Curriculum Vitae: Andreas Zeller

Born October 28, 1965, in Hanau, Germany
CISPA Helmholtz Center for Information Security and Saarland University, Saarbrücken, Germany
ACM Fellow · Nine Test of Time Awards · 26,000+ citations · h-index ≥ 70
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Education

1997 Ph.D. in Computer Science, TU Braunschweig (summa cum laude)
1991 Diploma in Computer Science, TU Darmstadt (passed with distinction)

Positions

2019–present Faculty, CISPA Helmholtz Center for Information Security, Germany
2003–present Full Professor, Computer Science, Saarland University, Germany
2001–2003 Associate Professor (C3), Computer Science, Saarland University, Germany
1999–2001 Post-Doc Researcher (C1), Computer Science, Passau University, Germany
1997–1999 Post-Doc Researcher (C1), Computer Science, TU Braunschweig, Germany
1991–1997 Scientific Assistant, Computer Science, TU Braunschweig, Germany

Guest researcher/lecturer at Microsoft Research, Redmond, USA (2011, 2009, 2005); ETH Zürich, Switzerland (2007); and University of Washington, USA (2005).

Career-Long Contribution Awards

2025 **ACM SIGSOFT Influential Educator Award** for "significant contributions and important innovations in automated software engineering education" (see "The Fuzzing Book" and "The Debugging Book")
2019 **IFIP Fellow** (IFIP's recognition of substantial and enduring contributions to the ICT industry)
2018 **ACM SIGSOFT Outstanding Research Award** (The highest research award by ACM SIGSOFT)
2010 **ACM Fellow** (ACM's most prestigious member grade recognizing the top 1% of members for their outstanding accomplishments) for "contributions to automated debugging and mining software archives," two fields I helped to shape.

Test of Time Awards

2025 **IEEE TSE 50th Anniversary: Most Influential Papers** for "Mining Software Histories to Guide Software Changes" (TSE 2005; with Thomas Zimmermann, Peter Weißgerber, and Stephan Diehl)
2025 **IEEE TSE 50th Anniversary: Most Influential Papers** for "Simplifying and Isolating Failure-Inducing Input" (TSE 2002; with Ralf Hildebrandt)
2023 **MSR 10-Year Most Influential Paper Award** for "The Impact of Tangled Code Changes" (MSR 2013; with Kim Herzig)
2021 **ICST 10-Year Most Influential Paper Award** for "Assessing Oracle Quality with Checked Coverage" (ICST 2011; with David Schuler)
2020 **ISSTA 10-Year Impact Paper Award** for "Mutation-Driven Generation of Unit Tests and Oracles" (ISSTA 2010; with Gordon Fraser)
2017 **MSR 10-Year Most Influential Paper Award** for "How Long Will It Take to Fix This Bug?" (MSR 2007; with Cathrin Weiß, Rahul Premraj, and Thomas Zimmermann)
2015 **MSR 10-Year Most Influential Paper Award** for "When do Changes induce Fixes?" (MSR 2005; with Jacek Śliwerski and Thomas Zimmermann)
2014 **ICSE 10-Year Most Influential Paper Award** for "Mining Software Histories to Guide Software Changes" (ICSE 2004; with Thomas Zimmermann, Peter Weißgerber, and Stephan Diehl)
2009 **ACM SIGSOFT 10-Year Impact Award** for "Yesterday, my program worked. Today, it does not. Why?" (ESEC 1999; single author).

Official Runner-Ups: "Locating Causes of Program Failures" (ICSE 2005; with Holger Cleve) and "Checking App Behavior Against App Descriptions" (ICSE 2014; with Alessandra Gorla, Ilaria Tavecchia, and Florian Gross).

Selected Grants

2023 **ERC Advanced Grant** (Europe's highest funding for individual researchers) of 2.5 million € for "Semantics of Software Systems (S3)"

2011 **ERC Advanced Grant** of 2.2 million € for "Specification Mining and Testing (SPECMATE)"

2011 **Google Focused Research Award** (750,000 US$) for "Test Amplification"

Supervision of Graduate Students and Postdoctoral Fellows

2001–present 18 Ph.D.s completed, 3 Ph.D.s to complete in 2024, 11 Ph.D.s currently supervised
12 Post-Docs completed, 2 Post-Docs currently associated, all CISPA and Saarland U

Teaching Activities

2021 Interactive textbook "The Debugging Book"
2019 Interactive textbook "The Fuzzing Book" (with Gopinath, Böhme, Fraser, Holler)
2018–present Course of studies "Entrepreneurial Cybersecurity" (Saarland Teaching Award 2020)
2012 Udacity Online course CM259 "Software Debugging" (commissioned by Udacity)
2005 Textbook "Why Programs Fail", Morgan Kaufmann Editors
1997–present Courses on Software Engineering, Introduction to Programming, Program Analysis, Software Testing, Security Testing, Automated Debugging.

