Reiner Hähnle
Full CV

Contents

1 Curriculum Vitae

Personal Details

Last name:	Hähnle
Given names:	Reiner Jürgen
Date of birth:	1 July 1962
Place of birth:	Stuttgart
Citizenship:	German
Adresses:	———
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Education

August 1972 – July 1981	Georg-Büchner Gymnasium Winnenden
October 1981 – December 1987	Study of Computer Science (“Informatik”) at University of Karlsruhe. Final degree: Diplom-Informatiker
May 1992	Dr. rer. nat. in Computer Science (“Informatik”) from University of Karlsruhe
June 1997	Habilitation in *Theoretical Computer Science* at Technical University of Vienna

Employment

January 1988 – April 1989	Military replacement service, Reha-Klinik Karlsbad-Langensteinbach
June 1989 – May 1992	PhD student at Department of Computer Science, University of Karlsruhe (Prof. Peter H. Schmitt) and IBM Germany, Scientific Center Heidelberg
June 1992 – March 1996	Postdoctoral fellow at Department of Computer Science, University of Karlsruhe (Prof. Peter H. Schmitt)
April 1996 – December 1999	Assistant Professor (C1) Department of Computer Science, University of Karlsruhe
January 2000 – June 2002	Associate Professor in Computer Science, Division of Computing Science, Chalmers University of Technology, Gothenburg, Sweden
January 2001 – October 2004	Director of Postgraduate Studies, Division of Computing Science, Chalmers University of Technology, Gothenburg, Sweden
July 2001 – December 2002	Senior Consultant, Safelogic AB, Gothenburg, Sweeden
July 2002 – August 2011	Full Professor in Computer Science, Division of Computing Science, Chalmers University of Technology, Gothenburg, Sweden
November 2003 – December 2007	Vice-Prefect for Postgraduate Studies, Department of Computer Science and Engineering, Chalmers University of Technology, Gothenburg, Sweden
January 2008 – December 2009	Pro-Prefect for Postgraduate Studies, Deputy Head of Department, Department of Computer Science and Engineering, Chalmers University of Technology, Gothenburg, Sweden
January 2014 – March 2016	Dean of the Department of Computer Science, Technical University of Darmstadt
since Sept. 2011	Full Professor in Computer Science, Head of Software Engineering Group, Department of Computer Science, Technical University of Darmstadt

2 Publications

Bibliometrics
(based on Google Scholar, `user=UXmx_RUAAAAJ`, as of March 19, 2024)

Total number of citations	8211
h index	42
i100 index	16, publications: [1, 2, 10, 18, 33, 52, 58, 59, 65, 67, 86, 145, 148, 158, 162, 214]
i10 index	125
i1 index	231

Important Research Papers

1. Publication [58] (1994, GS: 106) established the connection between mixed integer programming and infinite-valued logic. It led to a plethora of follow-up work with applications in proof theory, logic programming, and constraint programming.

2. Publication [145] (2005, GS: 283) introduced deductive verification as a fully precise approach to prove information flow properties. It established the method later termed *self composition* and sparked hundreds of follow-up publications. It also stimulated the interest in verification of hyper-properties of programs. An earlier version is [144].

3. Publication [214] (2011, GS: 443) describes the design of the *active object* language ABS and defines its formal semantics. The work on ABS contributed to the current surge of interest in asynchronous programming. Active object languages are also increasingly used in simulation.

4. Publication [158] (2014, GS: 121) presented the first automated, precise resource analysis for multi-procedure programs involving both recursion and loops. It became influential in the design of resource analyses and is a standard reference in that field.

5. Publication [148] (2015, GS: 101) reported and fixed a bug in the default sorting procedure present in the JDK, Android, Python, Haskell, and many other languages and frameworks. At the time, its announcement sparked over three million views on Reddit. It is still one of the most complex algorithms ever verified at unmodified JAVA source code level. There is also an extended journal version [53].

6. Publication [54] is the culmination of a sustained collaborative effort, starting with paper [153], to develop a denotational trace semantics that is modular, compositional and suitable for a very wide range of concurrent computing paradigms. We started to use it already as a unified basis for analysis [77] and deductive verification [128, 186, 198] in concurrent languages.

Important Books and Overview Papers

1. The book [1] (1993, GS: 295) was based on my dissertation and established automated deduction in many-valued logic as a coherent subfield, unifying many separate strands. Even after 30 years, it keeps being cited.

2. The *Handbook of Tableau Methods* [64] (1999, GS: 417) became a standard reference in automated theorem proving and proof theory and still is frequently cited. It is the second most cited in Oxford's Handbooks in Computing series.

3. The article [67] (2001, GS: 240) is the standard reference for automated theorem proving with tableau methods.

4. I was initiator, co-designer, and driving force behind the verification tool KeY, one of the best-known deductive program verification systems, see `www.key-project.org`. There are two highly cited books about KeY: [2] (2016, GS: 395) and [10] (2006, GS: 804). See also the article [33] (GS: 415).

5. The survey article [52] (2017, GS: 145) on *Active Object* languages was influential in driving the current interest in asynchronous programming languages and keeps being highly cited.

6. The invited overview article [78] (2019, GS: 94) takes stock of the state-of-art in *deductive verification* and quickly became a standard reference for that field.

In July 2022 a *festschrift* in my honour appeared as part of Springer's LNCS series [236].

Book

[1] Reiner Hähnle. *Automated Deduction in Multiple-Valued Logics*, volume 10 of *International Series of Monographs on Computer Science*. Oxford University Press, 1994. Revised version of Ph.D. thesis. Reviewed in *Computing Reviews*, August 1995, #9508-0571 by Christian Fermüller, in *Notre Dame Journal Formal Logic*, 37(4), Fall 1996 by Grzegorz Malinowski, in *Mathematical Reviews*, 1996, #96a:68107 by Alexander Leitsch.

Editorial Work (Collections, Proceedings, Special Issues)

[2] Wolfgang Ahrendt, Bernhard Beckert, Richard Bubel, Reiner Hähnle, Peter Schmitt, and Mattias Ulbrich, editors. *Deductive Software Verification—The KeY Book: From Theory to Practice*, volume 10001 of *LNCS*. Springer, 2016.

[3] Wolfgang Ahrendt, Bernhard Beckert, Richard Bubel, Reiner Hähnle, and Mattias Ulbrich, editors. *Deductive Software Verification: Future Perspectives*, volume 12345 of *LNCS*. Springer, Cham, December 2020.

[4] Thomas Ball, Jürgen Giesl, Reiner Hähnle, and Tobias Nipkow, editors. *Interaction versus Automation: The two Faces of Deduction (Dagstuhl Seminar 09411)*, Dagstuhl Seminar Proceedings. Schloss Dagstuhl, Leibniz-Zentrum für Informatik, Germany, 2009.

[5] David Basin, Bertram Fronhöfer, Reiner Hähnle, Joachim Posegga, and Camilla Schwind, editors. *2^{nd} Workshop on Theorem Proving with Analytic Tableaux and Related Methods, Marseille/France*. Max-Planck-Institut für Informatik, Saarbrücken, MPI-Report, April 1993.

[6] Peter Baumgartner, Reiner Hähnle, and Joachim Posegga, editors. *Theorem Proving with Analytic Tableaux and Related Methods, 4th International Workshop, St. Goar, Germany*, volume 918 of *LNCS*. Springer, May 1995.

[7] Peter Baumgartner, Reiner Hähnle, and Joachim Posegga, editors. *Theorem Proving with Analytic Tableaux and Related Methods, 4th International Workshop, St. Goar, Germany. Poster Session and Short Papers*. Institute for Computer Science, University of Koblenz, Germany, May 1995.

[8] Bernhard Beckert and Reiner Hähnle, editors. *Proc. Tests and Proofs, 2nd International Conference (TAP), Prato, Italy*, volume 4966 of *LNCS*. Springer-Verlag, April 2008.

[9] Bernhard Beckert and Reiner Hähnle, editors. *Tests and Proofs: Papers presented at the Second International Conference TAP 2008, Prato, Italy*. Number 5 in Reports of the Faculty of Informatics. University of Koblenz-Landau, Faculty of Informatics, March 2008.

[10] Bernhard Beckert, Reiner Hähnle, and Peter Schmitt, editors. *Verification of Object-Oriented Software: The KeY Approach*, volume 4334 of *LNCS*. Springer, 2006.

[11] Bernhard Beckert and Reiner Hähnle (eds.). Special issue on tests and proofs. *Journal of Automated Reasoning*, 45(4), December 2010.

[12] Amel Bennaceur, Dimitra Giannakopoulou, Reiner Hähnle, and Karl Meinke. Machine learning for dynamic software analysis: Potentials and limits (dagstuhl seminar 16172). *Dagstuhl Reports*, 6(4):161–173, 2016.

[13] Amel Bennaceur, Reiner Hähnle, and Karl Meinke, editors. *Machine Learning for Dynamic Software Analysis: Potentials and Limits, Intl. Dagstuhl Seminar 16172, Dagstuhl Castle, Germany, Revised Papers*, volume 11026 of *LNCS*. Springer, 2018.

[14] Marco Bernardo, Ferruccio Damiani, Reiner Hähnle, Einar B. Johnsen, and Ina Schaefer, editors. *Executable Software Models: 14th International School on Formal Methods for the Design of Computer, Communication, and Software Systems, Bertinoro, Italy*, volume 8483 of *LNCS*. Springer, June 2014.

[15] Jean Bézivin, Thomas Baar, Tracy Gardner, Martin Gogolla, Reiner Hähnle, Heinrich Hussmann, Octavian Patrascoiu, Peter H. Schmitt, and Jos Warmer. OCL and Model Driven Engineering (workshop report). In Nuno Jardim Nunes, Bran Selic, Alberto Rodrigues da Silva, and Ambrosio Toval Alvarez, editors, *UML Modeling Languages and Applications: UML 2004 Satellite Activities and Revised Selected Papers*, volume 3297 of *Lecture Notes in Computer Science*, pages 67–75. Springer-Verlag, 2005.

[16] Nikolaj Bjørner, Reiner Hähnle, Tobias Nipkow, and Christoph Weidenbach. Deduction and arithmetic (dagstuhl seminar 13411). *Dagstuhl Reports*, 3(10):1–24, 2013.

[17] Marcello Bonsangue, Frank de Boer, Elena Giachino, and Reiner Hähnle, editors. *International School on Formal Models for Components and Objects: Post Proceedings*, volume 7866 of *LNCS*. Springer, 2013.

[18] Marcello D'Agostino, Dov Gabbay, Reiner Hähnle, and Joachim Posegga, editors. *Handbook of Tableau Methods*. Kluwer, Dordrecht, 1999. Reviewed in: *Journal of Logic, Language and Information*, 10(4), pages 518–523, 2001, by Maarten de Rijke; *Mathematical Reviews* #2002b:03001 by Henry Africk.

