Philipp Leitner

Curriculum Vitæ (September 25, 2025)

SUMMARY

I am an associate professor (docent) of software engineering at Chalmers University of Technology. I teach and conduct research on software development tools for Internet-based systems. Recently, much of my research is on software performance engineering, with a special focus on tools that enable rapid releases of efficient cloud software. I currently supervise a team of three PhD students working in the above topics, and have graduated six highly successful students. My research is funded through WASP, VR, Vinnova, and the Chalmers Area of Advance on ICT. I hold a PhD degree in business informatics from Vienna University of Technology (2011), and have (co-)authored close to 150 publications to date. Recent publication highlights include papers at ICSE, FSE, TSE, EMSE, and SIGMETRICS.

In addition to my research and teaching, I organized events (e.g., a Dagstuhl seminar on software performance engineering, or the Vienna Software Seminar series) and special issues related to my area of research. I serve on the programme committee of many of the most visible conferences in the field (e.g., ICSE, FSE, ASE, ICPE), and have also acted in organisatorial roles for various conferences (e.g., PC chair at ICPE in 2022).

Web: https://icet-lab.eu, philipp.leitner@chalmers.se
GS: https://scholar.google.ch/citations?user=wZ9f8CAAAAAJ (h-index: 48, citations: 7700+)
WoS: 124 publications total, 24 last 10 years, h-index 28, 2297 citations

RECENT APPOINTMENTS

Associate Professor Since Oct. 19
Chalmers | University of Gothenburg
ICT Area of Advance Assistant Professor (tenure-track) Aug. 17 - Oct. 19
Chalmers University of Technology
Senior Research Associate Jan. 14 - July 17
University of Zurich
Postdoctoral Researcher Nov. 2011 - Dec. 2013
Vienna University of Technology

SELECTED RELEVANT PUBLICATIONS [full list on Google Scholar]

1. R. Khojah, F. Gomes, M. Mohamad, and **P. Leitner**: The Impact of Prompt Programming on Function-Level Code Generation, IEEE Transactions on Software Engineering (TSE), 2025. To appear. *Relevant to Track 1: we experiment with different prompt programming styles and their effect on the quality of generated code.*

2. R. Khojah, M. Mohamad, **P. Leitner**, and F. Gomes: Beyond Code Generation: An Observational Study of ChatGPT Usage in Software Engineering Practice. Proceedings of the ACM International Conference on the Foundations of Software Engineering (FSE). 2024.

Foundational for Track 5: we study how developers use today's LLMs in practice. This paper has received over 60 citations in about a year.

3. H. Zhang, M. Alhanahnah, F. Ahmed, D. Fatih, **P. Leitner**, and A. Ali-Eldin: Machine Learning Systems are Bloated and Vulnerable. SIGMETRICS International Conference on Measurement and Modeling of Computer Systems, 2024. *Relevant for Track 5: we showcase security problems and inefficiency in today's machine learning deployments.*

4. M Jangali, Y. Tang, N. Alexandersson, **P. Leitner**, J. Yang, and W. Shang: Automated Generation and Evaluation of JMH Microbenchmark Suites from Unit Tests, IEEE Transactions on Software Engineering (TSE), 2022. *Foundational for Track 4: we demonstrate that it is possible to generate meaningful performance tests for systems that lack them.*

5. C. Laaber, H. C. Gall, and **P. Leitner**: Applying Test Case Prioritization to Software Microbenchmarks, Empirical Software Engineering (EMSE), 2021. *Relevant for Track 4: we investigate how to select the most appropriate microbenchmarks to execute from a large set of candidates.*

6. C. Laaber, S. Würsten, H. C. Gall, and **P. Leitner**: Dynamically Reconfiguring Software Microbenchmarks: Reducing Execution Time Without Sacrificing Result Quality, Symposium on the Foundations of Software Engineering (ESEC/FSE), 2020. *Foundational for Track 4: we propose a statistical approach to drastically speed up performance benchmarking, which potentially allows performance testing to be integrated into LLM model training.*

7. D. Costa, CP. Bezemer, **P. Leitner**, and A. Andrzejak: What's Wrong With My Benchmark Results? Studying Bad Practices in JMH Benchmarks, IEEE Transactions on Software Engineering (TSE), 2019. *Relevant for Track 4 and 5: we analyze common pitfalls in benchmarking practices and their implications for software performance.*

8. J. Cito, **P. Leitner**, M. Rinard, and H. C. Gall: Interactive Production Performance Feedback in the IDE, International Conference on Software Engineering (ICSE), 2019. *Relevant for Track 5: we propose a tool that brings performance feedback from production systems into the developer's IDE. Through this work we have gained significant experience with automation tools that transform development practices.*

9. **P. Leitner** and J. Cito: Patterns in the Chaos – a Study of Performance Variation and Predictability in Public IaaS Clouds, ACM Transactions on Internet Technology (TOIT), 2016. *Relevant for Track 4: we analyze performance variation in public clouds and its implications for performance testing. This paper has received around 300 citations to date.*

10. J. Cito, **P. Leitner**, T. Fritz, and H. C. Gall: The Making of Cloud Applications – An Empirical Study on Software Development for the Cloud, Symposium on the Foundations of Software Engineering (ESEC/FSE), 2015. *Relevant for Track 5: we study how developers build cloud applications. This paper is another example of our experience studying radical transformations in software development.*