Organization of Scientific Meetings

2022	**Program Chair**	ACM/IEEE International Conference on Software Engineering (ICSE 2022; co-chaired with Daniela Damian)
2020	**Program Chair**	IEEE International Conference on Software Testing and Verification (ICST 2020; co-chaired with Corina Păsăreanu)
2016	**General Chair**	IEEE European Symposium on Security and Privacy (EuroS&P 2016)
2016	**General Chair**	ACM International Symposium on Software Testing and Analysis (ISSTA 2016)
2013	**Program Chair**	ACM/IEEE International Conference on Automated Software Engineering (ASE 2013; co-chaired with Tevfik Bultan)

Co-Organizer of three Dagstuhl Seminars in the past ten years (2015, 2017, 2023).

Institutional Responsibilities

2016–2018 Elected member, Saarland University Senate
2008–2018 Scientific Vice-Coordinator, Saarbrücken Graduate School for Computer Science
2001–2018 Head of the Software Engineering Chair at Saarland University

Commissions of Trust

2018–present Steering Committee, International Conference on Software Engineering (ICSE)
2016–present Research Highlights Editorial Board, Communications of the ACM
2016–present Editorial Board, Journal of Software Testing, Verification and Reliability
2008–2023 Steering Committee, Int. Symposium on Software Testing and Analysis (ISSTA)
2011–2020 National DFG Proposal Review Panel for Computer Science, Elected Member
2013–2017 Editorial Board, IEEE Transactions on Software Engineering (TSE)
2009–2017 Editorial Board, Springer Journal on Empirical Software Engineering (ESEM)
2011–2016 Steering Committee, European Software Engineering Conference (ESEC)

Memberships in Scientific Societies

2024-present Academia Europaea (member)

Ten-Year Track Record: Andreas Zeller

Ten Representative Publications

1. D. Steinhöfel and **A. Zeller**. Input Invariants. In *Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE)*, 2022, pp. 583–594.
2. R. Gopinath, M. Mathis, and **A. Zeller**. Mining Input Grammars from Dynamic Control Flow. In *Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE)*, 2020.
3. R. Gopinath, A. Kampmann, N. Havrikov, E. Soremekun, and **A. Zeller**. Abstracting Failure-Inducing Inputs. In *ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA)*, 2020.
4. A. Kampmann, N. Havrikov, E. Soremekun, and **A. Zeller**. When does my Program do this? Learning Circumstances of Software Behavior. In *Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE)*, 2020.
5. E. Soremekun, E. Pavese, N. Havrikov, L. Grunske, and **A. Zeller**. "Inputs from Hell: Learning Input Distributions for Grammar-Based Test Generation." In *IEEE Transactions on Software Engineering (TSE)*, 2020.
6. B. Mathis, R. Gopinath, M. Mera, A. Kampmann, M. Höschele, and **A. Zeller**. Parser-Directed Fuzzing. In *ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)* 2019, pp. 548–560.
7. A. Gorla, I. Tavecchia, F. Gross, and **A. Zeller**. Checking App Behavior against App Descriptions. In *ACM/IEEE International Conference on Software Engineering (ICSE)*, 2014, pp. 1025–1035.
8. C. Holler, K. Herzig, and **A. Zeller**. Fuzzing with Code Fragments. In *USENIX Security Symposium*, 2012, pp. 38–48.
9. G. Fraser and **A. Zeller**. Mutation-driven generation of unit tests and oracles. *IEEE Transactions on Software Engineering (TSE)*, 2011, 38(2), pp. 278–292 and ISSTA 2010.
10. V. Dallmeier, N. Knopp, C. Mallon, G. Fraser, S. Hack, and **A. Zeller**. Automatically Generating Test Cases for Specification Mining. *IEEE Transactions on Software Engineering (TSE)*, 2011, 38(2), pp. 243–257.

