

# Sven Apel

## Curriculum Vitae

2024-04-25



### Coordinates

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Position: Full Professor

Affiliation: Saarland University  
Saarland Informatics Campus  
Chair of Software Engineering  
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### Research Interests

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A key vision driving my research is to empower software engineering practice to enter an **era of intensive automation**. I develop and evaluate methods, tools, and theories for the construction of manageable, reliable, efficient, configurable, and evolvable software systems. In particular, I am interested in:

- Software product lines and configurable systems
- Domain-specific generation and optimization
- Software analytics and intelligence
- Empirical methods and the human factor in software engineering

I apply my research results routinely to real-world software systems and projects from different domains, in particular, data-intensive, operating, and high-performance computing systems, both from the open-source realm or in collaborations with partners from industry, such as Siemens AG, Bosch Austria, Airbus Helicopters, and Fraunhofer IESE.

### Education

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2003 – 2007     Doctoral degree in Computer Science (Doktor-Ingenieur),  
University of Magdeburg, Germany, Grade “**summa cum laude**” (with distinction)

1996 – 2002     Diploma degree in Computer Science (Diplom-Informatiker),  
University of Magdeburg, Germany, Grade “**A**” (excellent)

### Academic Employment

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since 2019     Full Professor, Chair of Software Engineering, Saarland University, Germany

2013 – 2019     Full Professor (Heisenberg Professorship, tenured in 2017),  
Chair of Software Engineering I, University of Passau, Germany

2010 – 2013     Head of Emmy-Noether Research Group “Safe and Efficient Software Product Lines”,  
University of Passau, Germany

2012             Visiting Researcher, University of Waterloo, Canada

2007 – 2010     Postdoctoral Researcher, University of Passau, Germany

2006             Visiting Scholar, University of Texas at Austin, USA

2003 – 2007     Research Assistant, University of Magdeburg, Germany

## Awards and Honors

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2024	Distinguished Reviewer Award @ ICSE
2023	<b>Most Influential Paper Award</b> @ GPCE
2022	<b>ERC Advanced Grant</b>
2022	<b>ASE Fellow</b>
2022	<b>Most Influential Paper Award</b> @ ICPC
2021	ACM SIGSOFT Distinguished Paper Award @ ICSE
2019	<b>Most Influential Paper Award</b> @ SPLC
2018	<b>ACM Distinguished Member</b> for Outstanding Scientific Contributions to Computing
2018	Distinguished Reviewer Award @ ASE
2016	<b>Hugo Junkers Award</b> for Research and Innovation
2015	Appointment to the <b>Young Academy of Europe</b> (5 years)
2015	ACM SIGSOFT Distinguished Paper Award @ ICSE
2015	Best Paper Award @ Modularity
2013	<b>Heisenberg Professorship</b> of the German Research Foundation
2011	Best Research Paper Award @ SPLC
2010	<b>Emmy-Noether Fellowship</b> of the German Research Foundation
2007	<b>Dissertation Award</b> of the University of Magdeburg and the Karin-Witte Foundation
2007	<b>Software-Engineering Award</b> of the <b>Ernst-Denert Foundation</b> for the Best Doctoral Dissertation
2006	Award of the School of Computer Science, University of Magdeburg for Outstanding Scientific Achievements