[19] Frank De Boer, Ferruccio Damiani, Reiner HÃ¤hnle, Einar Broch Johnsen, and Eduard Kamburjan, editors. *Active Object Languages: Current Research Trends*, volume 14360 of *LNCS*. Springer, Cham, 2023.

[20] Bertram Fronhöfer, Reiner Hähnle, and Thomas Käufl, editors. *Workshop on Theorem Proving with Analytic Tableaux and Related Methods, Lautenbach/Germany*. University of Karlsruhe, Dept. of Computer Science, Internal Report 8/92, March 1992.

[21] Jürgen Giesl and Reiner Hähnle, editors. *Automated Reasoning: 5th International Joint Conference, IJCAR, Edinburgh, UK*, volume 6173 of *LNCS*. Springer, July 2010.

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[23] Gerard Govaert, Mohamed Nadif, and Reiner Hähnle, editors. Special Issue on Recent Advances in Knowledge and Discovery. *Soft Computing*, 10(5), March 2005.

[24] Dilian Gurov, Reiner Hähnle, Marieke Huisman, Giles Reger, and Christian Lidström. Principles of Contract Languages (Dagstuhl Seminar 22451). *Dagstuhl Reports*, 12(11):1–27, 2023.

[25] Reiner Hähnle and Gonzalo Escalada-Imaz, editors. Special Issue on Deduction in Many-Valued Logic. *Mathware & Soft Computing*, IV(2), 1997.

[26] Reiner Hähnle, Jens Knoop, Tiziana Margaria, Dietmar Schreiner, and Bernhard Steffen, editors. *Leveraging Applications of Formal Methods, Verification, and Validation International Workshops, SARS 2011 and MLSC 2011, Vienna, Austria, Revised Selected Papers*, volume 336 of *CCIS*. Springer, January 2013.

[27] Reiner Hähnle, Wolfram Menzel, Wolfgang Reif, and Peter H. Schmitt, editors. Special Issue on Integration of Deduction Systems. *Journal of Universal Computer Science*, 5(3), March 1999.

[28] Reiner Hähnle and Wil Van der Aalst, editors. *Fundamental Approaches to Software Engineering, 22nd Intl. Conf. FASE, Proceedings*, volume 11424 of *LNCS*, Cham, April 2019. Springer.

[29] Reiner Hähnle and Wil Van der Aalst (eds.). Special issue on automated model analysis tools and techniques presented at FASE 2019. *Intl. J. on Software Tools for Technology Transfer*, 23(3), 2021.

[30] Reiner Hähnle, editor. Special Issue with Selected Papers of Int. Conference of COST Action 15: Many-Valued Logics for Computer Science Applications. *Soft Computing*, 2(3/4), 1998.

[31] Michael Meyer zu Hörste, Eduard Kamburjan, Reiner Hähnle, Hanno Winter, Volker Willert, Jürgen Adamy, Michael Leining, Max Spindler, Martin Lauer, Denis Stein, Oliver Heirich, Jörn Groos, Arne Geffert, Uwe Becker, Michael Breuer, Daria Bachurina, and Frederik Düpmeier, editors. *Tagungsband des Scientific Railway Signalling Symposiums 2017: Die Steuerung*

des Eisenbahnbetriebs der Zukunft, Scientific Railway Signalling Symposium, Darmstadt, July 2018. TU Darmstadt.

[32] René Zweigel, Jan-Jöran Gehrt, Dirk Abel, Peter Reinhart, Sven Wahnstrat, Bilal Üyümez, Sebastian Schön, Eduard Kamburjan, and Reiner Hähnle, editors. *Tagungsband des Scientific Railway Signalling Symposiums 2018: Digital Neue Wege Fahren*, Scientific Railway Signalling Symposium, Darmstadt, February 2019. TU Darmstadt.

Articles in Peer-Reviewed Journals and Collections

[33] Wolfgang Ahrendt, Thomas Baar, Bernhard Beckert, Richard Bubel, Martin Giese, Reiner Hähnle, Wolfram Menzel, Wojciech Mostowski, Andreas Roth, Steffen Schlager, and Peter H. Schmitt. The KeY tool: integrating object oriented design and formal verification. *Software and System Modeling*, 4(1):32–54, 2005.

[34] Wolfgang Ahrendt, Bernhard Beckert, Reiner Hähnle, Wolfram Menzel, Wolfgang Reif, Gerhard Schellhorn, and Peter H. Schmitt. Integration of automated and interactive theorem proving. In W. Bibel and P. Schmitt, editors, *Automated Deduction: A Basis for Applications*, volume II, chapter 4, pages 97–116. Kluwer, 1998.

[35] Elvira Albert, Richard Bubel, Samir Genaim, Reiner Hähnle, and Guillermo Román Díez. A formal verification framework for static analysis—as well as its instantiation to the resource analyzer COSTA and formal verification tool KeY. *Software & Systems Modeling*, 15(4):987–1012, 2016.

[36] Elvira Albert, Frank S. de Boer, Reiner Hähnle, Einar Broch Johnsen, Rudolf Schlatte, Silvia Lizeth Tapia Tarifa, and Peter Y. H. Wong. Formal modeling of resource management for cloud architectures: An industrial case study using Real-Time ABS. *Journal of Service-Oriented Computing and Applications*, 8(4):323–339, December 2014.

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Papers from Computer Science Logic, CSL'95, Paderborn, Germany, volume 1092 of *LNCS*, pages 52–63. Springer, 1996.

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[41] Bernhard Beckert and Reiner Hähnle. Reasoning and verification. *IEEE Intelligent Systems*, 29(1):20–29, Jan.–Feb. 2014.

[42] Bernhard Beckert, Reiner Hähnle, and Gonzalo Escalada-Imaz. Simplification of many-valued logic formulas using anti-links. *J. of Logic and Computation*, 8(4):569–588, 1998.

[43] Bernhard Beckert, Reiner Hähnle, Martin Hentschel, and Peter H. Schmitt. Formal verification with KeY: A tutorial. In Wolfgang Ahrendt, Bernhard Beckert, Richard Bubel, Reiner Hähnle, Peter Schmitt, and Mattias Ulbrich, editors, *Deductive Software Verification—The KeY Book: From Theory to Practice*, volume 10001 of *LNCS*, chapter 16, pages 541–570. Springer, 2016.

[44] Bernhard Beckert, Reiner Hähnle, Tony Hoare, Douglas R. Smith, Cordell Green, Silvio Ranise, Cesare Tinelli, Thomas Ball, and Sriram K. Rajamani. Intelligent systems and formal methods in software engineering. *IEEE Intelligent Systems*, 21(6):71–81, Nov/Dec 2006.

[45] Bernhard Beckert, Reiner Hähnle, and Felip Manyá. The SAT problem of signed CNF formulas. In David Basin, Marcello D'Agostino, Dov Gabbay, Seán Matthews, and Luca Viganò, editors, *Labelled Deduction*, volume 17 of *Applied Logic Series*, pages 61–82. Kluwer, Dordrecht, May 2000.

[46] Richard Bubel, Ferruccio Damiani, Reiner Hähnle, Einar Broch Johnsen, Olaf Owe, Ina Schaefer, and Ingrid Chieh Yu. Proof repositories for compositional verification of evolving software systems. In *Foundations for Mastering Change (FoMaC) I*, volume 9960 of *LNCS*, pages 130–156. Springer, 2016.

[47] Richard Bubel and Reiner Hähnle. Integration of informal and formal development of object-oriented safety-critical software — a case study with the KeY system. *Software Tools for Technology Transfer*, 7(3):197–211, June 2005.

[48] Richard Bubel and Reiner Hähnle. Pattern-driven formal specification. In Bernhard Beckert, Reiner Hähnle, and Peter Schmitt, editors, *Verification of Object-Oriented Software: The KeY Approach*, volume 4334 of *LNCS*, pages 295–315. Springer, 2006.

[49] Richard Bubel and Reiner Hähnle. KeY-Hoare. In Wolfgang Ahrendt, Bernhard Beckert, Richard Bubel, Reiner Hähnle, Peter Schmitt, and Mattias Ulbrich, editors, *Deductive Software Verification—The KeY Book: From Theory to Practice*, volume 10001 of *LNCS*, chapter 17, pages 571–589. Springer, 2016.

[50] Dave Clarke, Nikolay Diakov, Reiner Hähnle, Einar Broch Johnsen, Ina Schafer, Jan Schäfer, Rudi Schlatte, and Peter Y. H. Wong. Modeling Spatial and Temporal Variability with the HATS Abstract Behavioral Modeling Language. In M. Bernardo and V. Issarny, editors, *Formal Methods for Eternal Networked Software Systems*, volume 6659 of *LNCS*, pages 417–457. Springer, 2011.

[51] Ferruccio Damiani, Reiner Hähnle, Eduard Kamburjan, Michael Lienhardt, and Luca Paolini. Variability modules. *J. of Systems and Software*, 195, January 2023.

[52] Frank de Boer, Crystal Chang Din, Kiko Fernandez-Reyes, Reiner Hähnle, Ludovic Henrio, Einar Broch Johnsen, Ehsan Khamespanah, Justine Rochas, Vlad Serbanescu, Marjan Sirjani, and Albert Mingkun Yang. A survey of active object languages. *ACM Computing Surveys*, 50(5):76:1–76:39, October 2017. Article 76.

[53] Stijn De Gouw, Frank S. De Boer, Richard Bubel, Reiner Hähnle, Jurriaan Rot, and Dominic Steinhöfel. Verifying OpenJDK's sort method for generic collections. *J. Automated Reasoning*, 62(6), 2019.

[54] Crystal Chang Din, Reiner Hähnle, Ludovic Henrio, Ein ar Broch Johnsen, Violet Ka I Pun, and Silvia Lizeth Tapia Tarifa. Locally abstract, globally concrete semantics of concurrent programming languages. *Transactions on Programming Languages and Systems*, 2024.

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[63] Reiner Hähnle. Commodious axiomatization of quantifiers in multiple-valued logic. *Studia Logica*, 61(1):101–121, 1998. Special Issue on Many-Valued Logics, their Proof Theory and Algebras.

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Einar Broch Johnsen, and Eduard Kamburjan, editors, *Active Object Languages: Current Research Trends*, volume 14360 of *LNCS*, pages 292–325, Cham, 2024. Springer.

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tional Symposium (ISoLA), Part II, Corfu, Greece, volume 9953 of *LNCS*, pages 433–446. Springer, October 2016.

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Theses

[233] Reiner Hähnle. Programmverifikation durch symbolische Ausführung und Induktion. Master's thesis, University of Karlsruhe, 1987.

[234] Reiner Hähnle. *Tableaux-Based Theorem Proving in Multiple-Valued Logics*. PhD thesis, University of Karlsruhe, Department of Computer Science, May 1992.

[235] Reiner Hähnle. Broadening the perspectives of automated theorem proving, 1996. Habilitationsschrift, Technical University of Vienna.

