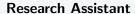
Paul Bittner, M.Sc.

paul.bittner@uni-ulm.de

Researcher on software engineering and programming languages; longtime professional and hobby programmer; can formalize and prove soundness properties of software; values and writes high-quality documentation; enjoys engineering expressive, easy-to-use but hard-to-misuse systems, as well as exploring problem specifications deeply and foundationally to profit from applying tools and methods across disciplines.



2020/03-present

Ulm University (2020-24), Paderborn University (2024), TU Braunschweig (2025)

- · 27 scientific publications (5 as first-author including 4 top-ranked conferences) in the fields of software engineering, programming languages, computer graphics
- · developed several small to large-scale and peer-reviewed research prototypes
- · team lead in several (international) research efforts
- · supervised multiple bachelor's and master's theses within my research agenda
- teaching assistant for compiler construction, software product lines, software engineering projects, seminars

Student Research Assistant

2019/07-2020/01

Inst. of Software Engineering and Autom. Inf., TU Braunschweig

Designed, implemented, and published [6] a meta-algorithm for reducing a particular SMT problem to SAT in the context of configuring university courses.

Student Research Assistant

2016/11-2020/01

Computer Graphics Lab, TU Braunschweig

Responsible for maintaining and extending C++/OpenGL real-time rendering engines for research on virtual reality, panorama imagery, and animation. I presented the lab's research to pupils once a year.

Part-time Junior Software Developer

2014/06-2015/10

Richter Datensysteme GmbH

C# front-end development, software testing

Other Positions

2015/11–2017/02 Tutor for Lectures on Algorithms and Data Structures

Algorithms Department, TU Braunschweig

2014/05-2015/09 Occasional Part-Time Jobs at Expos

Event Consulting & Management GmbH

Awards

2024/10 Distinguished Artifact at OOPSLA'24 as first author

2024/09 Best Research Paper at SPLC'24 as co-author

2024/07 Best Demonstrations Paper at FSE'24 as first author

2022/09 Best Demonstrations Paper at SPLC'21 as co-author

2021/08 Best Artifact at ESEC/FSE'21 as first author

2016/07 Winner of the Software Engineering Student Competition at TU

Braunschweig As a team, we implemented a 3D game engine in Java including an editor and a small game. We presented our product next to all other teams at the uni's exhibition to a jury constisting of professors, company delegates, and student representatives.





Education

PhD in Computer Science 2020–2025 (est.), Ulm Univ. Analyzing Edits to Static Variability Master in Computer Science

Master in Computer Science 2017–2020, TU Braunschweig

Semi-Automated Inference of Feature Traceability During Software Development

Bachelor in Computer Science 2014–2017, TU Braunschweig

Evaluation of Skinning Techniques for Skeletal Animation in MonSteR

Communication

- · excellent scientific writing
- · high-quality documentation
- experienced speaker
- experienced supervisor and teacher

Languages & Tools

Expert: Agda, Java, C/C++, Haskell, C#, Git, LaTeX Experienced: Python, ELisp, Linux, real-time rendering, game engine development Knowledgable: Kotlin, JS, ANTLR, Nix/NixOS, ...

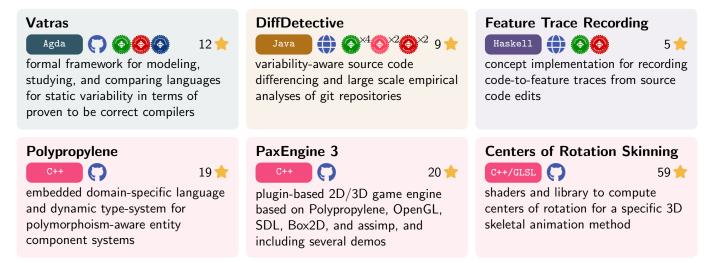
Math & Formal Methods

Expert: theorem proving, formal semantics, specify and implement PLs, DSLs, compilers, interpreters; software variability Experienced: type theory, category theory, algebra, logic(s), constraint solving

Languages

German (native), English (fluent)

Portfolio



A full list of my projects can be found on my website pmbittner.github.io/projects/.

Highlighted Publications

- [1] On the Expressive Power of Languages for Static Variability
 P. M. Bittner, A. Schultheiß, B. Moosherr, J. M. Young, L. Teixeira, E. Walkingshaw, P. Ataei, and T. Thüm
 PACMPL no. OOPSLA2, Oct. 2024, DOI: 10.1145/3689747, OOO, Distinguished Artifact
- [2] Variability-Aware Differencing with DiffDetective
 P. M. Bittner, A. Schultheiß, B. Moosherr, T. Kehrer, and T. Thüm
 FSE Companion, Jul. 2024, DOI: 10.1145/3663529.3663813, O. Best Demonstrations Paper
- [3] Views on Edits to Variational Software
 P. M. Bittner, A. Schultheiß, S. Greiner, B. Moosherr, S. Krieter, C. Tinnes, T. Kehrer, and T. Thüm

 SPLC, Aug. 2023, DOI: 10.1145/3579027.3608985,
- [4] Classifying Edits to Variability in Source Code
 P. M. Bittner, C. Tinnes, A. Schultheiß, S. Viegener, T. Kehrer, and T. Thüm
 ESEC/FSE, Nov. 2022, DOI: 10.1145/3540250.3549108,
- [5] Feature Trace Recording
 P. M. Bittner, A. Schultheiß, T. Thüm, T. Kehrer, J. M. Young, and L. Linsbauer

 ESEC/FSE, Aug. 2021, DOI: 10.1145/3468264.3468531, O. Best Artifact
- [6] SAT Encodings of the At-Most-k Constraint A Case Study on Configuring University Courses P. M. Bittner, T. Thüm, and I. Schaefer SEFM, Sep. 2019, DOI: 10.1007/978-3-030-30446-1_7

A full list of my publications can be found on my website pmbittner.github.io/publications/.