

Curriculum Vitae - Erika Ábrahám

Contact information

Name	Erika Ábrahám
Title	Univ.-Prof. Dr. Dr. h.c.
Affiliation	RWTH Aachen University Informatik 2, LuFG Theory of Hybrid Systems 52056 Aachen, Germany
Phone	+49 241 80-21242
Email	abraham@informatik.rwth-aachen.de
Home page	http://ths.rwth-aachen.de/
ORCID ID:	https://orcid.org/0000-0002-5647-6134
ResearcherID:	G-5259-2012
Scopus Author ID:	8730197200

Personal details

Date and place of birth	November 9, 1970, Szeged, Hungary
Nationality	Hungarian and German
Sex	female
Family status	unmarried, two children

Education

Jan 2005	Ph.D. received from the University of Leiden, the Netherlands
Promotors:	Prof. W.-P. de Roeper and Prof. J. N. Kok
Co-Promotors:	Prof. F. S. de Boer and Prof. M. Steffen
Feb 1999	Diploma received from the Christian-Albrechts-University of Kiel, Germany
Major/Minor:	Computer Science / Physics
Average mark:	1.0 (distinguishing award)

Positions

2013-today	Full professor, RWTH Aachen University, Germany Head of the research group “Theory of Hybrid Systems”
2008-2013	Junior professor, RWTH Aachen University, Germany Head of the junior research group “Theory of Hybrid Systems”
2007-2008	Postdoctoral researcher, Jülich Research Centre, Germany
2005-2007	Postdoctoral researcher, Albert-Ludwigs-University Freiburg, Germany
1999-2005	Ph.D. student, Christian-Albrechts-University Kiel, Germany

Ten selected publications

- Satisfiability checking

Jasper Nalbach, Erika Ábrahám, Philippe Specht, Christopher W. Brown, James H. Davenport and Matthew England: *Levelwise construction of a single cylindrical algebraic cell*. Journal of Symbolic Computation 123:102288, 2024. <https://doi.org/10.1016/j.jsc.2023.102288>

Erika Ábrahám, Gereon Kremer, James Davenport and Matthew England: *Deciding the consistency of non-linear real arithmetic constraints with a conflict driven search using cylindrical algebraic coverings*. Journal of Logical and Algebraic Methods in Programming 119:100633, Elsevier, 2021. <https://doi.org/10.1016/j.jlamp.2020.100633>

Erika Ábrahám: *Building bridges between symbolic computation and satisfiability checking*. Proc. of the 2015 ACM on Int. Symp. on Symbolic and Algebraic Computation (ISSAC'15), pages 1–6, ACM, 2015. <https://doi.org/10.1145/2755996.2756636>.

- Hybrid systems

Stefan Schupp, Erika Ábrahám, Md Tawhid Bin Waez, Thomas Rambow and Zeng Qiu: On the applicability of hybrid systems safety verification tools from the automotive perspective. International Journal on Software Tools for Technology Transfer 26(1): 49-78 (2024). <https://doi.org/10.1007/s10009-023-00707-0>

Stefan Schupp, Erika Ábrahám, Ibtissem Ben Makhoul and Stefan Kowalewski: *HyPro: A C++ library for state set representations for hybrid systems reachability analysis*. Proc. of the 9th NASA Formal Methods Symp. (NFM'17), Volume 10227 of LNCS, pages 288–294, Springer, 2017. https://doi.org/10.1007/978-3-642-39799-8_18.

Xin Chen, Erika Ábrahám and Sriram Sankaranarayanan: *Flow*: An analyzer for non-linear hybrid systems*. Proc. of the 25th Int. Conf. on Computer Aided Verification (CAV'13), Volume 8044 of LNCS, pages 258–263, Springer, 2013. https://doi.org/10.1007/978-3-642-39799-8_18.

- Probabilistic systems

Christian Dehnert, Sebastian Junges, Nils Jansen, Florian Corzilius, Matthias Volk, Harold Bruintjes, Joost-Pieter Katoen and Erika Ábrahám: *PROPhESY: A probabilistic parameter synthesis tool*. Proc. of the 27th Int. Conf. on Computer Aided Verification (CAV'15), Volume 9206 of LNCS, pages 214–231, Springer, 2015. https://doi.org/10.1007/978-3-319-21690-4_13.

- Green energy

Pascal Richter, David Laukamp, Levin Gerdes, Martin Frank and Erika Ábrahám: *HelioStat field layout optimization with evolutionary algorithms*. Proc. of the 2nd Global Conf. on Artificial Intelligence (GCAI'16), Volume 41 of EPiC Series in Computing, pages 240-252, EasyChair, 2016. <https://doi.org/10.29007/7p6t>

- Supercomputing

Markus Geimer, Felix Wolf, Brian J. N. Wylie, Erika Ábrahám, Daniel Becker and Bernd Mohr: *The Scalasca performance toolset architecture*. Concurrency and Computation: Practice and Experience 22(6):702–719, 2010. <https://doi.org/10.1002/cpe.1556>.

- Deductive proof systems

Erika Ábrahám, Frank S. de Boer, Willem-Paul de Roever and Martin Steffen: *An assertion-based proof system for multithreaded Java*. Theoretical Computer Science 331(2-3):251–290, 2005. <https://doi.org/10.1016/j.tcs.2004.09.019>.

Project acquisition – running projects		
AIRobo 2023-2026	<i>Artificial Intelligence based Robotics</i>	EU Erasmus+ KA220 Cooperation Partnerships for Higher Education
SMT-ART 2024-2026	<i>SMT Arithmetic Reasoning Techniques</i>	German Research Foundation (DFG)
RealySt 2022-2026	<i>Reachability Analysis for Stochastic Hybrid Systems</i>	German Research Foundation (DFG)
UnRAVeL 2017-2026	<i>Uncertainty and Randomness in Algorithms, Verification and Logic</i>	Research Training Group, German Research Foundation (DFG)
Project acquisition – completed projects		
EuroProofNet 2021-2025	European Research Network on Formal Proofs (COST Action CA20111, Management Committee member)	
Sim4Dialog 2022-2025	<i>Simulationstool für den regionalen Dialog zum Ausbau erneuerbarer Energien</i>	IN4climate.NRW
REMARO 2020-2025	<i>Reliable AI for Marine Robotics</i>	EU Horizon2020 MSCA-ITN-ETN Marie-Sklodowska-Curie Innovative Training Network
EUGAIN 2020-2024	European Network for Gender Balance in Informatics (COST Action CA19122, Management Committee Member)	
Industrial project 2020-2022	<i>Digitalization and Energy Optimization in Buildings using Artificial Intelligence</i>	BMW/DEOKI research project with the MeteoViva company
ARC 2020-2022	<i>Automated Reasoning in the Class</i>	EU Erasmus+ project (KA203 - Strategic Partnerships for Higher Education)
Industrial project 2018-2020	<i>Safety Verification for Mixed Discrete-Continuous Automotive Systems</i>	Research project with Ford
CAP 2015-2018	<i>Composition, Abstraction, and Parametrization for the Verification of Probabilistic and Hybrid Systems</i>	CDZ Sino-German cooperation project
HyPro 2013-2016, 2017-2018	<i>A Toolbox for the Reachability Analysis of Hybrid Systems using Geometric Approximations</i>	German Research Foundation (DFG), coordinator
Industrial project 2016-2018	<i>Simulink Formal Verification</i>	Industrial research project with Ford
Industrial project 2018	<i>SMT Solving for Configuration Management</i>	Industrial research project with Siemens
Industrial project 2018	<i>SMT Solving for Productline Optimisation</i>	Research project with Bosch
SC ² 2016-2018	<i>Satisfiability Checking and Symbolic Computation – Uniting Two Communities to Solve Real Problems</i> H2020 FETOPEN CSA	
SMT4ROB 2016-2017	<i>Optimizing the Performance of Robot Fleets in Production Logistics Scenarios Using SMT</i>	RWTH ICT Funds