Festschrift

[236] Wolfgang Ahrendt, Bernhard Beckert, Richard Bubel, and Einar Broch Johnsen, editors. *The Logic of Software: A Tasting Menu of Formal Methods, Essays Dedicated to Reiner Hähnle on the Occasion of His 60th Birthday*, volume 13360 of *LNCS*. Springer, Cham, Switzerland, July 2022.

Blogs

- *Software as Research Infrastructure*, ETAPS Blog, `etaps.org/blog/007-reiner-haehnle`, 25 April 2023

3 Scientific Activities

Externally Financed Research Projects

1. DFG Schwerpunktprogramm *Deduktion*: Project *Integration von automatischem und interaktivem Beweisen*, Runtime: 1994–1998.

   Co-Applicant and project leader with Prof. W. Menzel, Prof. P. Schmitt (University of Karlsruhe), and Prof. W. Reif (University of Augsburg).

2. Founding member of EC COST Action 15 *Many-Valued Logic for Computer Science Applications*, Runtime: 1995–1999.

   Management Committee member for Germany. Coordinator of the Work Group *Automated Deduction*.

3. DAAD/CSIC Acción Integrada *Algorithmen zur Manipulation diskreter Funktionen* between University of Karlsruhe and Institut d'Investigació en Intelligéncia Artificial (IIIA), Barcelona, Runtime: 1996.

   Project leader with Prof. P. Schmitt.

4. Project *Supercomputer Architecture and Declarative Languages* with Professors M. Amamiya and R. Hasegawa (University of Kyushu), Japanese Ministry for Education. Runtime: 1997–1998.

   Co-applicant and project leader for Germany.

5. Project *Advanced argument system based on theorem proving technologies* (with Prof. R. Hasegawa (project leader)), Runtime 1998–1999. Japanese Information Technology Promotion Agency (IPA).

   Co-applicant and project leader for Germany.

6. DFG (Deutsche Forschungsgemeinschaft) Project *Integrierter Deduktiver Software-Entwurf* (with Prof. W. Menzel, Prof. P. Schmitt, University of Karlsruhe). Runtime: 1998–2004.

   First phase (1998–2001): Principal investigator (until end of 2000).
   Second phase (2001–2004, after move to Sweden): co-leader with Professors P. Schmitt and B. Beckert.

7. DAAD/CAPES German-Brasilian Probral Project *Logische Modellierung praxisorientierter Deduktionssysteme* between University of Karlsruhe and Centro de Lógica, Epistemologia e História da Ciênca, Universidade de Campinas, Runtime: 1999–2000.

   Project leader with Prof. P. Schmitt.

8. Vinnova (Verket för innovationssystem): Subproject JAVA CARD in *Security in Network-Based Software Systems*. Runtime: 2001–2004.

   Co-Applicant und project leader.

9. Vetenskapsrådet (Swedish Research Council): Project *Partial Evaluation of Formal Specification Languages*. Runtime: 2002–2004.

   Principal investigator.

10. STINT (Swedish Foundation for International Cooperation in Research and Higher Education): "institutional grant" with AG Schmitt, University of Karlsruhe. Runtime: September 2002–September 2005.

    Principal investigator.

11. *Socrates* exchange agreement between Chalmers and Wilhelm-Schickard-Institut für Informatik, University of Tübingen (Prof. Küchlin) since 2003.

12. Volvo Technology AB, EAST-EEA Embedded Electronic Architecture, ITEA Project 00009: *Formal Language for Description of Design Requirmeents of Vehicle Components*. Runtime: April 2003–June 2004.

    Site leader for Chalmers.

13. Swedish Ministry of Transport (Vägverket), Programme IVSS (Intelligent Vehicle Safety Systems), Project *Cost Efficient Dependable Electronic Systems (CEDES)*. With industrial partners Volvo Technology AB, Volvo Cars AB, Autolivs AB. Runtime 2004–2008.

    Co-applicant and project leader.

14. EC FP6 Integrated Project Mobius. Runtime 2005–2008.

    Co-applicant, site leader for Chalmers.

15. European Science Foundation (ESF), Programme Exploratory Workshops, Workshop Grant EW05-119 *Challenges in Java Program Verification*, 16–18. October 2006.

    Principal investigator, workshop chair. Acceptance rate: 64 of 329 proposals.

16. EC ESF COST Action IC0701 *Formal Verification of Object-Oriented Software*. Runtime March 2008–March 2012.

    Initiator, co-applicant, vice chair, Management Committee member for Sweden 2007–2011, Management Committee member for Germany 2011–2012.

17. ARTEMIS Embedded Computing Systems Initiative, Collaborative Project CHARTER (Critical & High Assurance Requirements Transformed through Engineering Rigour). Runtime April 2009–March 2012.

    Co-Applicant, Site leader for Chalmers until Aug. 2011.

18. EC FP7 Integrated Project HATS (Highly Adaptable & Trustworthy Software using Formal Methods). Runtime March 2009–February 2013.

    13 participants in 8 countries, total contribution from EC ca. 5,8 M€, thereof ca. 820 k€ for Chalmers (until Aug. 2011) and TU Darmstadt (after Sep. 2011).

    Initiator, principal investigator, scientific coordinator, site leader Chalmers and TU Darmstadt.

19. EC FP7 Coordination Action *EternalS* (Trustworthy Eternal Systems via Evolving Software, Data and Knowledge). Runtime March 2010–February 2013.

    6 participants in 6 countries, total contribution from EC ca. 550 k€, thereof 75 k€ for Chalmers (until Aug. 2011) and TU Darmstadt (after Sep. 2011).

    Co-applicant, work package leader, site leader Chalmers and TU Darmstadt.

20. EC ESF COST Action IC0901 *Rich Model Toolkit*. Runtime October 2009–October 2013.

    Management Committee member for Sweden, Financial Rapporteur 2009–2011.

21. DFG (Deutsche Forschungsgemeinschaft) Project *Fully Automatic Logic-Based Information Flow*. Part of Priority Programme *Reliably Secure Software Systems, RS3* (SPP 1496). Runtime: 2012–2014.

    Principal Investigator (with Dr. Richard Bubel).

22. EC FP7 Support Action *Social-IST*. Runtime Oct 2012–Sep 2013.

    Travel grant. Member of Scientific Panel.

23. EC FP7 STREP ENVISAGE (Engineering Virtualized Services). Runtime October 2013–September 2016.

    8 participants in 5 countries, total contribution from EC ca. 3,2 M€, thereof ca. 400 k€ for TU Darmstadt.

    Co-initiator, principal investigator, site leader, work package leader.

24. European Science Foundation (ESF), Programme Exploratory Workshops, Workshop Grant EW13-064 *Combining Learning And Symbolic Analysis For Software Documentation And Mastering Change*, 10.–11. September 2014.

    13 k€ for organizing a workshop with invited presentations.

    Principal investigator, workshop co-chair. Acceptance rate: 24 of 220 proposals.

25. LOEWE Excellence Programme of the State of Hesse COMPUGENE. Runtime January 2016–December 2018.

    Total contribution ca. 4,4 M€, thereof ca. 200 k€ for my group.

    One of ten PIs, subproject leader.

26. Deutsche Bahn AG Innovationsallianz, project *FormBar*. Runtime March 2016–February 2019.

    Co-led project with Prof. A. Oetting (TU Darmstadt). My share ca. 300 k€.

    Co-initiator, PI, site leader.

27. DAAD (Deutscher Akademischer Auslandsdienst) *Double Master Degree TU Darmstadt + Universitas Indonesia*, Project Nr. 57372078. Runtime September 2017–September 2018.

    Contribution ca. 10 k€

    Main applicant.

28. LOEWE Excellence Programme of the State of Hesse SOFTWARE-FACTORY 4.0. Runtime January 2018–December 2021.

    Total contribution ca. 4,8 M€, thereof ca. 400 k€ for my group.

    One of eight PIs, co-initiator, member of Board of Directors.

29. Deutsche Bahn AG Innovationsallianz, project *FormETCS*. Runtime October 2017–September 2021.

    Co-led project with Prof. A. Oetting (TU Darmstadt). My share ca. 450 k€.

    Co-initiator, PI, site leader.

30. DFG (Deutsche Forschungsgemeinschaft) Project HA 2617/7–1 *Constraint-Based Operational Consistency of Evolving Software Systems*. Runtime 2019–2021.

    Joint project with Prof. Bernhard Steffen, TU Dortmund. Share of TU Darmstadt is ca. 200 k€.

    Co-Applicant, Principal Investigator.

31. DAAD (Deutscher Akademischer Auslandsdienst) *Double Master Degree in Computer Science, TU Darmstadt and Universitas Indonesia*, Project Nr. 557464400. Runtime September 2019–September 2022.

    Contribution ca. 100 k€

    Main applicant.

32. DFG (Deutsche Forschungsgemeinschaft) Project HA 2617/9-1 *KeY: A Deductive Software Analysis Tool for the Research Community*. Runtime 2021–2024.

Joint project with Prof. Bernhard Beckert, KIT. Share of TU Darmstadt is ca. 330 k€.

Co-Applicant, Principal Investigator.

33. National Research Center for Applied Cybersecurity ATHENE, *Model-centric Deductive Verification of Smart Contracts*. Runtime 2022–2025.

    Contribution ca. 460 k€.

    Co-Applicant, Co-PI (With Richard Bubel).

34. National Research Center for Applied Cybersecurity ATHENE, *Control-Flow Fingerprinting for Malware Detection*. Runtime 2024–2027.

    My share ca. 500 k€.

    Co-Applicant, Co-PI (With Haya Shulman and Michael Waidner).