## Research Grants and Projects

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2022 – 2027	A Neuroscientific Foundation of Program Comprehension (Brains On Code), <b>ERC Advanced Grant</b> (101052182): <b>2 500 000 €</b>
2022 – 2026	Foundations of Perspicuous Software Systems (CPEC), funded within <b>DFG Transregional Collaborative Research Centre 248</b> : Principal investigator (Projects C2 and E3)
2020 – 2023	Foundations and Implications of Socio-Technical Congruence in Large-Scale, Decentralized, and Distributed Software Projects (Congruence), funded by <b>DFG</b> (AP 206/14-1): <b>620 000 €</b>
2017 – 2024	Performance Evolution of Highly Configurable Software Systems (Pervolution), funded by <b>DFG</b> (AP 206/11-1&2): <b>520 000 €</b> of <b>1 040 000 €</b> , with Norbert Siegmund
2013 – 2018	Advanced Stencil-Code Engineering (ExaStencils), funded within <b>DFG Priority Program 1648</b> (AP 206/7-1&2): <b>510 000 €</b> of <b>2 500 000 €</b> , with Christian Lengauer, Ulrich Rude, Jürgen Teich, and Matthias Bolten
2013 – 2018	Generation of Correct and Efficient Software based on Product-Line Technology (SafeSPL++), funded within <b>DFG Heisenberg Program</b> (AP 206/6-1&2): <b>660 000 €</b>
2012 – 2017	Techniques and Prediction Models for Sustainable Product-Line Engineering (Pythia), funded within <b>DFG Priority Program 1593</b> (AP 206/5-1&2): <b>700 000 €</b>
2015 – 2018	Taming and Optimizing Feature Interaction in Software-intensive Automotive Systems (FeatureOpt), funded by <b>FFG</b> : <b>100 000 €</b> of <b>500 000 €</b> , with Hermann Kaindl and Bosch Austria
2010 – 2015	Safe and Efficient Software Product Lines (SafeSPL), funded within <b>DFG Emmy-Noether Program</b> (AP 206/4-1&2): <b>1 300 000 €</b>
2011 – 2013	Typing of MapReduce (MapReduceFoundation), funded by <b>DFG</b> (LE 912/13-1): <b>160 000 €</b> (no share), with Christian Lengauer

2009 – 2013 Algebra-Based Feature-Oriented Program Synthesis (FeatureFoundation),  
funded by **DFG** (AP 206/2-1&2): **320 000 €** of **640 000 €**,  
with Christian Lengauer and Bernhard Möller

## Professional Service

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### Steering Committees (selected)

ACM Joint European Software Engineering Conference and  
Symposium on the Foundations of Software Engineering (ESEC/FSE), since 2017  
IEEE/ACM Int'l Conference on Automated Software Engineering (ASE), 2016–2022

### Organization Committees (selected)

27th ACM Joint European Software Engineering Conference and  
Symposium on the Foundations of Software Engineering (ESEC/FSE'19), **Program Chair**  
31th IEEE/ACM Int'l Conference on Automated Software Engineering (ASE'16), **Program Chair**  
Dagstuhl Seminar on Feature Interactions: The Next Generation, 2014  
10th Int'l Conference on Software Composition (SC'11), **Program Chair**  
Dagstuhl Seminar on Feature-Oriented Software Development, 2011  
Dagstuhl Seminar on Software Engineering for Tailor-made Data Management, 2008

### Editorships

Empirical Software Engineering, Member of Editorial Board, 2015–2023  
IEEE Software, Member of Editorial Board, 2015–2023  
IEEE Transactions on Software Engineering, Member of Editorial Board, 2017–2021

### Program Committees (selected)

ACM/IEEE Int'l Conference on Software Engineering (ICSE), 2014–2017, 2019–2020, 2024  
ACM Joint European Software Engineering Conference and  
Symposium on the Foundations of Software Engineering (ESEC/FSE), 2013, 2018–2021, 2024  
IEEE/ACM Int'l Conference on Automated Software Engineering (ASE), 2009–2011, 2013–2018,  
2020–2022  
European Conference on Object-Oriented Programming (ECOOP), 2011, 2014, 2016

### Award Committees

SPEC Kaivalya Dixit Distinguished Dissertation Award Committee, 2022  
IEEE Software Award Approval Committee, since 2019  
ACM SIGSOFT Outstanding Dissertation Award Committee, 2018  
Test of Award Committee, ESEC/FSE, 2018–2020  
Dissertation Award Committee of the German Computer Science Society, since 2017

### Departmental Service

Vice Chair of the Board of Examiners for Doctoral Awards, 2016–2019  
Member of the Board of Examiners for Computer Science, 2013–2019  
Head of the Master Program of Computer Science, 2013–2015  
Member of the Accreditation Committee for Computer Science, 2014

