

Reproducibility of Research Artifacts

This seminar will be held in English. However, if all participants are proficient in German, we can switch the language.

Contents

In this seminar, students will learn basic skills on how to conduct reproducible scientific research, which will be useful in their studies and further academic career. They will learn how to perform a reproducibility study, document their work, write a report, and present their findings.

In particular, this seminar will follow the ACM classification on availability and reproducibility of artifacts published at major software engineering or programming language conferences such as ICSE, ESEC/FSE, ASE, MSR, ISSTA, PLDI, TACAS, POPL, OOPSLA, and ICFP. Artifact evaluation in the software engineering community was introduced in 2011 at ESEC/FSE and since then has been added to many conferences in order to increase awareness for the importance of artifacts created by researchers. However, our own study has shown that the criteria and processes are still heterogeneous and further standardization is needed ([check the study on this video](#)).

Students will perform a reproducibility study on a given set of already published artifacts. Their main task is to verify if the artifacts are still available, read the publications, follow the documentation of the artifacts to reproduce the results, and report the findings.

The seminar consists of 3 phases.

1. Reading group - four sessions (one per week) in which students will read and discuss relevant publications on artifacts evaluation to gain knowledge on the topic and relevant skills to perform the reproduction of the original research.
2. Reproduction experiment phase - independent work in which each student is given a set of publications with artifacts. Students will document their independent work in a lab report.
3. Report and presentation - students will write a final report based on their experimental work documented in the lab report from phase 2. Additionally, they will prepare a 10 minutes presentation.

Seminar sessions

The seminar will be comprised of four sessions at the beginning of the semester. In the remainder of the semester, students will work on their research topic independently, and refer to their mentors when necessary. There is a final session for presentations at the end.

Attendance is **mandatory for all students** registered to the seminar.

During phase two there will be one optional Q&A session for students. This also might be individual and asynchronous as needed.

Context

This seminar is part of an ongoing, longitudinal, international collaboration of seminars held since 2019 at the University of Paderborn, TU Vienna, LMU Munich, HU Berlin, and University of Ulm. If you are a researcher from another institution and want to join this effort, please contact me.

Contact

University of Stuttgart
Institute of Software Engineering
Prof. Dr. Ben Hermann
ben.hermann@iste.uni-stuttgart.de