Extended Research Visits

- State University of New York at Albany and University of New Haven/CT, USA, January 1993
- Institute for New Generation Computer Technology (ICOT) in Tokyo July–September 1994
- Institut d'Investigació en Intel·ligéncia Artificial (IIIA) of the Spanish Scientific Research Council (CSIC) in Barcelona, Spain, March 1996
- Graduate School of Information Science and Electrical Engineering, Kyushu University, Japan, July–August 1997
- Graduate School of Information Science and Electrical Engineering, Kyushu University, Japan, May 1998
- Graduate School of Information Science and Electrical Engineering, Kyushu University, Japan, September 1998
- Centro de Lógica, Epistemologia e História da Ciênca, Universidade de Campinas, Brasilien, March 1999
- University of Tübingen, Wilhelm-Schickard-Institute, November 2004
- University of Torino, Department of Computer Science, April–June 2016
- University of Oslo, Department of Computer Science, August–September 2016
- University and École Normale Supérieure Lyon, Laboratoire de l'Informatique du Parallélisme, Lyon, France, September 2021
- *Planned:* University of Bologna, Department of Computer Science, April–May 2024
- *Planned:* University of Antwerp, Department of Computer Science, August–September 2024

Editorial Boards and Special Issues of Peer-Reviewed Journals

— Editorial Boards —

- Member of Editorial Board of *Soft Computing: a Fusion of Foundations, Methodologies and Applications*, Springer (1997–2005)
- Member of Editorial Board of *Multiple-Valued Logic—An International Journal*, OCP Science (1998–2011)
- Member of Editorial Board of *LNCS Transactions on Foundations for Mastering Change*, Springer (2014–2020)
- Member of Editorial Board of book series *Lecture Notes in Logic, Language and Information* (LNLLI), subseries of Lecture Notes in Computer Science, Springer (since 2005)
- Member of Editorial Board of *Journal of Automated Reasoning*, Springer (since 2007)
- Member of Editorial Board of *International Journal on Software Tools for Technology Transfer*, Theme Area "Change", Springer (since 2022)

— Special Issues —

- With G. Escalada-Imaz (Institut d'Investigació en Intel·ligéncia Artificial, Barcelona): editor of special issue *Deduction in Many-Valued Logic* of *Mathware and Soft Computing* (nr 2, vol IV, 1997)
- Editor of special issue *Selected Papers from the 1997 International Conference of COST Action 15* Multiple-Valued Logic for Computer Science Applications of *Soft Computing—A Fusion of Foundations, Methodologies and Applications* (nr 3/4, vol 2 Sept. 1998/Feb. 1999)
- With W. Menzel (University Karlsruhe), W. Reif (University Ulm), and P. Schmitt (University Karlsruhe): editor of special issue *Integration of Deduction Systems* of *Journal for Universal Computer Science* (nr 5(3), March 1999)
- With G. Govaert (University Compiegne) and M. Nadif (University Metz): editor of special issue *Recent Advances in Knowledge and Discovery* of *Soft Computing—A Fusion of Foundations, Methodologies and Applications* (nr 5, vol 10, March 2006)
- With B. Beckert (University Koblenz) editor of special issue *Tests and Proofs* of *Journal of Automated Reasoning* (nr 4, vol 45, December 2010)
- With J. Giesl (RWTH Aachen) editor of special issue *Selected Papers of 5th International Joint Conference on Automated Reasoning* of *Journal of Automated Reasoning* (nr 4, vol 47, December 2011)

- With W. van der Aalst (RWTH Aachen) editor of special issue *Automated model analysis tools and techniques presented at FASE 2019* of *International Journal on Software Tools for Technology Transfer* (September 2020)

Program Committee Chair/Co-Chair

1. First *International Conference on Theorem Proving with Analytic Tableaux and Related Methods* in Lautenbach near Karlsruhe (March 1992)
2. Second *International Conference on Theorem Proving with Analytic Tableaux and Related Methods* in Marseille (April 1993)
3. Fourth *International Conference on Theorem Proving with Analytic Tableaux and Related Methods* in St. Goar near Koblenz (May 1995)
4. 28th *International Symposium on Multiple-Valued Logic* of the IEEE Computer Society in Fukuoka (May 1998)
5. Workshop *Integration of Deduction Systems* at International Conference on Automated Deduction in Lindau (July 1998)
6. European Science Foundation Exploratory Workshop EW05-119 *Challenges in Java Program Verification*, Nijmegen (October 2006)
7. Second *International Conference on Tests and Proofs*, Prato, Italien (April 2008)
8. International Dagstuhl Seminar 09411: *Interaction versus Automation: The Two Faces of Deduction* (October 2009)
9. 5th *International Joint Conference on Automated Reasoning* (IJCAR), Edinburgh, UK (July 2010)
10. Seminar of the Max-Planck-Society on Schloss Ringberg: *Deduction at Scale* (March 2011)
11. International Dagstuhl Seminar 13411: *Deduction and Arithmetic* (October 2013)
12. 5th *International Workshop on Invariant Generation* (WING), held as part of Federated Logic Conferences (FLoC), Vienna, Austria (July 2014)
13. European Science Exploratory Workshop EW13-064 *Combining Learning And Symbolic Analysis For Software Documentation And Mastering Change*, Darmstadt (September 2014)
14. International Dagstuhl Seminar 16172: *Machine Learning for Dynamic Software Analysis: Potentials and Limits* (April 2016)
15. 22nd *International Conference on Fundamental Approaches to Software Engineering* (FASE), held as part of European Joint Conferences on Theory and Practice of Software (ETAPS), Prague, Czech Republic (April 2019)
16. International Dagstuhl Seminar 20481: *Principles of Contract Languages* (November 2020); moved to November 2022 as Seminar 22451 due to Covid

17. Lorentz Center Workshop 23702: *Contract Languages*, Leiden, The Netherlands, (March 2024)

Member of Program Committee

1. 1st International Workshop on Theorem Proving with Analytic Tableaux and Related Methods in Lautenbach/Schwarzwald (May 1992)
2. 2nd International Workshop on Theorem Proving with Analytic Tableaux and Related Methods in Marseille (1993)
3. 3rd International Workshop on Theorem Proving with Analytic Tableaux and Related Methods in Abingdon/Oxford (1994)
4. 4th International Conference on Theorem Proving with Analytic Tableaux and Related Methods in St. Goar/Koblenz (1995)
5. 5th International Conference on Theorem Proving with Analytic Tableaux and Related Methods in Terrassini/Palermo (1996)
6. 2nd International Conference of COST Action 15 *Many-Valued Logics for Computer Science Applications* in Barcelona (June 1996)
7. 6th International Conference on Theorem Proving with Analytic Tableaux and Related Methods in Pont-à-Mousson/Nancy (1997)
8. Workshop *Many-valued logic for AI applications* at European Conference for Artificial Intelligence in Brighton (August 1998)
9. 7th International Conference on Theorem Proving with Analytic Tableaux and Related Methods in Oisterwijk/Tilburg (1998)
10. 8th International Conference on Theorem Proving with Analytic Tableaux and Related Methods in Saratoga Springs (June 1999)
11. Fifth International Conference on Artificial Intelligence and Symbolic Computation: Theory, Implementations and Applications in Madrid (July 2000)
12. 9th International Conference on Theorem Proving with Analytic Tableaux and Related Methods in St Andrews (July 2000)
13. Workshop *Precise Modelling and Deduction for Object-oriented Software Development* at International Joint Conference on Automated Reasoning (IJCAR) in Siena (June 2001)
14. First International Joint Conference on Automated Reasoning in Siena (June 2001)
15. Workshop *Uncertainty in Artificial Intelligenc* at Joint German/Austrian Conference on Artificial Intelligence in Vienna (Sept. 2001)
16. International Verification Workshop VERIFY'02 at Federated Logic Conferences (FLoC) in Copenhagen (July 2002)
17. Sixth International Conference on Artificial Intelligence and Symbolic Computation (AISC) in Marseille (July 2002)
18. Conference on Automated Deduction, CADE-18 in Copenhagen (July 2002)

19. International Conference on Theorem Proving with Analytic Tableaux and Related Methods in Copenhagen (July/August 2002)
20. Conference on Automated Deduction, CADE-19 in Miami (August 2003)
21. International Conference on Theorem Proving with Analytic Tableaux and Related Methods in Rome (September 2003)
22. Journées de l'Informatique Messine—Knowledge Discovery and Discrete Mathematics in Metz (September 2003)
23. Workshop *OCL 2.0—Industry standard or scientific playground?* at UML 2003 in San Francisco/CA (October 2003)
24. Model Driven Architecture: Foundations and Applications, MDAFA 2004 in Linköping (June 2004)
25. Second International Joint Conference on Automated Reasoning, IJCAR in Cork (July 2004)
26. Workshop *OCL 2004* at UML 2004 in Lisbon (October 2004)
27. 15th International Symposium on Methodologies for Intelligent Systems (ISMIS) in Saratoga Springs/NY (May 2005)
28. 3rd IEEE International Conference on Software Engineering and Formal Methods (SEFM) in Koblenz (September 2005)
29. International Conference on Theorem Proving with Analytic Tableaux and Related Methods, Koblenz (September 2005)
30. International Verification Workshop at Federated Logic Conferences (FLoC) in Seattle (August 2006)
31. 6th European Dependable Computing Conference, Coimbra (October 2006)
32. International Workshop on Invariant Generation, Linz (June 2007)
33. International Workshop on C/C++ Verification, Oxford, UK (July 2007)
34. International Conference on Theorem Proving with Analytic Tableaux and Related Methods, Aix-en-Provence (July 2007)
35. Conference on Automated Deduction, CADE-21 in Bremen (July 2007)
36. International Verification Workshop VERIFY at CADE-21 in Bremen (August 2007)
37. International Workshop on Automated Deduction: Decidability, Complexity, Tractability, at CADE-21 in Bremen (July 2007)
38. International Workshop on First-Order Theorem Proving (FTP) in Liverpool (September 2007)
39. 14th International Conference on Logic for Programming, Artificial Intelligence, and Reasoning (LPAR), Yerevan, Armenia (October 2007)
40. Second International Conference on Tests and Proofs, Prato, Italy (April 2008)

41. 9th IFIP WG 6.1 Working Conference on Formal Methods for Open Object-based Distributed Systems (FMOODS), Oslo, Norway (June 2008)
42. International Joint Conference on Automated Reasoning (IJCAR), Sydney, Australia (August 2008)
43. International Verification Workshop VERIFY at IJCAR in Sydney (August 2008)
44. International Workshop Complexity, Expressibility, and Decidability in Automated Reasoning CEDAR at IJCAR in Sydney (August 2008)
45. Second International Workshop on Invariant Generation WING at ETAPS, York (March 2009)
46. Third International Conference on Tests and Proofs, Zurich, Switzerland (July 2009)
47. International Conference on Theorem Proving with Analytic Tableaux and Related Methods, Oslo, Norway (August 2009)
48. Conference on Automated Deduction, CADE-22 in Montreal, Canada (August 2009)
49. Conference on Interactive Theorem Proving TPHOLS in Munich (August 2009)
50. 16th International Conference on Logic for Programming, Artificial Intelligence, and Reasoning (LPAR), Dakar, Senegal (April 2010)
51. International Conference on Formal Verification of Object-Oriented Software (FoVeOOS), Paris, France (June 2010)
52. 5th International Joint Conference on Automated Reasoning (IJCAR), Edinburgh, UK (July 2010)
53. Fourth International Conference on Tests and Proofs, Málaga, Spain (July 2010)
54. International Verification Workshop VERIFY at FLoC in Edinburgh, UK (July 2010)
55. 17th International Conference on Logic for Programming, Artificial Intelligence, and Reasoning (LPAR), Yogyakarta, Indonesia (October 2010)
56. 16th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS), Saarbrücken, Germany (March/April 2011)
57. 17th International Symposium on Formal Methods (FM), Lero, Irland (June 2011)
58. 5th International Conference on Tests and Proofs (TAP), Zurich, Switzerland (June–July 2011)
59. International Conference on Theorem Proving with Analytic Tableaux and Related Methods, Berne, Switzerland (July 2011)