## Invited Talks and Lectures (selected)

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- Brains on Code: Towards a Neuroscientific Foundation of Program Comprehension  
**Keynote** at the Int'l Conference on Fundamental Approaches to Software Engineering (FASE), Paris, France, 2023
- Software Performance Modelling in Spacetime  
**Keynote** at the ACM/SPEC Int'l Conference on Performance Engineering (ICPE), virtual event, 2021
- Publishing your Research: Strategies, Prospects, and Pitfalls  
**Invited Lecture** at the New Faculty Symposium of the Int'l Conference on Software Engineering, Gothenburg, Sweden, 2018
- Understanding Organizational Evolution of Software Projects  
**Keynote** at the Annual German Software Engineering Conference, Ulm, Germany, 2018
- The New Feature Interaction Challenge,  
**Keynote** at the Int'l Workshop on Variability Modelling of Software-intensive Systems, Eindhoven, The Netherlands, 2017
- From Crosscutting Concerns to Feature Interactions: A Tale of Misunderstandings and Enlightenment, **Keynote** at the Int'l Conference on Modularity, Malaga, Spain, 2016
- Conquering the Combinatorial Explosion: Analyzing Variable Software,  
**Keynote** at the Brazilian Conference on Software: Theory and Practice, Maceió, Brazil, 2014
- Language-Independent and Automated Software Composition: The FeatureHouse Experience,  
**Keynote** at the Int'l Conference on Software Composition, Budapest, 2013

## Supervision of Students

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### Ph.D. students (current)

Annabelle Bergum	Roman Haas	Georg Seibt
Thomas Bock	Christian Hechtl	Christof Tinnes
Sebastian Böhm	Anna-Maria Maurer	Kallistos Weis
Tobias Dick	Raphael Nömmmer	Alisa Welter

### Ph.D. students (graduated)

- Dr. Florian Sattler, 2024
- Dr. Gustavo Do Vale, 2024
- Dr. Christian Kaltenecker, 2024
- Dr. Norman Peitek, 2022, **Dissertation Award (TU Chemnitz)**, co-advised with Prof. Janet Siegmund
- Dr. Andreas Stahlbauer, 2020
- Dr. Sergiy Kolesnikov, 2019
- Dr. Mitchell Joblin, 2017, **Dissertation Award (University of Passau)**
- Dr. Alexander von Rhein, 2016, **Dissertation Award (University of Passau)**
- Dr. Jörg Liebig, 2015, **Software-Engineering Award (Ernst-Denert Foundation)**

## Teaching (selected)

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### Lectures

Software Engineering, since 2010	Introduction to Computer Science, 2018
Software Product Line Engineering, since 2011	Modern Programming Paradigms, 2007–2010
Types and Programming Languages, since 2018	Propädeutikum Informatik, 2008–2009

### Lab Exercises

- Software Engineering Lab, since 2016

Electronic versions of all publications are available on the Web: <https://www.se.cs.uni-saarland.de/apel/>.

## Dissertation

1. Sven Apel. *The Role of Features and Aspects in Software Development*. PhD thesis, School of Computer Science, University of Magdeburg, March 2007. **Software-Engineering Award of the Ernst-Denert Foundation.**

## Books

1. Sven Apel, Don Batory, Christian Kästner, and Gunter Saake. *Feature-Oriented Software Product Lines: Concepts and Implementation*. Springer, October 2013. 315 pages.