SMT4ABS 2015-2016	<i>Combining SMT-Solving with Type Checking for Real-Time ABS Programs</i> (German project coordinator) Norwegian-German DAAD ppp project
OASys 2012-2016	<i>Online Algorithms for Optimal Control of Hybrid Propulsion Systems</i> (project coordinator) German Research Foundation (DFG), coordinator
AlgoSyn 2011-2015	<i>Algorithmic Synthesis of Reactive and Discrete-Continuous Systems</i> Research Training Group, German Research Foundation (DFG)
2015-2015	<i>Modeling and Optimisation of Offshore Wind Farms</i> RWTH Seed Funds
ROCKS 2009-2013	<i>Rigorous Dependability Analysis using Model Checking Techniques for Stochastic Systems</i> (German site coordinator) Dutch-German NWO-DFG bilateral cooperation program, German coordinator
CeBUG 2010-2013	<i>Counterexample Generation for Stochastic Systems using Bounded Model Checking</i> German Research Foundation (DFG), coordinator
HySmart 2010-2011	<i>Hybrid Systems Modeling and Analysis with Rewriting Techniques</i> (German project coordinator) Norwegian-German DAAD ppp project

Awards, patents, spin-offs

Best Paper Award	Conference on Automated Deduction (CADE-30)
Best Paper Award	QEST (International Conference on Quantitative Evaluation of SysTems) + FORMATS (International Conference on Formal Modeling and Analysis of Timed Systems) Joint Conference (QEST+FORMATS'25)
Doctor Honoris Causa Scientiarum (Dr. h.c.)	received from the West University of Timișoara, Romania
Teaching Award	of the Computer Science Department of RWTH Aachen University, June 2024
Brigitte-Gilles Award	from RWTH Aachen University, for the development and execution of a program to improve gender balance in computer science
Guest Professor	at TU Wien, Austria, March 2020
First place	SMT Competition 2024, 2025 (solving real algebraic formulas and validating their models)
First place	SMT Competition 2018, 2019, 2020 (solving quantifier-free mixed real algebraic formulas)
First place	Planning and Execution Competition for Logistics Robots in Simulation 2018
Best paper award	CSI Int. Symp. on Computer Science and Software Engineering (CSSE'11)
Best presentation award	Int. Conf. on Engineering of Complex Computer Systems (ICECCS'01)
Distinguishing award	for Diploma thesis, Christian-Albrechts-University of Kiel, 1999
Patents	Method and system for controlling loads in a building (EP4145243A1) Steuerung einer Versorgungstechnik eines Gebäudes mittels eines neuronalen Netzwerks (RWTH-AZ 2567)
Spin-off	AixRays: Simulation and optimization solutions for central receiver systems

Invited talks and invited tutorials

1. *Theory and Applications of Satisfiability Modulo Theories (SMT) Solving*, 23rd Int. Colloquium on Theoretical Aspects of Computing (ICTAC'26), Bariloche, Argentina, 11/26
2. *AI-based Control for Underwater Robotics*, ConVeY Workshop, Turin, Italy, 04/26
3. *Understanding and Using Satisfiability Modulo Theories (SMT) Solving*, FACAS+MISSION Workshop, Villa Carlos Paz, Argentina, 03/26
4. *Formal Methods for Probabilistic Systems*, Dagstuhl Seminar “Software Contracts Meet System Contracts”, Dagstuhl, Germany, 01/26
5. *Reachability Analysis Techniques for Hybrid Systems*, GI-Dagstuhl Seminar “Tools for Reachability Analysis of Stochastic Hybrid Systems”, Dagstuhl, Germany, 12/25
6. *On the Idea of Exploration-Guided Satisfiability Checking*, Digital Industry Center Seminar, Trento, Italy, 09/25
7. *The CEGAR Idea in SMT Solving*, Keio University, Keio, Japan, 09/25
8. *The Art of SMT Solving*, Marktoberdorf Summer School, Marktoberdorf, Germany, 08/25
9. *The Certification Problem for Real Algebra*, Dagstuhl Seminar “Certifying Algorithms for Automated Reasoning”, Dagstuhl, Germany, 06/25
10. *Formal Methods for Self-Explaining Digital Control*, Opening Symposium of the Research Training Group CAUSE, Hamburg, Germany, 06/25
11. *Understanding and Using SAT and SMT Solvers*, Menlo College Summer School on Formal Techniques, USA, 05/25
12. *SMT: Something you Must Try*, UnRAVeL Talk Series “Highlights of UnRAVeL - Knitting Together Awesome Research”, Aachen, Germany, 04/25
13. *Gender und Diversität in der Informatik - Eine kurze Statusmeldung*, Plenarversammlung des Fakultätentag Informatik, RWTH Aachen University, Aachen, Germany, 11/2024
14. *The Art of SMT Solving*, Madrid Institute for Advanced Studies in Software Development Technologies (IMDEA), Spain, 10/2024
15. *The Art of SMT Solving*, 36th International Conference on Computer Aided Verification (CAV'24), 07/2024
16. *On the Idea of Exploration-guided Satisfiability Checking*, International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR-25), 05/2024
17. *From Student to Professional: Challenges and Opportunities*, Cyber-Physical Systems and Internet-of-Things Week, 05/2024
18. *Relating Stochastic Hybrid Petri Nets and Stochastic Hybrid Automata*, UnRAVeL Talk Series “New Ideas! - Future Research and Open Problems”, 04/24
19. *Research on the Theory of Hybrid Systems at RWTH Aachen University*, University of West University of Timisoara, 12/2023
20. *SMT: Something you Must Try*, 18th International Conference on integrated Formal Methods (iFM'23), 11/2023
21. *SMT: Something you Must Try*, Eindhoven University of Technology, 11/2023
22. *SMT Solving*, Shonan Seminar 178, 10/2023
23. *The Story of Undecidability*, Guest lecture at Keio University, 10/2023