60. Conference on Automated Deduction, CADE-23 in Wroclaw, Poland (July/ August 2011)
61. 2nd International Conference on Interactive Theorem Proving (ITP), Nijmegen, The Netherlands (August 2011)
62. 2nd International Conference on Formal Verification of Object-Oriented Software (FoVeOOS), Torino, Italy (October 2011)
63. 6th International Conference on Tests and Proofs, Prague, Czech Republic (May–June 2012)
64. 6th International Joint Conference on Automated Reasoning (IJCAR), Manchester, UK (June 2012)
65. 3rd International Conference on Interactive Theorem Proving (ITP), Princeton/NJ, USA (August 2012)
66. Joint workshops on Intelligent Methods for Software System Engineering at European Conference on Artificial Intelligence, Montpellier, France (August 2012)
67. 22nd International Symposium on Logic-Based Program Synthesis & Transformation (LOPSTR), Leuven, Belgium (September 2012)
68. 5th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISoLA), Heraclion, Crete (October 2012)
69. 10th International Conference on integrated Formal Methods (iFM), Turku, Finland (June 2013)
70. 7th International Conference on Tests and Proofs (TAP), Budapest, Hungary (June 2013)
71. IEEE International Workshop on Formal Methods Integration (FMi), USA (August 2013)
72. Fourth Workshop on Formal Methods and Analysis in Software Product Line Engineering (FMSPLE), Tokyo, Japan (August 2013)
73. International Conference on Theorem Proving with Analytic Tableaux and Related Methods, Nancy, France (September 2013)
74. 3rd International Conference on Certified Programs and Proofs (CPP), Australia (December 2013)
75. 8th International Conference on Tests and Proofs (TAP), York, UK (July 2014)
76. International Workshop on Automated Reasoning in Quantified Non-Classical Logics (ARQNL), held as part of Federated Logic Conferences (FLoC), Vienna, Austria (July 2014)
77. Joint Automated Reasoning Workshop and Deduktionstreffen (ARW-DT), held as part of Federated Logic Conferences (FLoC), Vienna, Austria (July 2014)

78. 8th International Verification Workshop (VERIFY), held as part of Federated Logic Conferences (FLoC), Vienna, Austria (July 2014)
79. 5th International Workshop on Invariant Generation (WING), held as part of Federated Logic Conferences (FLoC), Vienna, Austria (July 2014)
80. 6th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISoLA), Corfu, Greece (October 2014)
81. 12th International Conference on Artificial Intelligence and Symbolic Computation (AISC), Seville, Spain (December 2014)
82. 21st International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS), London, UK (April 2015)
83. 6th Workshop on Formal Methods and Analysis of Software Product Line Engineering (FMSPLE), London, UK (April 2015)
84. 20th Formal Methods Symposium, Oslo, Norway (June 2015)
85. 9th International Conference on Tests and Proofs (TAP), L'Aquila, Italy (July 2015)
86. 17th Workshop on Formal Techniques for Java-like Programs (FTfJP), Prague, Czech Republic (July 2015)
87. 25th International Conference on Automated Deduction, CADE-25 in Berlin, Germany (August 2015)
88. 3rd IEEE International Workshop on Formal Methods Integration (FMi), San Francisco, USA (August 2015)
89. International Conference on Theorem Proving with Analytic Tableaux and Related Methods, Wroclaw, Poland (September 2015)
90. 8th International Joint Conference on Automated Reasoning (IJCAR), Coimbra, Portugal (June/July 2016)
91. 10th International Conference on Tests and Proofs (TAP), Vienna, Austria (July 2016)
92. 30th European Conference on Object-Oriented Programming (ECOOP), Rome, Italy (July 2016)
93. 1st International Workshop on Verification of Objects at RunTime EXecution (VORTEX), Rome, Italy (July 2016)
94. 5th European Conference on Service-Oriented and Cloud Computing (ESOCC), Vienna, Austria (September 2016)
95. 7th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISoLA), Heraclion, Crete (October 2016)
96. 6th ACM-SIGPLAN Conference on Certified Programs and Proofs (CPP), Paris, France (January 2017)
97. 21st International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR), Maun, Botswana (May 2017)

98. 26th International Conference on Automated Deduction, CADE-26 in Gothenburg, Sweden (August 2017)
99. First International Workshop on Automated Reasoning: Challenges, Applications, Directions, Exemplary Achievements (ARCADE) at CADE in Gothenburg, Sweden (August 2017)
100. 13th International Conference on integrated Formal Methods (iFM), Turin, Italy (September 2017)
101. 6th European Conference on Service-Oriented and Cloud Computing (ESOCC), Oslo, Norway (September 2017)
102. 7th International Conference on Certified Programs and Proofs (CPP), Los Angeles, USA (January 2018)
103. 21st International Conference on Fundamental Approaches to Software Engineering (FASE), Thessaloniki, Greece (April 2018)
104. 12th International Conference on Tests and Proofs (TAP), Toulouse, France (June 2018)
105. 3rd International Workshop on Verification of Objects at RunTime EXecution (VORTEX), Amsterdam, The Netherlands (July 2018)
106. 22nd International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR), Ethiopia (December 2018)
107. 22nd International Conference on Fundamental Approaches to Software Engineering (FASE), Prague, Czech Republic (April 2019)
108. 13th International Conference on Tests and Proofs (TAP), Porto, Portugal (July 2019)
109. 2nd International Workshop on Automated Reasoning: Challenges, Applications, Directions, Exemplary Achievements (ARCADE) at CADE in Natal, Brazil (August 2019)
110. 28th International Conference on Theorem Proving with Analytic Tableaux and Related Methods, London, UK (September 2019)
111. 23rd International Symposium on Formal Methods (FM), Porto, Portugal (October 2019)
112. 2nd Workshop on Dynamic Logic: New trends and applications (DaLí) at FM in Porto, Portugal (October 2019)
113. 23rd International Conference on Fundamental Approaches to Software Engineering (FASE), Dublin, Ireland (April 2020)
114. 9th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISoLA), Rhodes, Crete (October 2020)
115. 3rd Workshop on Dynamic Logic: New trends and applications (DaLí), Prague, Czech Republic (October 2020)

116. 17th International Colloquium on Theoretical Aspects of Computing (ICTAC), Macau S.A.R., China (December 2020)
117. 3rd International Workshop on Automated Reasoning: Challenges, Applications, Directions, Exemplary Achievements (ARCADE) at CADE (virtual, July 2021)
118. 16th International Conference on Tests and Proofs (TAP), Nantes, France (July 2022)
119. 4th Workshop on Dynamic Logic: New trends and applications (DaLí), Haifa, Israel (July/August 2022)
120. 25th International Symposium on Formal Methods (FM), Lübeck, Germany (March 2023)
121. 17th International Conference on Tests and Proofs (TAP), Leicester, UK (July 2023)
122. 27th International Conference on Fundamental Approaches to Software Engineering (FASE), Luxembourg, Luxembourg (April 2024)
123. 26th International Symposium on Formal Methods (FM), Milan, Italy (September 2024)
124. 18th International Conference on Tests and Proofs (TAP), Milan, Italy (September 2024)
125. 21st International Colloquium on Theoretical Aspects of Computing (ICTAC), Bangkok, Thailand (November 2024)

Invited Talks at International Conferences and Workshops

1. *Uses of Many-Valued Logic in Hardware Verification*, Dagstuhl-Seminar 9310 on Deduction, March 1993

2. *Many-Valued Logic and Mixed Integer Programming*, ESSLLI Workshop Many-Valued Logic Proof Theory, Prague, August 1996

3. *Restart Tableaux with Selection Function*, Dagstuhl-Seminar 9709 on Deduction, February 1997

4. *Semantic Semantic Tableaux*, Dagstuhl-Seminar 99091 on Deduction, March 1999

5. Invited Tutorial *Proof Confluent Tableau Calculi* (mit B. Beckert), International Conference on Theorem Proving with Analytic Tableaux and Related Methods, Saratoga Springs/NY, June 1999

6. *A survey of signed CNF-formulas*, Affiliated Symposium *Multiple-Valued Logic* des *11th International Congress of Logic, Methodology and Philosophy of Science*, Kraków, August 1999

7. *Deduction in Multiple-Valued & Signed Logic*, Seminar 3ème cycle romand d'informatique: Automated Inference and Deduction, Schloß Muenchenwiler, Switzerland, November 1999

8. *Towards Integrated Formal Object-Oriented Modeling*, 7th European Workshop Logic in Artificial Intelligence (JELIA), Malaga, October 2000

9. *The KeY-Approach: Integrating Object-Oriented Design and Formal Verification*, Dagstuhl Seminar 01101 on Deduction, March 2001

10. Invited Tutorial *Complexity of Many-Valued Logics*, International Symposium on Multiple-Valued Logic (ISMVL), Warsaw, May 2001

11. *The Logic of KeY*, Gesellschaft für Informatik Workshop of Sections *Deduktion* and *Logik in der Informatik*, Freiburg, October 2002

12. *A Theorem Proving Approach to Analysis of Secure Information Flow*, Dagstuhl Seminar 03411 on Language-Based Security, October 2003

13. *Integration of Informal & Formal Development of Object-Oriented Safety-Critical Software: A Case Study with the KeY System*, Eighth International Workshop on Formal Methods for Industrial Critical Systems (FMICS 03), Trondheim, June 2003

14. *Software in Multiple-Valued Logics*, Journées de l'Informatique Messine (JIM' 2003), Knowledge Discovery and Discrete Mathematics, Metz, September 2003

15. *Software in Multiple-Valued Logics*, International Workshop *The Logic of Soft Computing III*, Siena, November 2003

16. *Verification of Safety Properties in the Presence of Transactions*, International Workshop *Construction and Analysis of Safe, Secure and Interoperable Smart cards*, INRIA Sophia Antipolis, Marseille, March 2004

17. *Many-Valued logic in formal specification languages*, European Science Foundation (ESF) Workshop "The challenge of semantics", Vienna, July 2004

18. *Automatic Formal Verification of Loops*, Dagstuhl Seminar 05431 on Deduction and Applications, October 2005

19. *Verification by Parallelization of Parametric Code*, Algebraic and Proof-theoretic Aspects of Non-classical Logics: symposium in honour of Daniele Mundici on occasion of his 60th birthday, Gargnano, 20. March 2006

20. *Verification-Based Test Generation*, Dagstuhl Seminar 06281 on The Challenge of Software Verification, July 2006

21. *Verification of Loops by Parallelization*, European Science Foundation (ESF) Workshop " Challenges in Java Program Verification", Nijmegen, October 2006

22. *Discovery of Induction Rules for Verification of Imperative Programs*, 1st Workshop on INvariant Generation, Linz, 25. June 2007

23. *Abstract Interpretation of Symbolic Execution with Explicit State Updates*, 6th Intl. Symposium on Formal Methods for Components and Objects, Sophia Antipolis, 23. October 2008

