals, workshops)

Academic Writing:

- Scientific writing
- Style, citations, paraphrasing, punctuation, literature management
- Scientific presentation
- Evaluation of scientific work (peer reviews)
- Discussion/defense of own results

Teaching methods:

- Lectures (scientific writing, research methods)
- Seminar/individual project (working on and presenting a scientific contribution as a paper and presentation)
- Online/hybrid due to COIVD-19

Form of examination
- Paper (8-10 pages in defined template)
- Oral exam (final presentation of the paper in front of the course in the style of a conference)
- 2 reviews for draft papers of other students (~0.5 pages each)

Requirements for the award of credit points
- Submitted and passed/graded paper
- Submission of the 2 reviews
- 2 presentaitons (kick-off, oral exam)

Teacher: Dr. Jacob Krüger