## Refereed Journal Articles (selected)

40. Clemens Dubslaff, Kallistos Weis, Christel Baier, and Sven Apel. Feature Causality. *Journal of Systems and Software (JSS)*, 2024. To appear.
39. Thomas Bock, Nils Alznauer, Mitchell Joblin, and Sven Apel. Automatic Core-Developer Identification on GitHub: A Validation Study. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 32(6):138, November 2023.
38. Florian Sattler, Sebastian Böhm, Philipp Schubert, Norbert Siegmund, and Sven Apel. SEAL: Integrating Program Analysis and Repository Mining. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 32(5):121, September 2023.
37. Mitchell Joblin, Barbara Eckl, Thomas Bock, Angelika Schmid, Janet Siegmund, and Sven Apel. Hierarchical and Hybrid Organizational Structures in Open-Source Software Projects. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 32(4):86, July 2023.
36. Johannes Dorn, Sven Apel, and Norbert Siegmund. Mastering Uncertainty in Performance Estimations of Configurable Software Systems. *Empirical Software Engineering (EMSE)*, 28(2):33, January 2023.
35. Gustavo do Vale, Claus Hunsen, Eduardo Figueiredo, and Sven Apel. Challenges of Resolving Merge Conflicts: A Mining and Survey Study. *IEEE Transactions on Software Engineering (TSE)*, 48(12):4964–4985, December 2022.
34. Georg Seibt, Florian Heck, Guilherme Cavalcanti, Paulo Borba, and Sven Apel. Leveraging Structure in Software Merge: An Empirical Study. *IEEE Transactions on Software Engineering (TSE)*, 48(11):4590–4610, November 2022.
33. Wolfgang Mauerer, Mitchell Joblin, Damian Tamburri, Carlos Paradis, Rick Kazman, and Sven Apel. In Search of Socio-Technical Congruence: A Large-Scale Longitudinal Study. *IEEE Transactions on Software Engineering (TSE)*, 48(8):3159–3184, August 2022.
32. Mitchell Joblin and Sven Apel. How Do Successful and Failed Projects Differ? A Socio-Technical Analysis. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 31(4):67, July 2022.
31. Sven Apel, Christian Kästner, and Eunsuk Kang. Feature Interactions on Steroids: On the Composition of ML Models. *IEEE Software*, 39(3):120–124, May 2022.
30. Thomas Bock, Angelika Schmid, and Sven Apel. Measuring and Modeling Group Dynamics in Open-Source Software Development: A Tensor Decomposition Approach. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 31(2):19, April 2022.
29. Norbert Siegmund, Johannes Dorn, Max Weber, Christian Kaltenecker, and Sven Apel. Green Configuration: Can AI Help in Reducing Energy Consumption of Configurable Software Systems? *IEEE Computer*, 55(3):74–81, March 2022.
28. Thiago Castro, Leopoldo Teixeira, Vander Alves, Sven Apel, Maxime Cordy, and Rohit Gheyi. A Formal Framework of Software Product Line Analyses. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 30(3):34, April 2021.
27. Janet Siegmund, Norman Peitek, Sven Apel, and Norbert Siegmund. Mastering Variation in Human Studies: The Role of Aggregation. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 30(1):2, January 2021.

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<sup>1</sup>The h-index has been computed by Google Scholar.