24. *Seven Years of SC-Square*, 25th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC'23), 09/2023
25. *The Theory of Hybrid Systems*, Remaro PhD School, 09/2023
26. *Building Bridges between Symbolic Computation and Satisfiability Checking*, UnRAVeL Talk Series "Biggest Milestones - Research at Its Peak", 04/2023
27. *Automated Exercise Generation for Satisfiability Checking*, Formal Methods Teaching Workshop (FMTea'23), 03/2023
28. *I completed my Master! — And now? PhD as a career path for women in CS*, Interdisciplinary Symposium for Women in STEM Fields (ISINA'23), 03/2023
29. *Automated Exercise Generation for Satisfiability Checking*, Friedrich-Alexander-Universität Erlangen-Nürnberg, 03/2023
30. *Probabilistic Hyperproperties*, Lorentz Seminar on New Challenges in Programming Language Semantics, 11/2022
31. *SMT solving for Arithmetic Theories*, Conference on Intelligent Computer Mathematics (CICM'22), 09/2022
32. *Recent Advances for Hybrid Systems Verification with HyPro*, International Workshop on Numerical Software Verification (NSV'22), 08/2022
33. *Probabilistic Hyperproperties*, Workshop on Verification of Probabilistic Programs (VeriProP'22), 08/2022
34. *SMT Solving: Historical Review and New Developments*, Computability in Europe (CiE'22), 07/2022
35. *Recent Advances for Hybrid Systems Verification with HyPro*, International Workshop on Formal Engineering of Cyber-Physical Systems (FE-CPS@TASE'22), 07/2022
36. *Automatic Exercise Generation for Satisfiability Checking*, Formal Methods Europe (FME) Teaching Tutorials 07/2022
37. *Automatic Exercise Generation for Satisfiability Checking*, Training Event on Automated Reasoning in the Class (ARC), 07/2022
38. *SMT Solving: Past, Present and Future*, International Symposium on Theoretical Aspects of Software Engineering (TASE'22), 07/2022
39. *The Challenge of Compositionality for Stochastic Hybrid Systems*, UnRAVeL Research Training Group at RWTH Aachen University, 05/2022
40. *Delay Propagation in Railway Networks*, Workshop on Rigorous Dependability Analysis using Model Checking Techniques for Stochastic Systems (ROCKS'22), 05/2022
41. *How my Hobby Turned into being my Job*, Mentoring Workshop at ETAPS 2022, 04/2022
42. *Analysing Hybrid Systems with HyPro*, USC CCI-MHI Cyber-Physical Systems Seminar, Aarhus University, 11/2021
43. *Inspiration Talk*, Doctoral Symposium at the International Symposium on Formal Methods (PhD@FM'21), 11/2021
44. *Frauenmangel in technischen Fächern - wieso eigentlich?*, Days of Diversity, RWTH Aachen University, 11/2021
45. *SMT Solving: Past, Present and Future*, Informatics Europe Webinar, 10/2021
46. *SMT-based Planning - Some recent developments*, Workshop on Reliable AI for Marine Robotics: Challenges and Opportunities (REMARO@IROS'21), 10/2021
47. *SMT Solving: Past, Present and Future*, NASA Formal Methods Symp. (NFM'21), 05/2021

48. *Symbolic Computation Techniques in SMT Solving: Mathematical Beauty meets Efficient Heuristics*, Simons Institute at Berkeley, Seminar on SAT/SMT for Math and Computer Algebra Systems, 04/2021
49. *Reachability Analysis Techniques for Hybrid Systems*, European Joint Conferences on Theory and Practice of Software (ETAPS'21), 03/2021
50. *Abstract Domains in SMT Solving for Real Algebra*, Int. Workshop on Numerical and Symbolic Abstract Domains (NSAD'20), 11/2020
51. *Probabilistic Hyperproperties*, Int. Symp. on Games, Automata, Logics, and Formal Verification (GandALF'20), 09/2020
52. *Solving Real-Algebraic Formulas wit SMT-RAT*, Int. Congress of Mathematical Software (ICMS'20), Braunschweig, Germany, 07/2020
53. *The Power of Satisfiability Checking*, TU Wien, Vienna, Austria, 03/2020
54. *Women in Computer Science*, Women in Computability at CiE'19, 07/2019
55. *Reachability Analysis Techniques for Hybrid Systems*, Summer School on Formal Methods for Cyber-Physical Systems, Verona, Italy, 06/2019
56. *Hybrid Systems Reachability Analysis*, Open Problems in Concurrency Theory (IFIP WG 1.8 at POPL'19), Cascais, Portugal, 01/2019
57. *Formal Verification of Automotive Simulink Controller Models: Empirical Technical Challenges, Evaluation and Recommendations*, 7th Int. Workshop on Cross-layer Resiliency (IWCR'19), Stuttgart, Germany, 07/2019.
58. *Women in Computer Science: Do We Still Need Equality Measures?*, Computing Is Too Important to Be Left to Men, Vienna, Austria, 12/2019.
59. *SMT Solving: Matematikai szépség és informatikai hatékonyság*, Debreceni ADA Konferencia (ADA'18), Debrecen, Hungary, 11/2018.
60. *Symbolic Computation Techniques in SMT Solving: Mathematical Beauty meets Efficient Heuristics*, 30th Nordic Workshop on Programming Theory (NWPT'18), Oslo, Norway, 10/2018.
61. *Symbolic Computation Techniques in SMT Solving: Mathematical Beauty meets Efficient Heuristics*, 9th Int. Joint Conf. on Automated Reasoning (IJCAR'18), Oxford, UK, 07/2018
62. *Old-established Methods in a New Look: How HyPro Speeds up Reachability Computations for Hybrid Systems*, IFAC Conf. on Analysis and Design of Hybrid System (ADHS'18), Oxford, UK, 07/2018
63. *Reachability Analysis Techniques for Hybrid Systems*, Summer School on Cyber-Physical Systems (CPS'18), Halmstad, Sweden, 06/2018
64. *SMT Solving for AI Planning: Theory, Tools and Applications*, 28th Int. Conf. on Automated Planning and Scheduling (ICAPS'18), Delft, the Netherlands, 06/2018
65. *Symbolic Computation Techniques in SMT Solving: Mathematical Beauty meets Efficient Heuristics*, FBK, Trento, Italy, 05/2018
66. *Frauen in der Informatik: Brauchen wir noch Gleichstellung?*, Gender x Informatik, Chemnitz, Germany, 05/2018
67. *The Informatics Europe Working Group Women in Informatics Research and Education*, Gender Action Webinar, 03/2018
68. *Symbolic Computation Techniques in SMT Solving*, Evening Seminar of the London Mathematical Society and the British Computer Society, London, UK, 11/2017
69. *SMT Solving for Real Algebra*, Int. Conf. on Mathematics and Informatics (MathInfo'17), Târgu Mureş/Marosvásárhely, Romania, 09/2017

70. *SMT Solving for Arithmetic Theories: Theory and Tool Support*, 19th Int. Symp. on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC'17), Timisoara, Romania, 09/2017
71. *Techniques and Tools for Hybrid Systems Reachability Analysis*, Int. Workshop on Formal Methods for Rigorous Systems Engineering of Cyber-Physical Systems (RISE4CPS), Heidelberg, Germany, 07/2017
72. *Divide and Conquer: Variable Set Separation in Hybrid Systems Reachability Analysis*, 15th Int. Workshop on Quantitative Aspects of Programming Languages and Systems (QAPL'17), Uppsala, Sweden, 04/2017
73. *Exploiting Symbolic Computation Techniques in SAT-Modulo-Theories Solving*, University of Waterloo, Waterloo, Canada, 03/2017
74. *Symbolic Computation Techniques in Satisfiability Checking*, Johannes Kepler University, RISC, Linz, Austria, 11/2016
75. *Combining Static and Runtime Methods to Achieve Safe Standing-Up for Humanoid Robots*, 6th Int. Symp. on Leveraging Applications of Formal Methods, Verification and Validation (ISoLA'16), Track: Static and Runtime Verification: Competitors or Friends?, Crete, Greece, 10/2016
76. *The Power of Satisfiability Checking*, European Computer Science Summit (ECSS'16), Budapest, Hungary, 10/2016
77. *Computation Techniques in SAT-Modulo-Theories Solving*, University of Kassel, Kassel, Germany, 10/2016
78. *Symbolic Computation Techniques in Satisfiability Checking*, 18th Symp. of Symbolic and Numeric Algorithms for Scientific Computing (SYNASC'16), Timisoara, Romania, 09/2016
79. *Satisfiability Checking: Theory and Applications*, 14th Int. Conf. on Software Engineering and Formal Methods (SEFM'16), Vienna, Austria, 07/2016
80. *SMT Solving for Non-Linear Arithmetic Theories*, IST Austria, Vienna, Austria, 05/2016
81. *Building Bridges between Symbolic Computation and Satisfiability Checking*, Int. Symp. of Symbolic and Algebraic Computation (ISSAC'15), Bath, UK, 07/2015
82. *A Greedy Approach for the Efficient Repair of Stochastic Controller Models*, Abstraction and Synthesis of Correct-by-Construction Robotics Software: Reuniting Formal Methods with Model-Driven Software Engineering (AbSynth'15), Workshop at Robotics Science and Systems (RSS'15), Rome, Italy, 07/2015
83. *Model Repair for Probabilistic Controller*, NII Shonan Meeting "Static Analysis meets Runtime Verification", Shonan Village Center, Japan, 03/2015
84. *Current Challenges in the Verification of Hybrid Systems*, 5th Int. Workshop on Cyber Physical Systems (CyPhy'16), Amsterdam, the Netherlands, 10/2015
85. *Modeling and Verification of Hybrid Systems*, University of Genoa, Genoa, Italy, 10/2015
86. *Some Thoughts about Formal Methods in Robotics*, University of Genoa, Genoa, Italy, 10/2015
87. *SMT Solving for Real Arithmetic: What are the Challenges?*, CDZ Workshop "Computation and Reasoning with Constraints", Beijing, China, 11/2014
88. *Probabilistic Model Checking and Counterexample Generation*, IFIP WG2.2 Meeting on "Formal Description of Programming Concepts", Munich, Germany, 09/2014
89. *Reachability Analysis of Hybrid Systems*, INRIA, France, 06/2014
90. *Modeling and Analyzing Probabilistic Systems*, NVTI Theory Day, Utrecht, the Netherlands, 05/2014
91. *Reachability Analysis for Hybrid Systems*, Workshop on Computable Analysis and Rigorous Numerics, Maastricht, the Netherlands, 12/2013