Research Monographs, Chapters in Collective Volumes

1. **A. Zeller**. 2007. "Beautiful Debugging." In: Oram, Wilson (Eds.), *Beautiful Code: Leading Programmers Explain How They Think,* Chapter 28.
2. **A. Zeller**. 2009. *Why programs fail: A guide to systematic debugging.* Morgan Kaufmann Publishers (Second edition, 2009). Translations: Russian, Chinese, Japanese.
3. **A. Zeller** and D. Schuler 2009. "Seeding Bugs to Find Bugs: Beautiful Mutation Testing" In: Riley, Goucher (Eds.), *Beautiful Testing: Leading Professionals Reveal How They Improve Software.*
4. K. Herzig and **A. Zeller**. 2010. "Mining Your Own Evidence" In: Oram, Wilson (Eds.), *Making Software: What Really Works, and Why We Believe It,* Chapter 27.
5. K. Kuznetsov, A. Gorla, I. Tavecchia, F. Gross, and **A. Zeller**. 2015. "Mining Android Apps for Anomalies" In: Menzies et al. (eds.), *The Art and Science of Analyzing Software Data.*

Patents

- **A. Zeller** and K. Jamrozik. 2016. "Mining Sandboxes", European Patent WO 2016/131830 A1.
- N. Nagappan, T. Zimmermann, B. Murphy, and **A. Zeller**. 2016. "Predicting Defects in Code", US Patent 9378015.

Keynotes at International Conferences, Summer Schools

AST (2025) · RIO Argentinian Summer School on Informatics (2025) · NUS Singapore Fuzzing Summer School (2024) · **ESEC/FSE** (2022) · **FUZZING** (2022) · "Cyber in Nancy" Summer School, Nancy, France (2022) · **ASE** (2021) · **ISSTA** (2020) · **MOBILEsoft** (2020) · **ICSE** (2018) · **RV** (2017) · **MSR** (2017) · **ICST** (2017) · Halmstad Summer School on Software Testing, Halmstad, Sweden (2017) · **ICPC** (2015) · **ICSE** (2014)

Organization of International Conferences

- **ACM SIGSOFT/IEEE TCSE International Conference on Software Engineering (ICSE)** — *Program Co-Chair* (2022) · Program Board Member (2018, 2016) · Doctoral Symposium Chair (2012) · PC Member (2024, 2023, 2021, 2020, 2017, 2015, 2014, 2013) · Steering Committee Member (2018–)
- **ACM SIGSAC Computer and Communications Security (CCS)** — PC Member (2021, 2022)
- **ACM SIGPLAN Programming Language Design and Implementation (PLDI)** — PC Member (2021, 2017)
- **IEEE International Conference on Software Testing and Verification (ICST)** — *Program Co-Chair* (2020) · Steering Committee Member (2020–)
- **European Symposium on Security and Privacy (EuroS&P)** — *General Chair* (2016)
- **ACM International Conference on Software Testing and Analysis (ISSTA)** — *General Chair* (2016) · *Steering Committee Chair* (2016–2017) · PC Member (2024, 2022, 2020, 2018, 2013)
- **IEEE/ACM Conference on Automated Software Engineering (ASE)** — *Program Co-Chair* (2013) · PC Member (2017, 2014)
- **ACM SIGSOFT Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)** — Doctoral Symposium Chair (2025, 2017) · PC Member (2019, 2017, 2015, 2013) · Steering Committee Member (2009–2016)
- **Dagstuhl Seminars** — *Co-Organizer* ("Software Bug Detection: Challenges and Synergies", 2023 · "Testing and Verification of Compilers", 2017 · "Artifact Evaluation for Publications", 2015)

Major Contributions to the Early Careers of Excellent Researchers

Thomas Zimmermann (Senior Principal Researcher at Microsoft Research; Associate Professor at University of Calgary) did his Master thesis (2001) and Ph.D. thesis (2006) with me, pioneering the new research field of Mining Software Repositories. As ACM Fellow and elected president of ACM SIGSOFT, Thomas is now one of today's most influential Software Engineering researchers.

Gordon Fraser · **Marcel Böhme** · **Alessandra Gorla** · **Juan Pablo Galeotti** · **Rahul Gopinath** are former Post-Docs now occupying excellent positions—**Gordon Fraser** is full professor at Passau University; **Marcel Böhme** is junior faculty at the Max Planck Institute for Security and Privacy in Bochum; **Alessandra Gorla** is assistant researcher professor at the IMDEA Software Institute in Madrid; **Juan Pablo Galeotti** is professor at the University of Buenos Aires; and **Rahul Gopinath** is assistant professor in Sydney.

Examples of Leadership in Industrial Innovation or Design

Testfabrik AG, founded in 2011, generates and runs tests for Web applications and mobile apps. After attracting more than 1 million € in startup funding and awards as co-founder, Testfabrik currently has 30+ full-time employees; I serve as chair of the supervisory board.

InputLab, kicked off in 2024, generates and sells test data for thousands of highly complex input formats. As a CISPA spin-off, it has attracted 800k€ funding in its first year; I am the initiator and co-founder.