

Paul Maximilian Bittner, M.Sc.

paul.bittner@uni-ulm.de



Education

2020–2025 (est.)	<i>PhD in Computer Science</i> Ulm University
2017–2020	<i>Master in Computer Science, Excellent (1.2)</i> TU Braunschweig
2014–2017	<i>Bachelor in Computer Science, Good (2.1)</i> TU Braunschweig
2006–2014	<i>Abitur (High School Graduation), Good (2.0)</i> Immanuel Kant Gymnasium Lachendorf



Positions

2025/01–present	<i>Research Assistant</i> Institute of Software Engineering and Automotive Informatics, TU Braunschweig
2024/04–2024/12	<i>Research Assistant</i> Department of Computer Science Software Engineering, Paderborn University
2020/03–2024/03	<i>Research Assistant</i> Institute of Software Engineering and Programming Languages, Ulm University
2019/07–2020/01	<i>Student Research Assistant</i> Institute of Software Engineering and Automotive Informatics, TU Braunschweig
2016/11–2020/01	<i>Student Research Assistant</i> Computer Graphics Lab, TU Braunschweig
2015/11–2017/02	<i>Tutor for Lectures on Algorithms and Data Structures</i> Algorithms Department, TU Braunschweig
2014/06–2015/10	<i>Part-time Junior Software Developer</i> Richter Datensysteme 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

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
Proceedings of the ACM on Programming Languages (PACMPL) no. OOPSLA2, Oct. 2024
DOI: [10.1145/3689747](https://doi.org/10.1145/3689747),   , **Distinguished Artifact**
- [2] Variability-Aware Differencing with DiffDetective
P. M. Bittner, A. Schultheiß, B. Moosherr, T. Kehrer, and T. Thüm
Companion Proc. Int'l Conference on the Foundations of Software Engineering (FSE Companion), Jul. 2024
DOI: [10.1145/3663529.3663813](https://doi.org/10.1145/3663529.3663813),  , **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
Proc. Int'l Systems and Software Product Line Conf. (SPLC), Aug. 2023
DOI: [10.1145/3579027.3608985](https://doi.org/10.1145/3579027.3608985),  
- [4] Classifying Edits to Variability in Source Code
P. M. Bittner, C. Tinnes, A. Schultheiß, S. Viegner, T. Kehrer, and T. Thüm
Proc. Europ. Software Engineering Conf./Foundations of Software Engineering (ESEC/FSE), Nov. 2022
DOI: [10.1145/3540250.3549108](https://doi.org/10.1145/3540250.3549108),  
- [5] Feature Trace Recording
P. M. Bittner, A. Schultheiß, T. Thüm, T. Kehrer, J. M. Young, and L. Linsbauer
Proc. Europ. Software Engineering Conf./Foundations of Software Engineering (ESEC/FSE), Aug. 2021
DOI: [10.1145/3468264.3468531](https://doi.org/10.1145/3468264.3468531),  , **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
Proc. Int'l Conf. on Software Engineering and Formal Methods (SEFM), Sep. 2019
DOI: [10.1007/978-3-030-30446-1_7](https://doi.org/10.1007/978-3-030-30446-1_7)

Articles

- [7] Evaluating State-of-the-Art #SAT Solvers on Industrial Configuration Spaces
C. Sundermann, T. Heß, M. Nieke, P. M. Bittner, J. M. Young, T. Thüm, and I. Schaefer
Empirical Software Engineering (EMSE) no. 29, Jan. 2023
DOI: [10.1007/s10664-022-10265-9](https://doi.org/10.1007/s10664-022-10265-9)
- [8] RaQuN: A Generic and Scalable N-Way Model Matching Algorithm
A. Schultheiß, P. M. Bittner, A. Boll, L. Grunske, T. Thüm, and T. Kehrer
Software and Systems Modeling (SoSyM), Oct. 2023
DOI: [10.1007/s10270-022-01062-5](https://doi.org/10.1007/s10270-022-01062-5)
- [9] Variational Satisfiability Solving: Efficiently Solving Lots of Related SAT Problems
J. M. Young, P. M. Bittner, E. Walkingshaw, and T. Thüm
Empirical Software Engineering (EMSE), Nov. 2022
DOI: [10.1007/s10664-022-10217-3](https://doi.org/10.1007/s10664-022-10217-3)