92. *Formal Methods for Hybrid Systems*, University of Passau, Passau, Germany, 11/2013
93. *Modeling and Analysis of Hybrid Systems*, Formal Description of Programming Concepts (IFIP Working Group 2.2), Lisbon, Portugal, 09/2013
94. *Reachability Analysis for Hybrid Systems*, CDZ Workshop on “Probabilistic and Hybrid System Verification”, Beijing, China, 09/2013
95. *Computing Counterexamples for Discrete-Time Probabilistic Systems*, ROCKS Autumn School “Rigorous Dependability Analysis for Stochastic Systems”, Vahrn, Italy, 10/2012
96. *Hybrid Systems*, University of Twente, Enschede, the Netherlands, 08/2012
97. *SMT Solving Mechanisms for Non-Linear Real Arithmetic*, Albert-Ludwigs-University, Freiburg, Germany, 05/2012
98. *Heap-abstraction for a Multi-Threaded Object-Oriented Calculus*, Workshop on Automata and Logic for Data Manipulating Programs (LIAFA’10), Paris, France, 12/2010
99. *SMT-Solving for the Reals*, University of Karlsruhe, Germany, 09/2010
100. *SMT-Solving in the Verification and Synthesis of Hybrid Systems*, University of Freiburg, Germany, 07/2010
101. *A Lazy SMT-Solver for a Non-Linear Subset of Real Algebra*, Dagstuhl Seminar “Verification over Discrete-Continuous Boundaries”, Dagstuhl, Germany, 07/2010
102. *SMT-Solving for the First-Order Theory of the Reals*, Dagstuhl Seminar “Algorithms and Applications for the Next Generation of SAT Solvers”, Dagstuhl, Germany, 11/2009
103. *SAT-Modulo-Theories Solving in the Context of Bounded Model Checking*, CWI Amsterdam, Amsterdam, the Netherlands, 06/2009
104. *SMT-solving in the Context of Bounded Model Checking*, University of Oslo, Oslo, Norway, 04/2009
105. *Heap-Abstraction for an Object-Oriented Calculus with Thread Classes*, Computability in Europe (CiE’06), Swansea, Great Britain, 07/2006
106. *A Proof System for Exception Handling in Multithreaded Java*, Christian-Albrechts-University, Kiel, Germany, 05/2004
107. *A Hoare Logic for Monitors in Java*, ICASE - NASA LaRC, 11/2002
108. *Verification for Java’s Monitor Concept*, Int. Symp. on Formal Methods for Components and Objects (FMCO’02), Leiden, the Netherlands, 11/2002

Organisation of scientific events (since 2014)

- **Co-organiser** Dagstuhl Seminar *Automated Reasoning in Arithmetic: Logic, Algorithms, Software*, Dagstuhl, Germany, 10/2026
- **Co-organiser** Dagstuhl Seminar *Integrated Rigorous Analysis in Cyber-Physical Systems Engineering*, Dagstuhl, Germany, 01/2023
- **Co-organiser** IPAM Workshop *Machine Assisted Proofs*, Los Angeles, USA, 02/2023
- **Co-organiser** Dagstuhl Seminar *New Perspectives in Symbolic Computation and Satisfiability Checking*, Dagstuhl, Germany, 02/2022
- **Co-organiser** 4th Workshop *Women in Informatics Research and Education*, online, 10/2020
- **Co-organiser** 2nd Workshop *Women in Informatics Research and Education*, Rome, Italy, 10/2018

- **Co-organiser** Summer School *Satisfiability Checking and Symbolic Computation*, Saarbrücken, Germany, 07-08/2017
- **Co-organiser** 1st Workshop *Women in Informatics Research and Education*, Gothenburgh, Sweden, 10/2017
- **Co-organiser** Dagstuhl Seminar *Computer-Assisted Engineering for Robotics and Autonomous Systems*, Dagstuhl, Germany, 02/2017
- **Co-organiser** *Festschrift and Celebration Event for Frank de Boer's 60th Birthday*, Eindhoven, the Netherlands, 04/2016
- **Co-organiser** GI-Dagstuhl Seminar *Formal Evaluation of Critical Infrastructures*, Dagstuhl, Germany, 12/2015
- **Co-organiser** Dagstuhl Seminar *Symbolic Computation and Satisfiability Checking*, Dagstuhl, Germany, 11/2015
- **Co-organiser** Dagstuhl Seminar *Randomized Timed and Hybrid Models for Critical Infrastructures*, Dagstuhl, Germany, 01/2014 (41 participants)
- **Organiser** of several workshops (see section *Program Committee co-chair* below)

Scientific society memberships

- Since 2009: Board Member of the *Aachen Group of the German Association of University Professors and Lecturers (DHV)*
- Since 2009: Member of the *German Informatics Society (GI)*
- Since 2013: Member of the *Computability in Europe (CiE) Association*

Steering Committee memberships

- **iFS** (starting 2027): Int. Conf. on Foundations and Formal Methods for Software and Systems
- **RV** (2024-2025): Int. Conf. on Runtime Verification
- **QEST** (2022-2025): Int. Conf. on Quantitative Evaluation of SysTems
- **SMT** (2018-2022): Int. Workshop on Satisfiability Modulo Theories
- **GE@ICSE** (2018-2019): Workshop on Gender Equality in Software Engineering
- **SNR** (2017-2022): Int. Workshop on Symbolic and Numerical Methods for Reachability Analysis
- **iFM** (2016-2026): Int. Conf. on integrated Formal Methods
- **SC²** (2016-2019): Int. Workshop on Satisfiability Checking and Symbolic Computation
- **FORTE** (2014-2017): IFIP Int. Conf. on Formal Techniques for Distributed Objects, Components and Systems
- **ETAPS** (2013-2014): European Joint Conferences on Theory and Practice of Software

Program Committee co-chair

1. Int. Conf. on Foundations and Formal Methods for Software and Systems (**iFS'27**)
2. Int. Conf. on Runtime Verification (**RV'24**)