24. *HATS: an Integrated ICT Project within EC Framework 7*, Dagstuhl Seminar 09292 on The Java Modeling Language (JML), 16. July 2009

25. *Symbolic Execution and Partial Evaluation*, Dagstuhl Seminar 09411 on Interaction vs. Automation: the Two Faces of Deduction, 5. October 2009

26. *HATS Project Overview and Scalable Verification*, 7th Intl. Symposium on Formal Methods for Components and Objects, Eindhoven, 4. November 2009

27. *Implementing a Partial Evaluator via a Software Verification Tool*, 8th Intl. Symposium on Formal Methods for Components and Objects, Graz, 30. November 2010

28. *Formal Verification of Software Product Families*, 28th British Colloquium for Theoretical Computer Science, Manchester, 3. April 2012

29. *Glassbox vs. Blackbox Software Analysis*, Dagstuhl Seminar 12271: AI meets Formal Software Development, July 2012

30. *Abstract Symbolic Execution*, Dagstuhl Seminar 12511: Divide and Conquer: the Quest for Compositional Design and Analysis, December 2012

31. *Abstract Symbolic Execution*, Dagstuhl Seminar 13091: Analysis, Test and Verification in The Presence of Variability, February 2013

32. *Delta-Oriented Specification*, NII Shonan Meeting: The Java Modeling Language (JML), May 2013

33. *KeY-ABS: A Logic and Verification Tool for ABS*, Lorentz Center Conference: Reliability of Concurrent and Distributed Software, Leiden, May 2014

34. *Fully Abstract Method Calls*, NII Shonan Meeting: Software Contracts For Communication, Monitoring, and Security, May 2014

35. *Deductive Verification*, ESF Workshop EW13-064: Combining Learning And Symbolic Analysis For Software Documentation And Mastering Change, September 2014

36. *Abstract Operation Contracts*, NII Shonan Meeting: Static analysis meets runtime verification, March 2015

37. *Abstract Contracts*, Lorentz Center Conference: JML: Advancing Specification Language Methodologies, Leiden, March 2015

38. *Exploit Generation for Information Flow Leaks in Object-Oriented Programs*, Dagstuhl Seminar 15381: Information from Deduction: Models and Proofs, 14. September 2015

39. *The KeY Platform for Verification and Analysis of Java Programs*, Dagstuhl Seminar 16131: Language Based Verification Tools for Functional Programs, 29. March 2016

40. *Array Abstraction with Symbolic Pivots*, Symposium in Honour of the 60. Birthday of Frank S. De Boer, Eindhoven, 3. April 2016

41. *Static Analysis*, Dagstuhl Seminar 16172: Machine Learning for Dynamic Software Analysis: Potentials and Limits, 25. April 2016

42. *Can Formal Methods Improve the Efficiency of Code Reviews?*, 12th International Conference on Integrated Formal Methods (iFM), Reykjavik, Iceland, 1. June 2016

43. *Refined Resource Analysis Based on Cost Relations*, 15th International Workshop on Termination (WST), Obergurgl, Austria, 5. September 2016

44. *A Dynamic Logic with Traces and Coinduction*, Many-valued logic: Algebraic, Geometric and Computational Aspects: symposium in honour of Daniele Mundici on occasion of his 70th birthday, Milan, 26. September 2016

45. *Towards Incremental Validation of Railway Systems*, Conference Track on *Variability modelling for scalable software evolution* at 7th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation, Heraclion, Crete, Greece, October 2016

46. *KeY and the verification of TimSort*, British Computer Society FACS Group and Formal Methods Europe: Annual Peter Landin Semantics Seminar, May 2017

47. *Abstract Behavioral Specification*, International Workshop Towards Holistic Computational Engineering, Darmstadt, June 2017

48. *Abstraction Refinement for the Analysis of Software Product Lines*, 11th International Conference on Tests and Proofs (TAP), Marburg, Germany, July 2017

49. *Why User Experiments Matter for Automated Reasoning*, Dagstuhl Seminar 17371: Deduction Beyond First-Order Logic, September 2017

50. *Locally Abstract, Globally Concrete Semantics of Concurrent Programming Languages*, 26th International Conference on Automated Reasoning with Analytic Tableaux and Related Methods, Brasilia, Brazil, September 2017

51. *Same Same But Different: Interoperability of Software Product Line Variants*, Symposium for Arnd Poetzsch-Heffter on the Occasion of his 60th Birthday, Kaiserslautern, November 2018

52. *Abstract Execution*, Dagstuhl Seminar 19371: Deduction Beyond Satisfiability, September 2019

53. *Validierung und Verifikation*, Werken und Welten der Konstruktionskünste, Schader Forum Darmstadt, June 2022

54. *Formal Specification with Contracts*, Dagstuhl Seminar 22451: Principles of Contract Languages, November 2022

55. *Context-aware Trace Contracts*, 21st International Conference on Software Engineering and Formal Methods (SEFM), Eindhoven, The Netherlands, November 2023

56. *A Denotational Finite-Trace Semantics and Logic for While*, Nordic Workshop on Programming Theory (NWPT), Västeras, Sweden, November 2023

57. *An Expressive Trace Logic for Imperative Programs*, Lorentz Center Workshop 23702: *Contract Languages*, Leiden, The Netherlands, March 2024

Other Talks at International Conferences and Workshops

1. *Towards an efficient Tableau Proof Procedure for Multiple-Valued Logics*, Computer Science Logic, Heidelberg, October 1990

2. *Uniform Notation of Tableaux Rules for Multiple-Valued Logics*, International Symposium on Multiple-Valued Logic, Victoria, May 1991

3. *Analytic Tableaux & Integer Programming*, Artificial Intelligence and Symbolic Mathematical Computing, Karlsruhe, August 1992

4. *Automatisches Beweisen in mehrwertiger Logik und Hardware Verifikation*, ITG/-GI Workshop, Bad Herrenalb, March 1993

5. *Short CNF in Finitely-Valued Logics*, Methodologies for Intelligent Systems, Trondheim, June 1993

6. *Verification of Switch Level Designs with Many-Valued Logic*, International Conference on Logic Programming and Automated Reasoning, St. Petersburg, July 1993

7. *Efficient Deduction in Many-Valued Logics*, AAAI Fall Symposium on Automated Deduction in Non-Classical Logic, October 1993

8. *New Applications of Linear Optimization in Automated Reasoning*, German/Japanese Mini-Workshop on Finite Domain Theorem Provers, ECRC, Munich, March 1994

9. *Tableaubasiertes prädikatenlogisches Beweisen mit Mixed integer programming*, Conference of DFG Schwerpunktprogramm Deduktion, Darmstadt, March 1994

10. *Comparing and Evaluating Proof Calculi*, AISB Workshop on Bridging the Gap between Theory and Practice, Leeds, April 1994

11. *Efficient Deduction in Many-Valued Logics*, International Symposium on Multiple-Valued Logic, Boston, May 1994

12. *Improving Temporal Logic Tableaux using Integer Constraints*, Temporal Logic, First International Conference, Bonn, July 1994

13. *Deduction by combining semantic tableaux and integer programming*, Computer Science Logic, Paderborn, September 1995

14. *Model Generation Theorem Proving with Interval Constraints*, Post ILPS Workshop on Interval Constraints, Portland, December 1995

15. *Commodious Axiomatization of Quantifiers in Multiple-Valued Logic*, International Symposium on Multiple-Valued Logic, Santiago de Compostela, May 1996

16. *Proof Theory of MVL & Hardware Design*, Annual Conference of COST Action 15, IFBI Schloß Dagstuhl, October 1997

17. *Many-Valued Anti-Links*, COST Action 15 Workshop, TU Vienna, November 1998

18. *Transformations between Signed and Classical Clause Logic*, International Symposium on Multiple-Valued Logic, Freiburg, May 1999

19. *On the Regular 2-SAT Problem of Signed CNF Formulas*, International Symposium on Multiple-Valued Logic, Portland, May 2000

20. *Model Generation Theorem Proving with Finite Interval Constraints*, First International Conference on Computational Logic, London, July 2000

21. *The KeY System: Integrating Object-Oriented Design and Formal Methods*, Formal Aspects of Computing, Tool Demo Session, Grenoble, 9. April 2002

22. *A Theorem Proving Approach to Analysis of Secure Information Flow*, 2nd International Conference on Security in Pervasive Computing, 6. April 2005

23. *Automatic Unit Test Case Generation for Java Programs and Specifications*, Lindholmen Software Development Day, Gothenburg, 4. October 2006

24. *Automating Verification of Loops by Parallelization*, European Science Foundation Exploratory Workshop on Challenges in Java Program Verification, 17. October 2006

25. *Integration of a Security Type System into a Program Logic*, Trustworthy Global Computing, Lucca, 8. November 2006

26. *Automating Verification of Loops by Parallelization*, International Conferences on Logic for Programming, Artificial Intelligence and Reasoning (LPAR), 16. November 2006

27. *Verification-Based Test Generation for Java Card Software*, Conference on Tests and Proofs, Zürich, 13. February 2007

28. *A Hoare-Style Calculus with Explicit State Updates*, Formal Methods in Computer Science Education (FORMED), Budapest, 29. March 2008

29. *Highly Adaptable and Trustworthy Software Using Formal Methods: a Proposal for an Integrated Project within FP7*, 2nd Management Committee and Work Group Meeting of COST Action IC0701, Gothenburg, 3. June 2008

30. *Specification Predicates with Explicit Dependency Information*, 5th International Verification Workshop, Sydney, 10. August 2008

31. *HATS: Highly Adaptable and Trustworthy Software Using Formal Methods*, Software Technologies Concertation on Formal Methods for Components and Objects (FMCO), Sophia-Antipolis, 23. October 2008

32. *Abstract Interpretation of Symbolic Execution for Information Flow Analysis*, 2nd Management Committee and Work Group Meeting of COST Action IC0701, Madrid, 1. December 2008

33. *Why Participate in an FP7 Project?*, Information Day EU Projects, Chalmers University of Technology & Gothenburg University, Gothenburg, 6. May 2009

34. *Abstract Interpretation of Symbolic Execution for Information Flow Analysis*, 4th Annual MOBIUS Project Meeting, Madrid, 18. June 2009

35. *Why Participate in an FP7 Project?*, Seminar for EU project proposals, Chalmers University of Technology, Gothenburg, 28. October 2009

36. *HATS: Highly Adaptable and Trustworthy Software using Formal Models*, 4th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISOLA), 20. October 2010

37. *Task Forces in the EternalS Coordination Action*, 4th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISOLA), 20. October 2010

38. *Implementing a Partial Evaluator via a Software Verification Tool*, Seminar "Deduction at Scale" OF Max-Planck-Society, Ringberg Castle, 9. March 2011

39. *A Liskov Principle for Delta-Oriented Programming*, 2nd International Conference on Formal Verification of Object-Oriented Software (FoVeOOS), Torino, 7. October 2011