Conference Publications

- [10] Give an Inch and Take a Mile? Effects of Adding Reliable Knowledge to Heuristic Feature Tracing
S. Greiner, A. Schultheiß, P. M. Bittner, T. Thüm, and T. Kehrer
Proc. Int'l Systems and Software Product Line Conf. (SPLC), Sep. 2024
DOI: [10.1145/3646548.3672593](https://doi.org/10.1145/3646548.3672593),  , **Best Research Paper**

- [11] Explaining Edits to Variability Annotations in Evolving Software Product Lines
L. Güthing, P. M. Bittner, I. Schaefer, and T. Thüm
Proc. Int'l Working Conf. on Variability Modelling of Software-Intensive Systems (VaMoS), Feb. 2024
DOI: [10.1145/3634713.3634725](https://doi.org/10.1145/3634713.3634725)
- [12] Benchmark Generation With VEVOS: A Coverage Analysis of Evolution Scenarios in Variant-Rich Systems
A. Schultheiß, P. M. Bittner, S. Greiner, and T. Kehrer
Proc. Int'l Working Conf. on Variability Modelling of Software-Intensive Systems (VaMoS), Jan. 2023
DOI: [10.1145/3571788.3571793](https://doi.org/10.1145/3571788.3571793)
- [13] Quantifying the Potential to Automate the Synchronization of Variants in Clone-and-Own
A. Schultheiß, P. M. Bittner, T. Thüm, and T. Kehrer
Proc. Int'l Conf. on Software Maintenance and Evolution (ICSME), Oct. 2022
DOI: [10.1109/ICSME55016.2022.00032](https://doi.org/10.1109/ICSME55016.2022.00032)
- [14] Derivation of Subset Product Lines in FeatureIDE
L. Linsbauer, P. Westphal, P. M. Bittner, S. Krieter, T. Thüm, and I. Schaefer
Proc. Int'l Systems and Software Product Line Conf. (SPLC), Sep. 2022
DOI: [10.1145/3503229.3547033](https://doi.org/10.1145/3503229.3547033), **Best Demo/Tools Paper**
- [15] Simulating the Evolution of Clone-and-Own Projects With VEVOS
A. Schultheiß, P. M. Bittner, S. El-Sharkawy, T. Thüm, and T. Kehrer
Proc. Int'l Conf. on Evaluation Assessment in Software Engineering (EASE), Jun. 2022
DOI: [10.1145/3530019.3534084](https://doi.org/10.1145/3530019.3534084)
- [16] Bridging the Gap Between Clone-and-Own and Software Product Lines
T. Kehrer, T. Thüm, A. Schultheiß, and P. M. Bittner
Proc. Int'l Conf. on Software Engineering (ICSE), May 2021
DOI: [10.1109/ICSE-NIER52604.2021.00013](https://doi.org/10.1109/ICSE-NIER52604.2021.00013)
- [17] Scalable N-Way Model Matching Using Multi-Dimensional Search Trees
A. Schultheiß, P. M. Bittner, L. Grunske, T. Thüm, and T. Kehrer
Proc. Int'l Conf. on Model Driven Engineering Languages and Systems (MODELS), Oct. 2021
DOI: [10.1109/MODELS50736.2021.00010](https://doi.org/10.1109/MODELS50736.2021.00010)
- [18] Applications of #SAT Solvers on Feature Models
C. Sundermann, M. Nieke, P. M. Bittner, T. Heß, T. Thüm, and I. Schaefer
Proc. Int'l Working Conf. on Variability Modelling of Software-Intensive Systems (VaMoS), Feb. 2021
DOI: [10.1145/3442391.3442404](https://doi.org/10.1145/3442391.3442404)
- [19] Temporal Consistent Motion Parallax for Omnidirectional Stereo Panorama Video
M. Mühlhausen, M. Kappel, M. Kassubeck, P. M. Bittner, S. Castillo, and M. Magnor
Proc. ACM Symposium on Virtual Reality Software and Technology (VRST), Nov. 2020
DOI: [10.1145/3385956.3418965](https://doi.org/10.1145/3385956.3418965)
- [20] On the Use of Product-Line Variants as Experimental Subjects for Clone-and-Own Research: A Case Study
A. Schultheiß, P. M. Bittner, T. Kehrer, and T. Thüm
Proc. Int'l Systems and Software Product Line Conf. (SPLC), Oct. 2020
DOI: [10.1145/3382025.3414972](https://doi.org/10.1145/3382025.3414972)