3. ACM Int. Conf. on Hybrid Systems: Computation and Control (**HSCC'24**)
4. Int. Colloquium on Theoretical Aspects of Computing (**ICTAC'23**)
5. Int. Workshop on Satisfiability Checking and Symbolic Computation (**SC²'23**)
6. Int. Conf. on Fundamentals of Software Engineering (**FSEN'23**)
7. Software Verification and Testing Track at the ACM Symp. on Applied Computing (**SVT-SAC'22**)
8. Conf. on Quantitative Evaluation of SysTems (**QEST'22**)
9. Software Verification and Testing Track at the ACM Symp. on Applied Computing (**SVT-SAC'21**)
10. Industry Day at Formal Methods (**Industry@FM'21**)
11. Session on Real Algebraic Geometry at the Int. Congress on Mathematical Software (**ICMS'20**)
12. Int. Symp. on Symbolic and Numeric Algorithms for Scientific Computing (**SYNASC'18**)
13. Pre-Summit Workshop for Deans and Department Heads at the European Computer Science Summit (**ECSS'18**)
14. PhD Symp. at iFM'18 on Formal Methods: Algorithms, Tools and Applications (**PhD-iFM'18**)
15. Workshop on Gender Equality in Software Engineering (**GE@ICSE'18**)
16. PhD Symp. at iFM'17 on Formal Methods: Algorithms, Tools and Applications (**PhD-iFM'17**)
17. Int. Workshop on Symbolic and Numerical Methods for Reachability Analysis (**SNR'17**)
18. Int. Conf. on integrated Formal Methods (**iFM'16**)
19. Int. Workshop on Satisfiability Checking and Symbolic Computation (**SC²'16**)
20. Int. Workshop on Symbolic and Numerical Methods for Reachability Analysis (**SNR'16**)
21. IFIP Int. Conf. on Formal Techniques for Distributed Objects, Components and Systems (**FORTE'14**)
22. Int. Conf. on Tools and Algorithms for the Construction and Analysis of Systems (**TACAS'14**)

Program Committee member

1. Analysis and Design of Hybrid Systems (**ADHS'27**)
2. Ada-Europe Int. Conf. on Reliable Software Technologies (**AEiC'26**)
3. Int. Symp. on Automated Technology for Verification and Analysis (**ATVA'26**)
4. Int. Conf. on Computer Aided Verification (**CAV'26**)
5. Design, Automation and Test in Europe Conference (**DATE'26**)
6. ACM/IEEE Int. Conf. on Embedded Software (**EMSOFT'26**)
7. Int. Conf. on Fundamental Approaches to Software Engineering (**FASE'26**)
8. Int. Symp. on Formal Methods (**FM'26**)
9. Int. Conf. on Formal Methods in Computer-Aided Design (**FMCAD'26**)
10. Formal Methods Teaching Workshop (**FMTea'26**)
11. Joint Conf. Hybrid Systems: Computation and Control + Int. Conf. on Cyber-Physical Systems (**HSCC/ICCPS'26**)
12. Int. Conf. on Applied Informatics (**ICAI'26**)
13. Int. Symp. on Symbolic and Algebraic Computation (**ISSAC'26**)

14. Joint Int. Conf. on Quantitative Formal Modelling, Analysis and Evaluation of Systems (**QEST+FORMATS'26**)
15. NASA Formal Methods Symp. (**NFM'26**)
16. Int. Conf. on Runtime Verification (**RV'26**)
17. Int. Workshop on Satisfiability Modulo Theories (**SMT'26**)
18. Int. Conf. on Tools and Algorithms for the Construction and Analysis of Systems (**TACAS'26**)
19. Int. Conf. on Automated Deduction (**CADE-30**)
20. Int. Conf. on Computer Aided Verification (**CAV'25**)
21. Int. Conf. on Fundamentals of Software Engineering (**FSEN'25**)
22. ACM/IEEE Int. Conf. on Embedded Software (**EMSOFT'25**)
23. Int. Conf. on Formal Methods in Computer-Aided Design (**FMCAD'25**)
24. Int. Conf. on Formal Methods and Foundations of Artificial Intelligence (**FMF-AI'25**)
25. Int. Conf. on Formal Methods for Industrial Critical Systems (**FMICS'25**)
26. Int. Symp. on Symbolic and Algebraic Computation (**ISSAC'25**)
27. Int. Symp. on NASA Formal Methods (**NFM'25**)
28. Int. Conf. on Runtime Verification (**RV'25**)
29. Int. Conf. on Theory and Applications of Satisfiability Testing (**SAT'25**)
30. Int. Conf. on Tools and Algorithms for the Construction and Analysis of Systems (**TACAS'25**)
31. Int. Workshop on Verification of Scientific Software (**VSS'25**)
32. IFAC Conf. on Analysis and Design of Hybrid Systems (**ADHS'24**)
33. Int. Symp. on Automated Technology for Verification and Analysis (**ATVA'24**)
34. Int. Conf. on Computer Aided Verification (**CAV'24**)
35. Design, Automation and Test in Europe Conference (**DATE'24**)
36. Int. Conf. on Fundamental Approaches to Software Engineering (**FASE'24**)
37. Int. Symp. on Formal Methods (**FM'24**)
38. Formal Methods Teaching Workshop (**FMTea'24**)
39. Int. Colloquium on Theoretical Aspects of Computing (**ICTAC'24**)
40. PhD Symposium at integrated Formal Methods (**PhD-iFM'24**)
41. Int. Workshop on Quantification (**QUANTIFY'24**)
42. Int. Workshop on Satisfiability Checking and Symbolic Computation (**SC²'24**)
43. Int. Symp. on Symbolic and Numeric Algorithms for Scientific Computing (**SYNASC'24**)
44. Int. Conf. on Tools and Algorithms for the Construction and Analysis of Systems (**TACAS'24**)
45. Int. Workshop on Rewriting Logic and its Applications (**WRLA'24**)
46. Design, Automation and Test in Europe Conference (**DATE'23**)
47. Int. Conf. on Fundamental Approaches to Software Engineering (**FASE'23**)
48. Int. Conf. on Hybrid Systems: Computation & Control (**HSCC'23**)

49. Software Verification and Testing Track at the ACM Symp. on Applied Computing (**SAC-SVT'23**)
50. Int. Conf. on Computer Aided Verification (**CAV'22**)
51. Int. Conf. on Coordination Models and Languages (**COORDINATION'22**)
52. Int. Conf. on Fundamental Approaches to Software Engineering (**FASE'22**)
53. Int. Workshop on Formal Engineering of Cyber-Physical Systems (**FE-CPS@TASE'22**)
54. Int. Conf. on Formal Methods in Computer-Aided Design (**FMCAD'22**)
55. Int. Conf. on Formal Methods for Industrial Critical Systems (**FMICS'22**)
56. Int. Conf. on Formal Modeling and Analysis of Timed Systems (**FORMATS'22**)
57. Int. Conf. on Hybrid Systems: Computation & Control (**HSCC'22**)
58. Workshop on Advances in Human-Centric Experiments in Software Engineering (**HUMAN'22**)
59. Int. Conf. on integrated Formal Methods (**iFM'22**)
60. Int. Joint Conf. on Automated Reasoning (**IJCAR'22**)
61. Int. Symp. on NASA Formal Methods (**NFM'22**)
62. Parallel and Distributed Automated Reasoning (**PDAR'22**)
63. IEEE Real-Time Systems Symposium (**RTSS'22**)
64. Int. Workshop on Satisfiability Checking and Symbolic Computation (**SC²'22**)
65. Theoretical Aspects of Software Engineering Conf. (**TASE'22**)
66. Int. Workshop on Algebraic Development Techniques (**WADT'22**)
67. Int. Workshop on Rewriting Logic and its Applications (**WRLA'22**)
68. IFAC Conf. on Analysis and Design of Hybrid Systems (**ADHS'21**)
69. Int. Symp. on Automated Technology for Verification and Analysis (**ATVA'21**)
70. Int. Conf. on Computer Aided Verification (**CAV'21**)
71. Int. Conf. on Formal Methods in Computer-Aided Design (**FMCAD'21**)
72. Int. Conf. on Formal Methods for Industrial Critical Systems (**FMICS'21**)
73. Int. Conf. on Fundamentals of Software Engineering (**FSEN'21**)
74. Int. Conf. on Hybrid Systems: Computation & Control (**HSCC'21**)
75. Int. Colloquium on Theoretical Aspects of Computing (**ICTAC'21**)
76. Int. Symp. on NASA Formal Methods (**NFM'21**)
77. ACM SIGPLAN Conf. on Object-Oriented Programming, Systems, Languages, and Applications (**OOPSLA'21**)
78. Int. Conf. on Software Engineering and Formal Methods (**SEFM'21**)
79. Int. Workshop on Symbolic and Numerical Methods for Reachability Analysis (**SNR'21**)
80. Theoretical Aspects of Software Engineering Conf. (**TASE'21**)
81. Int. Symp. on Automated Technology for Verification and Analysis (**ATVA'20**)
82. Int. Conf. on Formal Methods in Computer-Aided Design (**FMCAD'20**)
83. Int. Colloquium on Theoretical Aspects of Computing (**ICTAC'20**)