40. *Formale Methoden für die Zertifizierung von Java-Programmen*, Java Embedded Technology Conference (JET-CON), Munich, 8. February 2012

41. *HATS Project: Activities Related to Security Engineering*, WebSand Project Meeting, Chalmers University, Gothenburg, 29. August 2012

42. Panel Contribution on *Global Management in Service-Oriented and Cloud Computing: Challenges and Open Issues*, Service-Oriented and Cloud Computing, First European Conference, (ESOCC), Bertinoro, 21. September 2012

43. *A Liskov Principle for Delta-Oriented Programming*, 5th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISoLA), Heraclion, 15. October 2012

44. *Functional verification of Evolving Software Product Lines*, Third International Workshop on Trustworthy Eternal Systems via Evolving Software, Data and Knowledge, Versailles, 27. February 2013

45. *Reuse in Software Verification by Abstract Method Calls*, 24th International Conference on Automated Deduction (CADE), Lake Placid, June 2013

46. *Modular Verification with Abstract Contracts*, Deduktionstreffen 2013, Koblenz, 17. October 2013

47. *Fully Abstract Operation Contracts*, 6th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISOLA), Corfu, 8. October 2014

48. *Foundations of Mastering Change: Two Research Challenges*, 6th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISOLA), Corfu, 11. October 2014

49. *A Dynamic Logic with Traces and Coinduction*, Automated Reasoning with Analytic Tableaux and Related Methods (TABLEAUX), Wroclaw, 22. September 2015

50. *Model-Based Parallelization of Legacy Software*, First Workshop on Advances in Knowledge Extraction and Re-engineering of Software (WAKERS), Stellenbosch, 24. January 2017

51. *Reasoning about Concurrency with ABS*, Braunschweig Workshop on Parallelism, TU Braunschweig, 6. June 2017

52. *Colorful Boxes*, 7th Biennial Conference of the Society for Philosophy of Science in Practice (SPSP), Ghent, Belgium, 2. July 2018

53. *Locally Abstract, Globally Concrete Semantics*, International Workshop on the Abstract Behavioral Specification Language (ABS), Online, 26. August 2021

54. *Towards a Usable and Sustainable Deductive Verification Tool*, 11th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISOLA), Rhodes, Greece, 27. October 2022

Colloquia and Seminars

1. Department of Artificial Intelligence, University of Edinburgh, UK, November 1991
2. Department of Computing, Imperial College, London, UK, December 1991
3. Department of Computer Science, TU Munich, December 1992
4. Department of Computer Science, State University of New York at Albany, USA, January 1993
5. Kurt-Gödel-Society, Vienna, Austria, March 1993
6. Max-Planck-Institut für Informatik, Saarbrücken, April 1993
7. Fakultät für Informatik, University of Paderborn, July 1993
8. School of Management and Business Administration, Carnegie-Mellon University, Pittsburgh, USA, October 1993
9. Dipartimento di Scienza della Informazione, University of Milan, Italy, November 1993
10. Dipartimento di Scienza della Informazione, University of Rome "La Sapienza", Italy, November 1993
11. NTT Research Labs, Nara, Japan, August 1994
12. Mitsubishi Central Research Labs, Osaka, Japan, August 1994
13. Fakultät für Informatik, TU Darmstadt, February 1995
14. Kurt-Gödel-Society, Vienna, Austria, May 1995
15. Research Institute for Symbolic Computation (RISC), University of Linz, Austria, October 1995
16. Institut d'Investigació en Intel·ligéncia Artificial (IIIA), Barcelona, Spain, March 1996
17. Institut für Logik und Wissenschaftstheorie, TH Leipzig, June 1996
18. Centro de Lógica, Epistemologia e História da Ciênca, Universidade de Campinas, Brasilien, September 1996
19. Technisch-Naturwissenschaftliche Fakultät, TU Vienna, October 1996
20. Graduate School of Information Science and Electrical Engineering, University of von Kyushu, Fukuoka, Japan, August 1997

21. Graduate School of Information Sciences, Tohoku University, Sendai, Japan, August 1997

22. Fachbereich Informatik, University of Dortmund, November 1997

23. Fakultät für Informatik, Technical University of Dresden, December 1997

24. Seminar of the Polish Association for Logic and History of Science, Institute for Telecommunications, Warsaw, April 1998

25. Laboratoire de mathématiques discrètes, Université Claude Bernard Lyon, June 1998

26. Dipartimento di Scienza della Informazione, University of Catania, November 1998

27. Centro de Lógica, Epistemologia e História da Ciênca, Universidade de Campinas, Brasil, March 1999

28. Department of Computing Science, Chalmers University, Gothenburg, Sweden, October 1999

29. Prover Technology AB, Stockholm, Sweden, June 2000

30. Institut für Informatik, University of Freiburg, October 2000

31. Centrum voor Wiskunde en Informatica, Amsterdam, June 2001

32. Department of Computer Science, University of Linköping, Sweden, October 2001

33. Fachbereich Informatik, University of Koblenz-Landau, July 2003

34. Institut für Informatik, University of Freiburg, July 2003

35. Dipartimento di Scienza della Informazione, University of Verona, November 2003

36. Fakultät für Informatik, University of Karlsruhe, November 2003

37. Department of Microelectronics and Information Technology, Royal Institute of Technology (KTH), Stockholm May 2004

38. Fachbereich Informatik, University of Dortmund, June 2004

39. Wilhelm-Schickard-Institut, University of Tübingen, November 2004

40. Security of Systems Group, Radboud University Nijmegen, April 2006

41. GlobalPlatform Association, Card Committee Meeting, Paris, October 2006

42. Universitá degli Studie di Milano-Bicocca, Milan, April 2007

43. Universitetet i Oslo, Institutt for informatikk, Oslo, September 2007
44. Fakultät für Informatik, University of Karlsruhe, July 2009
45. Eidgenössische Technische Hochschule (ETH) Zurich, September 2009
46. Fakultät für Informatik, TU Darmstadt, December 2009
47. Graduate School of Information Science and Electrical Engineering, University of Kyushu, Fukuoka, Japan, February 2010
48. Kobe University, Japan, February 2010
49. Dept. of Computer Science and Engineering, Waseda University, Tokyo, Japan, February 2010
50. Department of Philosophy, Linguistics and Theory of Science, University of Gothenburg, Sweden, November 2010
51. Ericsson AB Gothenburg, Design Forum, April 2011
52. Department of Computer Science, Technical University of Braunschweig, Germany, May 2011
53. Department of Computer Science, University of Genoa, Italy, October 2011
54. SAP AG, Darmstadt, Germany, November 2011
55. Google Germany Inc., Munich, Germany, September 2012
56. Department of Mathematics, Technical University of Darmstadt, Germany, October 2012
57. Software-Technologie-Initiative Kaiserslautern, Fraunhofer IESE, Kaiserslautern, February 2013
58. Fakultät für Informatik, TU Wien, Austria, March 2013
59. Departamento de Ciencias de la Computación, Universidad de Chile, March 2013
60. Hochschule für Technik und Wirtschaft Berlin, April 2013
61. DB Systel GmbH, Frankfurt, Germany, June 2013
62. Division of Software Technology, Department of Computer Science, Chalmers University of Technology, Varberg, Sweden, February 2014
63. Department of Computer Science, University of Indonesia, Jakarta, April 2014
64. Deutsche Bahn AG, Frankfurt, Germany, April 2014

65. Bosch Engineering, Abstatt, April 2014
66. aicas GmbH, Karlsruhe, July 2014
67. Department of Computer Science (FASILKOM), University of Indonesia, Jakarta, January 2015
68. Department of Computer Science (FASILKOM), University of Indonesia, Jakarta, January 2016
69. Dipartimento di Scienza della Informazione, University of Torino, May 2016
70. Fakultät Elektrotechnik und Informatik, TU Berlin, November 2016
71. Fachbereich Informatik, Technical University of Dortmund, March 2018
72. Department of Computer Science (FASILKOM), University of Indonesia, Jakarta, March 2018
73. SBA Research and Technische Universität Wien, November 2018
74. Department of Computer Science (FASILKOM), University of Indonesia, Jakarta, December 2019
75. Laboratoire de l'Informatique du Parallélisme (LIP), CNRS, ENS Lyon, September 2021
76. Department of Computer Science (FASILKOM), University of Indonesia, Jakarta, September 2022
77. Institut für Informatik, University of Rostock, January 2024
78. Faculty of Computer Science, University of Dortmund, January 2024
79. Faculty of Informatics, Technical University of Vienna, March 2024

Reviewer for Research Funding Organisations

- National Science Foundation of the USA
- Research Council of Canada
- EU Marie Curie European Fellowships, Framework Programme 6
- NWO, Dutch National Science Foundation
- ESF, European Science Foundation
  - COST actions
  - Postdoctoral Fellowships 2020
- Academy of Finland, Evaluation Panel Computer Science 2009
- FNSNF, Swiss National Science Foundation
- Australian National University Evaluation 2009
- SSF, Stiftelsen för Strategisk Forskning, Sweden
  - Panel Member, Call for Research on Software-Intensive Systems 2010
  - Panel Member, Half-time review of projects on Software-Intensive Systems 2014
- DFG, Deutsche Forschungsgemeinschaft
  - Individual Research grants (regularly 2–3 proposals per year)
  - Graduate research centres 2016, 2021
  - Review board for Call "Research Software 2023"
- Karlsruhe Institute of Technology (KIT)
  - Undergraduate and Graduate Programme 2014
  - Undergraduate and Graduate Programme 2019
- Elitenetzwerk Bayern 2019
- ERC Starting Grants 2020
- Alexander von Humboldt Foundation
  - Humboldt Research Fellowships 2022
- INRIA Team Evaluation Committee 2024

4 Teaching

Bachelor and Masters Level

— In German —

- Department of Computer Science and Engineering, University of Karlsruhe, Masters level course *Automatisches Beweisen*, 3h per week, summer term 1994
- Department of Computer Science and Engineering, University of Karlsruhe, Masters level course *Automatisches Beweisen*, 3h per week, summer term 1997
- Department of Computer Science and Engineering, University of Karlsruhe, Masters level course *Automatisches Beweisen*, 3h per week, summer term 1998
- Technisch-Wissenschaftliche Fakultät, TU Vienna, Masters level compact course *Automatisches Beweisen mit Tableaumethoden*, April 1997
- Masters level compact course *AK der Theoretischen Informatik 2: Beweistheorie und Automatisches Beweisen in nichtklassischen Logiken*, Technisch-Wissenschaftliche Fakultät, TU Vienna, October 1998
- Masters level compact course *AK der Theoretischen Informatik 4: Formale Methoden für objekt-orientiertes Programmieren*, Technisch-Wissenschaftliche Fakultät, TU Vienna, January 2001
- Masters level compact course *Formale Spezifikation und Verifikation mit KeY*, Wilhelm-Schickard-Institut für Informatik, University of Tübingen, November 2004
- Bachelor level compulsory course *Formale Grundlagen der Informatik III* (3. Semester), 6CP, Winter 2012–13 and 2013–14, Technische Universität Darmstadt
- Bachelor level compulsory course *Formale Methoden im Softwareentwurf* (3./4. Semester), 6CP, Summer 2018, Winter 2018–19, Winter 2019–20, Summer 2023, Technische Universität Darmstadt
- Bachelor level compulsory course *Software Engineering* (3. Semester), 6CP, Winter 2020–21 and 2021–22, Technische Universität Darmstadt