Workshop Publications

- [21] Depth Augmented Omnidirectional Stereo for 6-DoF VR Photography
T. Bertel, M. Mühlhausen, M. Kappel, P. M. Bittner, C. Richardt, and M. Magnor
Proc. IEEE Virtual Reality Workshop (VR), May 2020
DOI: [10.1109/VRW50115.2020.00181](https://doi.org/10.1109/VRW50115.2020.00181)

- [22] Immersive EEG: Evaluating Electroencephalography in Virtual Reality
J.-P. Tauscher, F. W. Schottky, S. Grogorick, P. M. Bittner, M. Mustafa, and M. Magnor
Proc. IEEE Virtual Reality Workshop (VR), Mar. 2019
DOI: [10.1109/VR.2019.8797858](https://doi.org/10.1109/VR.2019.8797858)
- [23] Gaze and Motion-Aware Real-Time Dome Projection System
S. Grogorick, M. Überheide, J.-P. Tauscher, P. M. Bittner, and M. Magnor
Proc. IEEE Virtual Reality Workshop (VR), Mar. 2019
DOI: [10.1109/VR.2019.8797902](https://doi.org/10.1109/VR.2019.8797902)

Other Reviewed Publications

- [24] Evaluating State-of-the-Art #SAT Solvers on Industrial Configuration Spaces
C. Sundermann, T. Heß, M. Nieke, P. M. Bittner, J. M. Young, T. Thüm, and I. Schaefer
Proc. Software Engineering (SE), Feb. 2024
DOI: [10.18420/sw2024_18](https://doi.org/10.18420/sw2024_18)
- [25] Variational Satisfiability Solving: Efficiently Solving Lots of Related SAT Problems – Summary
J. M. Young, P. M. Bittner, E. Walkingshaw, and T. Thüm
Proc. Software Engineering (SE), Feb. 2023
- [26] Quantifying the Potential to Automate the Synchronization of Variants in Clone-and-Own – Summary
A. Schultheiß, P. M. Bittner, T. Thüm, and T. Kehrer
Proc. Software Engineering (SE), Feb. 2023
- [27] Classifying Edits to Variability in Source Code – Summary
P. M. Bittner, C. Tinnes, A. Schultheiß, S. Viegner, T. Kehrer, and T. Thüm
Proc. Software Engineering (SE), Feb. 2023
- [28] Feature Trace Recording - Summary
P. M. Bittner, A. Schultheiß, T. Thüm, T. Kehrer, J. M. Young, and L. Linsbauer
Proc. Software Engineering (SE), Feb. 2022
DOI: [10.18420/se2022-ws-002](https://doi.org/10.18420/se2022-ws-002)
- [29] Scalable N-Way Model Matching Using Multi-Dimensional Search Trees – Summary
A. Schultheiß, P. M. Bittner, T. Thüm, and T. Kehrer
Proc. Software Engineering (SE), Feb. 2022
DOI: [10.18420/se2022-ws-028](https://doi.org/10.18420/se2022-ws-028)
- [30] Evaluation of Optimised Centres of Rotation Skinning
P. M. Bittner, J.-P. Tauscher, S. Grogorick, and M. Magnor
Poster at International Conference on Computational Visual Media, Apr. 2019