84. Int. Conf. on integrated Formal Methods (**iFM'20**)
85. Int. Conf. on Logic for Programming, Artificial Intelligence and Reasoning (**LPAR-23**)
86. Int. GI/ITG Conf. on Measurement, Modelling and Evaluation of Computing Systems (**MMB'20**)
87. Int. Symp. on NASA Formal Methods (**NFM'20**)
88. Int. Workshop on Satisfiability Checking and Symbolic Computation (**SC²'20**)
89. Int. Conf. on Software Engineering and Formal Methods (**SEFM'20**)
90. Int. Workshop on Symbolic and Numerical Methods for Reachability Analysis (**SNR'20**)
91. Int. Symp. on Theoretical Aspects of Software Engineering (**TASE'20**)
92. Int. Workshop on Rewriting Logic and its Applications (**WRLA'20**)

93. Debreceni ADA Konferencia (**ADA'19**)
94. Int. Symp. on Automated Technology for Verification and Analysis (**ATVA'19**)
95. Computability in Europe (**CiE'19**)
96. Int. Workshop on Model-Based Design of Cyber Physical Systems (**CyPhy'19**)
97. Int. Conf. on Formal Methods in Computer-Aided Design (**FMCAD'19**)
98. Student Forum at Int. Conf. on Formal Methods in Computer-Aided Design (**Student@FMCAD'19**)
99. Int. Conf. on Fundamentals of Software Engineering (**FSEN'19**)
100. Int. Conf. on Hybrid Systems: Computation & Control (**HSCC'19**)
101. Int. Conf. on integrated Formal Methods (**iFM'19**)
102. Int. Symp. on NASA Formal Methods (**NFM'19**)
103. Int. Symp. on Practical Aspects of Declarative Languages (**PADL'19**)
104. Int. Workshop on Satisfiability Checking and Symbolic Computation (**SC²'19**)
105. Int. Conf. on Software Engineering and Formal Methods (**SEFM'19**)
106. Int. Workshop on Symbolic and Numerical Methods for Reachability Analysis (**SNR'19**)
107. Int. Symp. on Theoretical Aspects of Software Engineering (**TASE'19**)

108. Debreceni ADA Konferencia (**ADA'18**)
109. IFAC Conf. on Analysis and Design of Hybrid Systems (**ADHS'18**)
110. Int. Workshop on Model-Based Design of Cyber Physical Systems (**CyPhy'18**)
111. IEEE Int. Workshop on Formal Methods Integration (**FMi'18**)
112. Int. Conf. on Hybrid Systems: Computation & Control (**HSCC'18**)
113. Int. Congress on Mathematical Software (**ICMS'18**)
114. Int. Conf. on integrated Formal Methods (**iFM'18**)
115. Methoden und Beschreibungssprachen zur Modellierung und Verifikation von Schaltungen und Systemen (**MBMV'18**)
116. Int. Symp. on NASA Formal Methods (**NFM'18**)
117. Int. Symp. on Practical Aspects of Declarative Languages (**PADL'18**)
118. Int. Conf. on Quantitative Evaluation of SysTems (**QEST'18**)

- 119. Int. Workshop on Satisfiability Checking and Symbolic Computation (**SC²'18**)
- 120. Int. Conf. on Software Engineering and Formal Methods (**SEFM'18**)
- 121. Studierendenkonferenz Informatik (**SKILL'18**)
- 122. Int. Workshop on Satisfiability Modulo Theories (**SMT'18**)
- 123. Int. Workshop on Symbolic and Numerical Methods for Reachability Analysis (**SNR'18**)
- 124. Int. Symp. on Theoretical Aspects of Software Engineering (**TASE'18**)

- 125. IEEE Int. Workshop on Formal Methods Integration (**FMi'17**)
- 126. Int. Conf. on Formal Modeling and Analysis of Timed Systems (**FORMATS'17**)
- 127. Int. Conf. on Fundamentals of Software Engineering (**FSEN'17**)
- 128. Int. Conf. on Hybrid Systems: Computation & Control (**HSCC'17**)
- 129. Int. Conf. on integrated Formal Methods (**iFM'17**)
- 130. Methoden und Beschreibungssprachen zur Modellierung und Verifikation von Schaltungen und Systemen (**MBMV'17**)
- 131. Int. Symp. on Practical Aspects of Declarative Languages (**PADL'17**)
- 132. Int. Conf. on Quantitative Evaluation of SysTems (**QEST'17**)
- 133. Int. Workshop on Satisfiability Checking and Symbolic Computation (**SC²'17**)
- 134. Symp. on Dependable Software Engineering: Theories, Tools and Applications (**SETTA'17**)
- 135. Int. Conf. on Simulation and Modeling Methodologies, Technologies and Applications (**SIMULTECH'17**)
- 136. Int. Conf. on Current Trends in Theory and Practice of Computer Science (**SOFSEM'17**)
- 137. Int. SPIN Symp. on Model Checking of Software (**SPIN'17**)
- 138. Int. Symp. on Theoretical Aspects of Software Engineering (**TASE'17**)
- 139. Int. Conf. on Tools and Methods of Program Analysis (**TMPA'17**)
- 140. Int. Conf. on Verification, Model Checking, and Abstract Interpretation (**VMCAI'17**)

- 141. Int. Workshop on Exascale Multi/many Core Computing Systems (**E-MuCoCoS'16**)
- 142. Int. Symp. on Formal Methods (**FM'16**)
- 143. IEEE Int. Workshop on Formal Methods Integration (**FMi'16**)
- 144. Int. Conf. on Formal Techniques for Distributed Objects, Components and Systems (**FORTE'16**)
- 145. Int. Workshop Methoden und Beschreibungssprachen zur Modellierung und Verifikation von Schaltungen und Systemen (**MBMV'16**)
- 146. PhD Symp. at iFM'16 on Formal Methods: Algorithms, Tools and Applications (**PhD-iFM'16**)
- 147. Int. Conf. on Runtime Verification (**RV'16**)
- 148. Symp. on Dependable Software Engineering: Theories, Tools and Applications (**SETTA'16**)
- 149. Int. Workshop on Satisfiability Modulo Theories (**SMT'16**)
- 150. Int. SPIN Symp. on Model Checking Software (**SPIN'16**)
- 151. Int. Symp. on Theoretical Aspects of Software Engineering (**TASE'16**)

- 152. IFAC Conf. on Analysis and Design of Hybrid Systems (**ADHS'15**)
- 153. Int. Symp. on Automated Technology for Verification and Analysis (**ATVA'15**)