26. Leonardo Passos, Rodrigo Queiroz, Mukelabai Mukelabai, Thorsten Berger, Sven Apel, Krzysztof Czarnecki, and Jesus Alejandro Padilla. A Study of Feature Scattering in the Linux Kernel. *IEEE Transactions on Software Engineering (TSE)*, 47(1):146–164, January 2021.
25. Vivek Nair, Zhe Yu, Tim Menzies, Norbert Siegmund, and Sven Apel. Finding Faster Configurations using FLASH. *IEEE Transactions on Software Engineering (TSE)*, 46(7):794–811, July 2020.
24. Christian Kaltenecker, Alexander Grebhahn, Norbert Siegmund, and Sven Apel. The Interplay of Sampling and Machine Learning for Software Performance Prediction. *IEEE Software*, 37(4):58–66, July 2020.
23. Janet Siegmund, Norman Peitek, André Brechmann, Chris Parnin, and Sven Apel. Studying Programming in the Neuroage: Just a Crazy Idea? *Communications of the ACM*, 63(6):30–34, June 2020.
22. Norman Peitek, Janet Siegmund, Sven Apel, Christian Kästner, Chris Parnin, Anja Bethmann, Thomas Leich, Gunter Saake, and André Brechmann. A Look into Programmers’ Heads. *IEEE Transactions on Software Engineering (TSE)*, 46(4):442–462, April 2020.
21. Roman Haas, Rainer Niedermayr, Tobias Roehm, and Sven Apel. Is Static Analysis Able to Identify Unnecessary Source Code? *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 29(1):6, March 2020.
20. Andreas Simbürger, Sven Apel, Armin Größlinger, and Christian Lengauer. PolyJIT: Polyhedral Optimization Just in Time. *International Journal of Parallel Programming (IJPP)*, 47(5):874–906, December 2019.
19. Flávio Medeiros, Gabriel Lima, Guilherme Amaral, Sven Apel, Christian Kästner, Márcio Ribeiro, and Rohit Gheyi. An Investigation of Misunderstanding Code Patterns in C Open-Source Software Projects. *Empirical Software Engineering (EMSE)*, 24(4):1693–1726, August 2019.
18. Stefan Ganser, Armin Größlinger, Norbert Siegmund, Sven Apel, and Christian Lengauer. Speeding up Iterative Polyhedral Schedule Optimization with Surrogate Performance Models. *ACM Transactions on Architecture and Code Optimization (TACO)*, 15(4):56, January 2019.
17. Alexander von Rhein, Jörg Liebig, Andreas Janker, Christian Kästner, and Sven Apel. Variability-Aware Static Analysis at Scale: An Empirical Study. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 27(4):18, November 2018.
16. Jianmei Guo, Dingyu Yang, Norbert Siegmund, Sven Apel, Atrisha Sarkar, Pavel Valov, Krzysztof Czarnecki, Andrzej Wasowski, and Huiqun Yu. Data-Efficient Performance Learning for Configurable Systems. *Empirical Software Engineering (EMSE)*, 23(3):1826–1867, June 2018.
15. Claire Le Goues, Yuriy Brun, Sven Apel, Emery Berger, Sarfrad Khurshid, and Yannis Smaragdakis. Effectiveness of Anonymization in Double-Blind Review. *Communications of the ACM*, 61(6):30–33, May 2018.
14. Flavio Medeiros, Marcio Ribeiro, Rohit Gheyi, Sven Apel, Christian Kästner, Bruno Ferreira, Luiz Carvalho, and Balduino Fonseca. Discipline Matters: Refactoring of Preprocessor Directives in the #ifdef Hell. *IEEE Transactions on Software Engineering (TSE)*, 44(5):453–469, May 2018.
13. Stefan Ganser, Armin Größlinger, Norbert Siegmund, Sven Apel, and Christian Lengauer. Iterative Schedule Optimization for Parallelization in the Polyhedron Model. *ACM Transactions on Architecture and Code Optimization (TACO)*, 14(3):23, September 2017.
12. Mitchell Joblin, Sven Apel, and Wolfgang Mauerer. Evolutionary Trends of Developer Coordination: A Network Approach. *Empirical Software Engineering (EMSE)*, 22(4):2050–2094, August 2017.
11. Jörg Liebig, Sven Apel, Andreas Janker, Florian Garbe, and Sebastian Oster. Handling Static Configurability in Refactoring Engines. *IEEE Computer*, 50(7):44–53, July 2017.
10. Leonardo Passos, Leopoldo Teixeira, Nicolas Dintzner, Sven Apel, Andrzej Wasowski, Krzysztof Czarnecki, Paulo Borba, and Jianmei Guo. Coevolution of Variability Models and Related Software Artifacts: A Fresh Look at Evolution Patterns in the Linux Kernel. *Empirical Software Engineering (EMSE)*, 21(4):1744–1793, August 2016.
9. Claus Hunsen, Bo Zhang, Janet Siegmund, Christian Kästner, Olaf Lessenich, Martin Becker, and Sven Apel. Preprocessor-Based Variability in Open-Source and Industrial Software Systems: An Empirical Study. *Empirical Software Engineering (EMSE)*, 21(2):449–482, April 2016.
8. Janet Siegmund, Christian Kästner, Jörg Liebig, Sven Apel, and Stefan Hanenberg. Measuring and Modeling Programming Experience. *Empirical Software Engineering (EMSE)*, 19(5):1299–1334, October 2014. **ICPC Most Influential Paper Award 2022.**