Other Non-Reviewed Publications

- [31] Semi-Automated Inference of Feature Traceability During Software Development
P. M. Bittner, Feb. 2020, DOI: [10.24355/dbbs.084-202002271120-0](https://doi.org/10.24355/dbbs.084-202002271120-0)
- [32] SAT Encodings of the At-Most-k Constraint – A Case Study on Configuring University Courses
P. M. Bittner, Mar. 2019
- [33] Evaluation of Skinning Techniques for Skeletal Animation in MonSteR
P. M. Bittner, Sep. 2017

Advised Master's Theses

- [34] Variability-Aware Patching of Software Product-Line Variants
P. Meier, 2025, *In progress*

- [35] On the Succinctness of Languages for Static Variability
B. Moosherr, 2025, *In progress*
- [36] Inspecting the Evolution of Feature Annotations in Configurable Software
L. Güthing, Jan. 2023
- [37] Type-Checking Variability in Clone-and-Own Variants With Product-Line Tooling
K. Jedelhauser, Sep. 2022

Advised Bachelor's Theses

- [38] Understanding Variant Drift via Cherry-Picking
M. Küppers, 2025, *In progress*
- [39] Unparsing von Datenstrukturen zur Analyse von C-Präprozessor-Variabilität
E. Shulimov, Jan. 2025
- [40] Constructing Variation Diffs Using Tree Diffing Algorithms
B. Moosherr, Apr. 2023, DOI: [10.18725/OPARU-50108](https://doi.org/10.18725/OPARU-50108)
- [41] Reverse Engineering Feature-Aware Commits From Software Product-Line Repositories
L. Bormann, Oct. 2022, DOI: [10.18725/OPARU-47892](https://doi.org/10.18725/OPARU-47892)
- [42] Empirical Evaluation of Feature Trace Recording on the Edit History of Marlin
S. Viegner, Apr. 2021, DOI: [10.18725/OPARU-38603](https://doi.org/10.18725/OPARU-38603)

Program Committees

- | | |
|-----------|--|
| ICSE 2024 | 46th International Conference on Software Engineering
(Artifact Evaluation Track) |
| SPLC 2020 | 24th International Systems and Software Product Line Conference
(Challenge Solutions Track) |

Reviewer for Journals

- | | |
|------|--|
| JSS | Journal of Systems & Software (2025) |
| AUSE | Automated Software Engineering (2024) |
| TOCS | Theory of Computing Systems (2023) |

External Reviewer

- | | |
|---------------|--|
| FSE | International Conference on the Foundations of Software Engineering (2025) |
| TSE | Transactions on Software Engineering (2021) |
| SoSyM | Software and Systems Modeling (2022) |
| GPCE '21 | International Conference on Generative Programming: Concepts & Experiences |
| SPLC '20–'23 | International Systems and Software Product Line Conference |
| VaMoS '21–'23 | International Conference on Variability Modeling of Software-Intensive Systems |

Teaching

- | | |
|--------------|---|
| '25 | Seminars on Collaborative Software Development (English, Bachelor) and Software Variability (English, Master) |
| '23, '24 | Compiler Construction (German, Master), Exercise Instructor |
| '20–'22, '24 | Software Product Lines (German/English, Master), Exercise Instructor |

'20-'21, '23	Software Engineering Projects (German, Bachelor/Master)
'17	Introduction to Algorithm Engineering (German, Bachelor), Tutor
'15-'17	Algorithms and Data Structures I + II (German, Bachelor), Tutor

Other Service

2017–2018	Hiring committee for computer vision tenure track TU Braunschweig
2017	Student Volunteer Symposium on Visual Computing and Perception (SVCP 2017)