- 154. Int. Workshop on Design and Implementation of Formal Tools and Systems (**DIFTS'15**)
- 155. Int. Workshop on Exascale Multi/many Core Computing Systems (**E-MuCoCoS'15**)
- 156. Young Researchers' Conf. Frontiers of Formal Methods (**FFM'15**)
- 157. Int. Symp. on Formal Methods (**FM'15**)
- 158. IEEE Int. Workshop on Formal Methods Integration (**FMi'15**)
- 159. Int. Conf. on Formal Techniques for Distributed Objects, Components and Systems (**FORTE'15**)
- 160. IARCS Annual Conf. on Foundations of Software Technology and Theoretical Computer Science (**FSTTCS'15**)
- 161. Int. Conf. on Hybrid Systems: Computation and Control (**HSCC'15**)
(Additionally, **chair** of the HSCC'15 commission for the **Best Student Paper Award**)
- 162. Int. Symp. on NASA Formal Methods (**NFM'15**)
- 163. Int. Conf. Quantitative Evaluation of SysTems (**QEST'15**)
- 164. Summer Computer Simulation Conf. (**SCSC'15**)
- 165. Int. Conf. on Advances in System Simulation (**SIMUL'15**)
- 166. Int. Conf. on Tools and Algorithms for the Construction and Analysis of Systems (**TACAS'15**)
- 167. Int. Conf. on Verification, Model checking, and Abstract Interpretation (**VMCAI'15**)
- 168. Int. Workshop on Design and Implementation of Formal Tools and Systems (**DIFTS'14**)
- 169. IEEE Int. Workshop on Formal Methods Integration (**FMi'14**)
- 170. Int. Conf. on Formal Modeling and Analysis of Timed Systems (**FORMATS'14**)
- 171. Int. Workshop on Formal Techniques for Safety-Critical Systems (**FTSCS'14**)
- 172. Workshop on Hybrid Autonomous Systems (**HAS'14**)
- 173. Int. Conf. on Hybrid Systems: Computation and Control (**HSCC'14**)
- 174. Int. Conf. on integrated Formal Methods (**iFM'14**)
- 175. Summer Computer Simulation Conf. (**SCSC'14**)
- 176. Int. Conf. on Advances in System Simulation (**SIMUL'14**)
- 177. Int. Conf. on Simulation and Modeling Methodologies, Technologies and Applications (**SIMULTECH'14**)
- 178. Int. Workshop on Harnessing Theories for Tool Support in Software (**TTSS'14**)
- 179. IEEE Int. Workshop on Formal Methods Integration (**FMi'13**)
- 180. Int. Conf. on Formal Modeling and Analysis of Timed Systems (**FORMATS'13**)
- 181. Int. Workshop on Formal Techniques for Safety-Critical Systems (**FTSCS'13**)
- 182. Int. Conf. on Hybrid Systems: Computation and Control (**HSCC'13**)
- 183. Int. Conf. on integrated Formal Methods (**iFM'13**)
- 184. Int. Conf. on Advances in System Simulation (**SIMUL'13**)
- 185. Int. Conf. on Simulation and Modeling Methodologies, Technologies and Applications (**SIMULTECH'13**)
- 186. Int. Conf. on Tools and Algorithms for the Construction and Analysis of Systems (**TACAS'13**)
- 187. Int. Symp. on Formal Aspects of Component Software (**FACS'12**)

- 188. Int. Workshop on Formal Techniques for Safety-Critical Systems (**FTSCS'12**)
- 189. Int. Conf. on Hybrid Systems: Computation and Control (**HSCC'12**)
- 190. Int. Workshop on Numerical Software Verification (**NSV'12**)
- 191. Int. Conf. on Quantitative Evaluation of Systems (**QEST'12**)
- 192. Int. Conf. on Simulation and Modeling Methodologies, Technologies and Applications (**SIMULTECH'12**)
- 193. Int. Symp. on Formal Aspects of Component Software (**FACS'11**)
- 194. Int. Symp. on Fundamentals of Computation Theory (**FCT'11**)
- 195. Int. Conf. on Simulation and Modeling Methodologies, Technologies and Applications (**SIMULTECH'11**)
- 196. Int. Workshop on Rewriting Techniques for Real-Time Systems (**RTRTS'10**)
- 197. Int. Symp. on Theoretical Aspects of Software Engineering (**TASE'10**)

Further reviewing activities

- Since 2021: Editorial board member for *Transactions on Computational Logic (ToCL)*
- Since 2021: Editorial board member *Formal Methods in System Design (FMSD)*
- Since 2018: Editorial board member for *Progress in Computer Science and Applied Logic (PCSAL)*
- 2022-2023: Editorial board member *Nonlinear Analysis: Hybrid Systems (NAHS)*
- Guest editor for several journal special issues
- 2025: Evaluator of B.Sc./M.Sc. programs at the Technical University of Denmark, Denmark;
- 2024-2025: Evaluator EU MSC COFUND SEED
- 2024: Member of the Evaluation Panel for the R&D Units Multiannual Funding Program of the Portuguese national public funding agency Fundação para a Ciência e a Tecnologia (FCT)
- 2020-2021: Member of the Evaluation Panel for INRIA Project Teams
- 2018: Member of the NSERC (Natural Sciences and Engineering Research Council of Canada) Evaluation Group for Computer Science
- Further project reviews: European Commission; European Science Foundation; German Research Foundation (DFG), Germany; German Academic Exchange Service (DAAD), Germany; Bavarian Research Institut for Digital Transformation (bidt), Germany; FFG, Austria; Stadt Wien, Austria; FWF, Austria; Linz Institute of Technology, Austria; FEMtech, Austria; Scientific Council of the Institut Pascal, France; FCT, Portugal; City University of Hong Kong, China; Israel Science Foundation; Natural Sciences and Engineering Research Council of Canada (NSERC), Canada
- Book reviewer for Springer International Publishing
- Reviewer for numerous journals (computer science, mathematics)

Committee work

Since 2025	Member of the <i>Scientific Directorate of Schloss Dagstuhl</i> - Leibniz Center for Informatics
2025	Member of the <i>Test of Time Award</i> Committee for the 28th ACM Int. Conf. on Hybrid Systems: Computation & Control (HSCC'25)
2025	Jury member for the <i>2025 Minerva Informatics Equality Award</i> of Informatics Europe
Since 2024	Board member of the German Association of University Professors and Lecturers (Deutscher Hochschulverband, DHV), Region Aachen
2018-2019	Board member Informatics Europe
Since 2017	Representative of the German Informatics Society at the Fachgruppe Computeralgebra
Since 2024	Member of the Informatics Europe Working Group <i>Diversity and Inclusion</i>
2017-2023	Member and 2018-2019 leader of the Informatics Europe Working Group <i>Women in Informatics Research and Education</i>
2016	Jury member for the <i>2016 Minerva Informatics Equality Award</i> of Informatics Europe
Since 2012	Deputy equal opportunity commissioner of the RWTH Aachen University
2010-2011	Speaker of the young scientists at RWTH Aachen University
Since 2008	Member of different commissions at RWTH Aachen University