7. Thomas Thüm, Sven Apel, Christian Kästner, Ina Schaefer, and Gunter Saake. A Classification and Survey of Analysis Strategies for Software Product Lines. *ACM Computing Surveys*, 47(1):6, June 2014.
6. Janet Feigenspan, Christian Kästner, Sven Apel, Jörg Liebig, Michael Schulze, Raimund Dachsel, Maria Papendieck, Thomas Leich, and Gunter Saake. Do Background Colors Improve Program Comprehension in the #ifdef Hell? *Empirical Software Engineering (EMSE)*, 18(4):699–745, July 2013.
5. Sven Apel, Christian Kästner, and Christian Lengauer. Language-Independent and Automated Software Composition: The FeatureHouse Experience. *IEEE Transactions on Software Engineering (TSE)*, 39(1):63–79, January 2013.
4. Christian Kästner, Sven Apel, Thomas Thüm, and Gunter Saake. Type Checking Annotation-Based Product Lines. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 21(3):14, June 2012.
3. Friedrich Steimann, Thomas Pawlitzki, Sven Apel, and Christian Kästner. Types and Modularity for Implicit Invocation with Implicit Announcement. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 20(1):1, June 2010.
2. Sven Apel and DeLesley Hutchins. A Calculus for Uniform Feature Composition. *ACM Transactions on Programming Languages and Systems (TOPLAS)*, 32(5):19, May 2010.
1. Sven Apel, Thomas Leich, and Gunter Saake. Aspectual Feature Modules. *IEEE Transactions on Software Engineering (TSE)*, 34(2):162–180, April 2008.

#### Refereed Conference Papers (selected)

46. Stefan Mühlbauer, Florian Sattler, Christian Kaltenecker, Johannes Dorn, Sven Apel, and Norbert Siegmund. Analyzing the Impact of Workloads on Modeling the Performance of Configurable Software Systems. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 2085–2097. IEEE, May 2023. Acceptance rate: 26% (209 / 796).
45. Max Weber, Christian Kaltenecker, Florian Sattler, Sven Apel, and Norbert Siegmund. Twins or False Friends? A Study on Energy Consumption and Performance of Configurable Software. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 2098–2110. IEEE, May 2023. Acceptance rate: 26% (209 / 796).
44. Norman Peitek, Annabelle Bergum, Maurice Rekrut, Jonas Mucke, Matthias Nadig, Chris Parnin, Janet Siegmund, and Sven Apel. Correlates of Programmer Efficacy and their Link to Experience: A Combined EEG and Eye-Tracking Study. In *Proceedings of the ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)*, pages 120–131. ACM, November 2022. Acceptance rate: 22% (99 / 449).
43. Clemens Dubslaff, Kallistos Weis, Christel Baier, and Sven Apel. Causality in Configurable Software Systems. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 325–337. ACM, May 2022. Acceptance rate: 26% (197 / 751).
42. Miguel Velez, Pooyan Jamshidi, Norbert Siegmund, Sven Apel, and Christian Kästner. On Debugging the Performance of Configurable Software Systems: Developer Needs and Tailored Tool Support. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 1571–1583. ACM, May 2022. Acceptance rate: 26% (197 / 751).
41. Christof Tinnes, Timo Kehrer, Mitchell Joblin, Uwe Hohenstein, Andreas Biesdorf, and Sven Apel. Learning Domain-Specific Edit Operations from Model Repositories with Frequent Subgraph Mining. In *Proceedings of the International Conference on Automated Software Engineering (ASE)*, pages 930–942. IEEE, November 2021. Acceptance rate: 20% (82 / 414).
40. Norman Peitek, Sven Apel, Chris Parnin, André Brechmann, and Janet Siegmund. Program Comprehension and Code Complexity Metrics: An fMRI Study. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 524–536. IEEE, May 2021. Acceptance rate: 23% (138 / 602). **ACM SIGSOFT Distinguished Paper Award.**
39. Max Weber, Sven Apel, and Norbert Siegmund. White-Box Performance-Influence Models: A Profiling and Learning Approach. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 1059–1071. IEEE, May 2021. Acceptance rate: 23% (138 / 602).
38. Miguel Velez, Pooyan Jamshidi, Norbert Siegmund, Sven Apel, and Christian Kästner. White-Box Analysis over Machine Learning: Modeling Performance of Configurable Systems. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 1072–1084. IEEE, May 2021. Acceptance rate: 23% (138 / 602).

