

Project Phase R

Software Testing - Research Phase



Software Testing - Summer 2022 - April 8, 2022 - Sibylle Schupp / Sascha Lehmann

In addition to the five project-based phases, we offer a research phase. In this phase you are exposed to state-of-the-art research and experience in a lightweight fashion the complete cross section of writing, presenting, and discussing research. The phase also prepares you for your own thesis work. The research phase consists of an individual reading and writing task as well as a short in-class presentation in groups and a PBL (problem-based learning) session, where selected research papers are discussed in groups. The tasks are explained in the following:

Task 1 - Paper introduction [7 P]

As starting point of the research phase, you will provide a paper introduction for a scientific paper of your choice (selected from a given list of conferences).

- a) Read through the lists of accepted papers for the following conferences, and pick a paper which catches your interest:
 - IEEE International Conference on Software Testing, Verification and Validation 2021 (**ICST 2021**)
Accepted Papers: <https://icst2021.icmc.usp.br/track/icst-2021-papers#Accepted-Papers>
Proceedings: <https://ieeexplore.ieee.org/xpl/conhome/9438541/proceeding>
 - ACM SIGSOFT International Symposium on Software Testing and Analysis 2021 (**ISSTA 2021**)
Accepted Papers: <https://conf.researchr.org/track/issta-2021/issta-2021-technical-papers#event-overview>
Proceedings: <https://dl.acm.org/doi/proceedings/10.1145/3460319>
- b) Check the **Wiki** entry on paper selection in the Software Testing course on StudIP (**Wiki** → **QuickLinks** → **Research Task - Paper Selection**). If your paper was not selected by another student yet, add your choice to the table (click **Edit**, and **Save** afterwards). Otherwise, pick another paper.
- c) Work through the selected paper, and write an **Introduction** of **450 - 550 words** on the covered topic(s). During the exercise session on **Friday, May 06, 2022**, we will give an introduction to research and present guidelines on how to properly structure introductions that meet the standards of writing in computer science. The session is **mandatory** for participants in the research phase, and *optional* for others.
- d) Submit the write-up of your introduction on StudIP before the deadline on **Friday, May 20, 2022** at **23:59** (*UTC: 2022-05-20T23:59:00+02:00*) to the folder `project_uploads/phase_research`.

*Submission: *.pdf file with paper introduction*

Within your group, decide on one of your papers that you find most interesting, which is the base for the presentation and PBL task.

Task 2 - In-class presentation **[7 P]**

The topics of the selected paper should now be presented to the audience.

- a) Prepare a presentation for your selected paper of 6 – 7 minutes.
- b) Present your paper during the lecture slot on **Thursday, June 16, 2022**. Attendance is mandatory for those who want to collect points from the research task.

Submission: None (only in-class presentation)

Task 3 - PBL (problem-based learning) session **[6 P]**

Finally, we want you to communicate the most important topic of your selected paper to other groups more in-depth via a self-designed task.

- a) As a group, prepare a task based on your paper topic which takes approx. 15 minutes to solve.
- b) Send a mail to [Sascha Lehmann](#) by **Friday, June 03, 2022** in which your group describes what kind of task you want to provide in the PBL session, and how the task should be presented (the concrete task design does not need to be finished by that time).
- c) Bring the task to the PBL session on **Friday, June 17, 2022**.
- d) During the session, groups are paired, work on their partner's task for 15 minutes, and write down their answer. Then, the two groups meet for another 15 minutes to show, discuss, and document their answers.

NOTE: While preparing your questions, make sure to include snippets from the paper.

Submission: None (only in-class PBL session)

NOTE: The paper introduction should be uploaded as a *.pdf file to the folder `project_uploads/phase_research` on StudIP, using the name convention `Introduction_[StudentName]`, followed by an optional `_V[VersionNumber]` in case that you submit multiple versions of your solutions.

Example: Introduction_SaschaLehmann_V1