Supervision of Ph.D. students

Current supervision:	Lina Gerlach, József Kovács, Valentin Promies (RWTH Aachen University, Aachen, Germany)
Graduated 04/2026:	László Antal (RWTH Aachen University, Aachen, Germany)
Graduated 11/2025:	Jasper Nalbach (RWTH Aachen University, Aachen, Germany)
Graduated 10/2022:	Rebecca Haehn (RWTH Aachen University, Aachen, Germany)
Graduated 05/2020:	Francesco Leofante (co-tutelle: RWTH Aachen University, Aachen, Germany and Università di Genova, Genoa, Italy) <i>Optimal Planning Modulo Theories</i>
Graduated 03/2020:	Gereon Kremer (RWTH Aachen University, Aachen, Germany) <i>Cylindrical Algebraic Decomposition for Nonlinear Arithmetic Problems</i>
Graduated 09/2019:	Stefan Schupp (RWTH Aachen University, Aachen, Germany) <i>State Set Representations and their Usage in the Reachability Analysis of Hybrid Systems</i>
Graduated 12/2018:	Ulrich Loup (RWTH Aachen University, Aachen, Germany) <i>On Solving Real-algebraic Formulas in a Satisfiability-Modulo-Theories Framework</i>
Graduated 12/2016:	Johanna Nellen (RWTH Aachen University, Aachen, Germany) <i>Analysis and Synthesis of Hybrid Systems in Control Engineering</i>
Graduated 10/2016:	Florian Corzilius (RWTH Aachen University, Aachen, Germany) <i>Integrating Virtual Substitution into Strategic SMT Solving</i>
Graduated 04/2015:	Daniela Lepri (University of Oslo, Oslo, Norway) <i>Timed Temporal Logic Model Checking of Real-Time Systems – A Rewriting-Logic-Based Approach</i>
Graduated 03/2015:	Xin Chen (RWTH Aachen University, Aachen, Germany) <i>Reachability Analysis of Non-Linear Hybrid Systems Using Taylor Models</i>
Graduated 03/2015:	Nils Jansen (RWTH Aachen University, Aachen, Germany) <i>Counterexamples in Probabilistic Verification</i>
Graduated 09/2014:	Muhammad Fadlisyah (University of Oslo, Oslo, Norway)

Evaluation commissions

Ph.D. reviewer:

Aymeric Come, INRIA Rennes, France, 2026
Joanna Georgia Delicaris, Münster, Germany, 2026
Oscar Lopez, Nantes, France, 2026
Andy Oertel, Lund University, Sweden, 2026
Cesar Augusto, KU Leuv, Belgium, 2025
Anna Becchi, Trento, Italy, 2025
Enrico Lipparini, University of Genoa, Italy, 2024
Birgit van Huijgevoort, Eindhoven University of Technology, the Netherlands, 2023
Peter Varnai, KTH Royal Institute of Technology, Sweden, 2022
Guillaume Dupont, National Polytechnic Institute, Toulouse, France, 2021
Vicktorio El Hakim, University of Twente, the Netherlands, 2021
Andreas Humenberger, TU Wien, Austria, 2021
Carina Pilch, TU Münster, Germany, 2021
Anton Pirogov, RWTH Aachen University, Germany, 2021
Siham Khoussi, Verimag Grenoble, France, 2021
Shukun Tokas, University of Oslo, Norway, 2021
Jannik Hüls, University of Münster, Germany, 2020
Andrei Sandler, University of Hertfordshire, UK, 2020
Bruto Da Costa Antonio Anastasio, Indian Institute of Technology Kharagpur, India, 2020
Bjornat Luteberget, University of Oslo, Norway, 2019
Braham Lotfi Mediouni, Université Grenoble-Alpes, France
Leonhard Asselborn, University of Kassel, Germany, 2018
Ahmed Irfan, University of Trento, Italy, 2018
Hadi Zaatiti, University Paris-Sud, France, 2018
Ayman Aljarbough, INRIA Rennes / IRISA, France, 2017
Haniel Barbose, INRIA Nancy, France, 2017
Curtis Bright, University of Waterloo, Canada, 2017
Christian Meirich, RWTH Aachen University, Germany, 2017
Yuliia Romenska, VERIMAG Grenoble, France, 2017
Niloofer Safran, RWTH Aachen University, Germany, 2017
Souha Ben-Rayana, VERIMAG Grenoble, France, 2016
Crystal Din, University of Oslo, Norway, 2014
Georgeta Igna, University of Nijmegen, the Netherlands, 2013
Melanie Winkler, RWTH Aachen University, Germany, 2013
Romain Testylier, VERIMAG Grenoble, France, 2013

Appointment and habilitation committees:	TU Wien, Austria (2025); Max Planck Institute for Software Systems, Germany (2025); University of Bonn, Germany (2025); École Polytechnique, France (2024); Aalborg University, Denmark (2024); Eindhoven University of Technology, the Netherlands (2024); University of Bath, UK (2024); University of Hildesheim, Germany (2024); University of Grenoble, France (2023); Karlsruhe Institute of Technology, Germany (2022); University of Braunschweig, Germany (2022); University of Bremen, Germany (2022), KIT, Germany (2021); University of Cyprus (2021); Western Norway University of Applied Sciences (2021); Universität Oldenburg, Germany (2019); University of Halmstad (2019); TU Wien, Austria (2019); TU München, Germany (2019); MPI Saarbrücken, Germany (2019); Chalmers University of Technology, Sweden (2018); Radboud University Nijmegen, the Netherlands (2016); University of Twente, the Netherlands (2015-2016); Aarhus University, Denmark (2013-2014); RWTH Aachen University, Germany (numerous since 2008)
---	--

Teaching since 2008

Received the **Teaching Award** of the RWTH student association, 2024.

Bachelor/Master at RWTH Aachen University:

Summer term 2026:	<i>Data Structures and Algorithms</i> (~700 students)
Summer term 2025:	<i>Data Structures and Algorithms</i> (~700 students) Evaluation: 2.1 (scale 1-5 with 1 being the best)
Annually since 2009 (each winter term):	Lecture on <i>Satisfiability Checking</i> (200-350 students) Average evaluation: 1.5 (scale 1-5 with 1 being the best)
Annually since 2010 (each sommer term):	Lecture on <i>Modeling and Analysis of Hybrid Systems</i> (150-250 students) Average evaluation: 1.6 (scale 1-5 with 1 being the best)
Each semester:	<i>Seminars and practical courses</i>
Summer term 2014:	<i>Data Structures and Algorithms</i> (~600 students) Evaluation: 1.7 (scale 1-5 with 1 being the best)
Winter term 2017/18:	Bridging Course <i>Foundations of Informatics</i>
Summer term 2020:	<i>Algorithms and Data Structures (Service)</i> (~150 students)

Doctoral studies:

08/2025:	One-day tutorial <i>SMT Solving</i> at the Marktoberdorf Summer School, Marktoberdorf, Germany
09/2022:	One-day tutorial <i>SMT Solving</i> at the Summer School of the European Research Training Network on Reliable AI for Marine Robotics (REMARO), Aachen, Germany
07/2022:	One-day tutorial <i>Understanding and Using SMT Solving</i> at the Summer School on Automated Reasoning in the Class (ARC), Linz, Austria
03/2020:	10-days doctoral course <i>Reachability Analysis Techniques for Hybrid Systems</i> at TU Wien, Austria
06/2018:	Half-day tutorial <i>Reachability Analysis Techniques for Hybrid Systems</i> at the 2018 Summer School on Cyber-physical Systems, Halmstad, Sweden

09-10/2017: Doctoral course *Modeling and Analysis of Hybrid Systems* at the University of Szeged, Hungary

10/2015: Doctoral course *Formal Methods for Hybrid Systems* at the University of Genoa, Italy

06/2014: Half-day tutorial *Probabilistic Modeling and Model Checking* at the Int. School on Formal Methods for the Design of Computer, Communication and Software Systems: Executable Software Models (SFM-14:ESM), Bertinoro, Italy

High-school activities:

Organisation of annual events for high-school students: Lecture series “What is Computer Science?”, Summer University, Aachen Computer Science Days

Contribution to different events for pupils and high-school students: Girls’ Day, Helle Köpfe, Cybermentor

March 19, 2026