37. Johannes Dorn, Sven Apel, and Norbert Siegmund. Mastering Uncertainty in Performance Estimations of Configurable Software Systems. In *Proceedings of the International Conference on Automated Software Engineering (ASE)*, pages 684–696. ACM, September 2020. Acceptance rate: 23% (93 / 408).
36. Stefan Mühlbauer, Sven Apel, and Norbert Siegmund. Identifying Software Performance Changes Across Variants and Versions. In *Proceedings of the International Conference on Automated Software Engineering (ASE)*, pages 611–622. ACM, September 2020. Acceptance rate: 23% (93 / 408).
35. Dan Gopstein, Anne-Laure Fayard, Sven Apel, and Justin Cappos. Thinking Aloud About Confusing Code: A Qualitative Investigation of Program Comprehension and Atoms of Confusion. In *Proceedings of the ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)*, pages 605–616. ACM, November 2020. Acceptance rate: 28% (101 / 360).
34. Guilherme Cavalcanti, Paulo Borba, Georg Seibt, and Sven Apel. The Impact of Structure on Software Merging: Semistructured versus Structured Merge. In *Proceedings of the International Conference on Automated Software Engineering (ASE)*, pages 1002–1013. IEEE, November 2019. Acceptance rate: 25% (93 / 373).
33. Stefan Mühlbauer, Sven Apel, and Norbert Siegmund. Accurate Modeling of Performance Histories for Evolving Software Systems. In *Proceedings of the International Conference on Automated Software Engineering (ASE)*, pages 640–652. IEEE, November 2019. Acceptance rate: 25% (93 / 373).
32. Christian Kaltenecker, Alexander Grebhahn, Norbert Siegmund, Jianmei Guo, and Sven Apel. Distance-Based Sampling of Software Configuration Spaces. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 1084–1094. IEEE, May 2019. Acceptance rate: 21% (109 / 529).
31. Olaf Leßenich, Sven Apel, Christian Kästner, Georg Seibt, and Janet Siegmund. Renaming and Shifted Code in Structured Merging: Looking Ahead for Precision and Performance. In *Proceedings of the International Conference on Automated Software Engineering (ASE)*, pages 543–553. IEEE, November 2017. Acceptance rate: 21% (67 / 322).
30. Norbert Siegmund, Stefan Sobernig, and Sven Apel. Attributed Variability Models: Outside the Comfort Zone. In *Proceedings of the European Software Engineering Conference and the ACM SIGSOFT International Symposium on the Foundations of Software Engineering (ESEC/FSE)*, pages 268–278. ACM, September 2017. Acceptance rate: 24% (72 / 295).
29. Vivek Nair, Tim Menzies, Norbert Siegmund, and Sven Apel. Using Bad Learners to find Good Configurations. In *Proceedings of the European Software Engineering Conference and the ACM SIGSOFT International Symposium on the Foundations of Software Engineering (ESEC/FSE)*, pages 257–267. ACM, September 2017. Acceptance rate: 24% (72 / 295).
28. Janet Siegmund, Norman Peitek, Chris Parnin, Sven Apel, Johannes Hofmeister, Christian Kästner, Andrew Begel, Anja Bethmann, and André Brechmann. Measuring Neural Efficiency of Program Comprehension. In *Proceedings of the European Software Engineering Conference and the ACM SIGSOFT International Symposium on the Foundations of Software Engineering (ESEC/FSE)*, pages 140–150. ACM, September 2017. Acceptance rate: 24% (72 / 295).
27. Mitchell Joblin, Sven Apel, Claus Hunsen, and Wolfgang Mauerer. Classifying Developers into Core and Peripheral: An Empirical Study on Count and Network Metrics. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 164–174. IEEE, May 2017. Acceptance rate: 16% (68 / 415).
26. Sven Apel, Dirk Beyer, Vitaly Mordan, Vadim Mutilin, and Andreas Stahlbauer. On-The-Fly Decomposition of Specifications in Software Model Checking. In *Proceedings of the ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE)*, pages 349–361. ACM, November 2016. Acceptance rate: 27% (74 / 273).
25. Flávio Medeiros, Christian Kästner, Márcio Ribeiro, Rohit Gheyi, and Sven Apel. A Comparison of 10 Sampling Algorithms for Configurable Systems. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 643–654. ACM, May 2016. Acceptance rate: 19% (101 / 530).
24. Andreas Wölfl, Norbert Siegmund, Sven Apel, Harald Kosch, Johann Krautlager, and Guillermo Weber-Urbina. Generating Qualifiable Avionics Software: An Experience Report. In *Proceedings of the International Conference on Automated Software Engineering (ASE)*, pages 726–736. IEEE, November 2015. Acceptance rate: 21% (60 / 289).
23. Atri Sarkar, Jianmei Guo, Norbert Siegmund, Sven Apel, and Krzysztof Czarnecki. Cost-Efficient Sampling for Performance Prediction of Configurable Systems. In *Proceedings of the International Conference on Automated Software Engineering (ASE)*, pages 342–352. IEEE, November 2015. Acceptance rate: 21% (60 / 289).



