

Software Engineering Seminar

Human Studies in Debugging

Description

With more and more elaborate debugging techniques getting developed by researchers, one can pose the question whether these techniques are (or could be) actually successfully used by *human developers*. Many research groups often merely propose a technique without actually doing any *user studies* (since this is expensive), so answering this question is usually non-trivial. Moreover, the whole human debugging process is very complex and is not even very well researched. For example [1] tries to solve some of the existing issues.

The student should search for and examine human studies related to the debugging process and discuss the findings.

References

- [1] Marcel Böhme, Ezekiel O. Soremekun, Sudipta Chattopadhyay, Emamurho Ugherughe, and Andreas Zeller. Where is the bug and how is it fixed? an experiment with practitioners. In *Proceedings of the 2017 11th Joint Meeting on Foundations of Software Engineering, ESEC/FSE 2017, Paderborn, Germany, September 4-8, 2017*, pages 117–128, 2017.
- [2] Pavneet Singh Kochhar, Xin Xia, David Lo, and Shanping Li. Practitioners’ expectations on automated fault localization. In *Proceedings of the 25th International Symposium on Software Testing and Analysis, ISSTA 2016*, pages 165–176, New York, NY, USA, 2016. ACM.
- [3] X. Xia, L. Bao, D. Lo, and S. Li. “Automated Debugging Considered Harmful” Considered Harmful: A User Study Revisiting the Usefulness of Spectra-Based Fault Localization Techniques with Professionals Using Real Bugs from Large Systems. In *2016 IEEE International Conference on Software Maintenance and Evolution (ICSME)*, pages 267–278, Oct 2016.

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