tance rate: 21% (60 / 289).

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10. Sven Apel, Olaf Leßenich, and Christian Lengauer. Structured Merge with Auto-Tuning: Balancing Precision and Performance. In *Proceedings of the International Conference on Automated Software Engineering (ASE)*, pages 120–129. ACM, September 2012. Acceptance rate: 13% (21 / 167).
9. Norbert Siegmund, Sergiy Kolesnikov, Christian Kästner, Sven Apel, Don Batory, Marko Rosenmüller, and Gunter Saake. Predicting Performance via Automated Feature-Interaction Detection. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 167–177. IEEE, June 2012. Acceptance rate: 21% (87 / 408).
8. Janet Feigenspan, Christian Kästner, Jörg Liebig, Sven Apel, and Stefan Hanenberg. Measuring Programming Experience. In *Proceedings of the International Conference on Program Comprehension (ICPC)*, pages 73–82. IEEE, June 2012. Acceptance rate: 41% (21 / 51). **ICPC Most Influential Paper**

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7. Sven Apel, Jörg Liebig, Benjamin Brandl, Christian Lengauer, and Christian Kästner. Semistructured Merge: Rethinking Merge in Revision Control Systems. In *Proceedings of the European Software Engineering Conference and the ACM SIGSOFT International Symposium on the Foundations of Software Engineering (ESEC/FSE)*, pages 190–200. ACM, September 2011. Acceptance rate: 17% (34 / 203).
6. Sven Apel and Dirk Beyer. Feature Cohesion in Software Product Lines: An Exploratory Study. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 421–430. ACM, May 2011. Acceptance rate: 14% (62 / 441).
5. Jörg Liebig, Sven Apel, Christian Lengauer, Christian Kästner, and Michael Schulze. An Analysis of the Variability in Forty Preprocessor-Based Software Product Lines. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 105–114. ACM, May 2010. Acceptance rate: 14% (52 / 380).
4. Sven Apel, Christian Kästner, and Christian Lengauer. FeatureHouse: Language-Independent, Automated Software Composition. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 221–231. IEEE, May 2009. Acceptance rate: 12% (50 / 405).
3. Christian Kästner and Sven Apel. Type-checking Software Product Lines – A Formal Approach. In *Proceedings of the International Conference on Automated Software Engineering (ASE)*, pages 258–267. IEEE, September 2008. Acceptance rate: 12% (30 / 280).
2. Christian Kästner, Sven Apel, and Martin Kuhlemann. Granularity in Software Product Lines. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 311–320. ACM, May 2008. Acceptance rate: 15% (56 / 371). **SPLC Most Influential Paper Award 2018.**
1. Sven Apel, Thomas Leich, and Gunter Saake. Aspectual Mixin Layers: Aspects and Features in Concert. In *Proceedings of the International Conference on Software Engineering (ICSE)*, pages 122–131. ACM, May 2006. Acceptance rate: 9% (36 / 395).