— In English —

- Bachelor level course (1st year) *Programming for Natural Scientists with Java*, Winter 2000/01, University of Gothenburg

- Bachelor level project course (2nd year) *Software Design* for IT students, Spring 2003, Chalmers University of Technology
- Masters level course *Artificial Intelligence*, held eight times 2000–2007, University of Gothenburg/Chalmers University of Technology
- Masters level course *Software Engineering using Formal Methods*, held five times 2004–2008, Chalmers University of Technology
- Bachelor level course (3rd year) *Testing, Debugging, and Verification*, held four times 2007–2010, Chalmers University of Technology
- Masters level course *Software Engineering using Formal Methods*, 6CP, Winter 2011–12, Technische Universität Darmstadt
- Masters level course *Automated Theorem Proving*, 6CP, Summer 2012, 2013, 2014; Winter 2016–17, 2017–18, 2021–22, 2022–23, 2023–24, Technische Universität Darmstadt
- Masters level course *Formal Specification and Verification of Software*, 6CP, Summer 2017, 2019, 2021, 2022 Technische Universität Darmstadt

— Teaching Impact —

The course *Software Engineering using Formal Methods* has been adopted (in parts) by several reknown international universities:

- *22c:181, Formal Methods in Software Engineering Spring 2010*, Department of Computer Science, University of Iowa
- *Méthodes Formelles pour le développement de logiciels sûrs (M1, parcours GL)*, Institut de Formation Supérieure en Informatique et Communication, University of Rennes
- *15-819M: Data, Code, Decisions*, Computer Science Department, Carnegie Mellon University
- *Formal Methods in Software Development, KV3/326.013, KV4/326.053*, RISC (research institute for symbolic computation), Linz

The same holds for the course *Testing, Debugging, and Verification*:

- *Selected Topics of Software Engineering WS 2009/10 LZK 703907 + LZK 703765*, University of Innsbruck
- *Graduate Course on Program Analysis, Verification and Optimization*, Facultad de Informática der Universidad Politécnica de Madrid

In all of these courses (and in many others) the KeY tool is used.

Postgraduate Supervision and Teaching

— Director/Vice-Prefect of Postgraduate Studies —

In the *Division of Computing Science* at Chalmers University I was from January 2001 until October 2004 *Director of Graduate Studies* ("Graduate" means Ph.D.-level here) for ca. 45 Ph.D. students. From November 2003 until December 2009 I was *Vice-Prefect for Postgraduate Studies* of the *Department of Computer Science and Engineering* with ca. 75 Ph.D. students in three different Ph.D. programmes.

— Supervision of Ph.D. Students —

At the moment, I am main or joint supervisor of: Stefan Dillmann, Daniel Drodt, Lukas Graetz, Asma Heydari Tabar, Marco Scaletta, and Anna Schmitt. In the past I have been main supervisor of the following Ph.D. students:

1. Dr. Wolfgang Ahrendt (defense July 2001), Fakultät für Informatik, University of Karlsruhe. Now Professor of Computer Science at Chalmers University of Technology.

2. Dr. Thomas Baar (defense July 2002), Fakultät für Informatik, University of Karlsruhe. Now Professor of Computer Science at Hochschule für Technik und Wirtschaft Berlin.

3. Dr. Martin Giese (defense July 2002 *summa cum laude*), Fakultät für Informatik, University of Karlsruhe. Now Full Professor of Computer Science at University of Oslo.

4. Dr. Wojciech Mostowski (defense March 2005), Department of Computer Science and Engineering, Chalmers University. Now Associate Professor of Computer Science at Halmstad University.

5. Dr. Niklas Sörensson (defense September 2008), Department of Computer Science and Engineering, Gothenburg University.

6. Dr. Ran Ji (defense December 2013), Department of Computer Science, Technische Universität Darmstadt.

7. Dr. Nathan Wasser (defense February 2016), Department of Computer Science, Technische Universität Darmstadt.

8. Dr. Martin Hentschel (defense March 2016 *summa cum laude*), Department of Computer Science, Technische Universität Darmstadt.

9. Dr. Quoc Huy Do (defense April 2017), Department of Computer Science, Technische Universität Darmstadt.

10. Dr. Antonio Flores Montoya (defense July 2017 *summa cum laude*), Department of Computer Science, Technische Universität Darmstadt.

11. Dr. Eduard Kamburjan (defense March 2020 *summa cum laude*), Department of Computer Science, Technische Universität Darmstadt. Now postdoctoral researcher at University of Oslo.

12. Dr. Dominic Steinhöfel (defense May 2020 *summa cum laude*), Department of Computer Science, Technische Universität Darmstadt. Now postdoctoral researcher at Helmholtz Centre CISPA in Saarbrücken.

13. Dr. Maya Retno Ayu Setyautami (defense July 2023), Faculty of Computer Science, University of Indonesia, Jakarta. Now lecturer at University of Indonesia.

I was main supervisor of the following students who obtained a "licenciate" (an intermediate degree between Masters and Ph.D. awarded in Sweden):

1. Angela Wallenburg, December 2004
2. Tobias Gedell, April 2006
3. Daniel Larsson, November 2006
4. Ran Ji, March 2012

— External Reviewer/Co-Reviewer/Co-Advisor —

- Dr. Felip Manyà, Autonomous University of Barcelona, November 1996
- Dr. Ramon Béjar, Autonomous University of Barcelona, December 2000
- Dr. Guido Fiorino, University of Milan, Spring 2001
- Dr. Teresa Alsinet, Polytechnical University of Catalonia, Barcelona, July 2001
- Dr. Martin Hiller, Chalmers University, October 2002
- Dr. Dan Lawesson, University of Linköping, November 2005
- Dr. Cees-Bart Breunesse, Radboud University of Nijmegen, April 2006
- Dr. Magnus Björk, Chalmers University, May 2006
- Dr. Achim Brucker, ETH Zurich, March 2007
- Dr. Roger Antonsen, University of Oslo, October 2008
- Dr. Adám Dárvas, ETH Zurich, September 2009
- Dr. Maik Merten, TU Dortmund, January 2013
- Dr. Pedro Osvaldo Rossel Cid, University of Chile, March 2013

- Dr. Ralf Mitschke, TU Darmstadt, June 2013
- Dr. Thomas Raths, University of Potsdam, July 2014
- Dr. Michiel Helvensteijn, University of Leiden, November 2014
- Dr. Thomas Thüm, University of Magdeburg, February 2015
- Dr.-Ing. Sebastian Schön, TU Darmstadt, June 2020
- Dr.-Ing. Mohammad Norouzi, TU Darmstadt, December 2021
- Dr.-Ing. Alexander Knüppel, TU Braunschweig, February 2022
- Dr. Jerome Dohrau, ETH Zürich, September 2022
- Dr.-Ing. Tobias Runge, TU Braunschweig, April 2023
- Dr. Sophie Latouwers, Twente University, October 2023
- Dr. Julius Alexander Bainczyk, TU Dortmund, January 2024
- Dr. Pamina Georgiou, TU Vienna, March 2024

— Supervision of Postdocs —

- Prof. Dr. Martin Giese, Chalmers University of Technology, 2003–04. Now Full Professor of Computer Science at University of Oslo.
- Dr. Vladimir Klebanov, Chalmers University of Technology, 2006–07
- Priv.-Doz. Dr. Richard Bubel, Chalmers University of Technology, 2007–09. Now staff researcher at Technische Universität Darmstadt.
- Prof. Dr. Ina Schaefer, Chalmers University of Technology, 2010. Now Full Professor of Computer Science at Karlsruhe Institute of Technology (KIT).
- Dr. Keiko Nakata, Technische Universität Darmstadt, Summer 2013
- Dr. Ran Ji, Technische Universität Darmstadt, 2014
- Prof. Dr. Crystal C. Din, Technische Universität Darmstadt, April 2014–Feb. 2016. Now Associate Professor of Computer Science at University of Bergen.
- Dr. Radu Muschevici, Technische Universität Darmstadt, Aug. 2014–March 2019. Now Assistant Professor at University of Nottingham, Malaysia Campus.
- Dr. Eduard Kamburjan, Technische Universität Darmstadt, April–Sep. 2020. Now postdoctoral researcher at University of Oslo.

- Dr. Dominic Steinhöfel, Technische Universität Darmstadt, May–Dec. 2020. Now postdoctoral researcher at Helmholtz Centre CISPA in Saarbrücken.
- Dr. Nathan Wasser, Technische Universität Darmstadt, Feb. 2018–Dec. 2021.
- Dr. Adele Veschetti, Technische Universität Darmstadt, July 2023–ongoing.

— Habilitation —

Priv.-Doz. Dr. Richard Bubel, obtained his Habilitation in the area *Software Engineering* from TU Darmstadt in November 2017.

Ph.D. Level Courses/Summer Schools

- Course *Tableaux Based Theorem Proving* at 10th European Summer School in Logic, Language and Information ESSLLI-98 in Saarbrücken
- Ph.D. level compact course, Division of Computing Science, Chalmers University of Technology: *Formal methods for object oriented programming*, September 2000
- Ph.D. level course, Division of Computing Science, Chalmers University of Technology: *Automated Theorem Proving*, Winter 2001/02
- Ph.D. level course, Division of Computing Science, Chalmers University of Technology: *Automated Theorem Proving*, Winter 2004/05
- Winter school for Ph.D. students, compact course "Verification of Object-Oriented Programs" Viinistu, Estonia, January 2009
- Ph.D. level and advanced Masters level course, Department of Computer Science and Engineering, Chalmers University of Technology: *Automated Theorem Proving*, Fall 2010
- Ph.D. level course "Abstract Behavioral Specification of Distributed Object-Oriented Systems", International School on Formal Models for Objects and Components, University Residential Center of Bertinoro, September 2012
- Ph.D. level course "Design and Analysis of Executable Software Models: An Introduction and Overview", 14th International School on Formal Methods for the Design of Computer, Communication and Software Systems: Executable Software Models, University Residential Center of Bertinoro, June 2014
- Lecture on "Abstract Behavioral System Modeling", CompuGene Winter School on Varieties of Modeling in Technoscience: The Case of Synthetic Biology, Darmstadt, March 2017
- Lecture on "Formal Verification and Specification in Java", Guest Lecture on Software Quality Assurance, University of Indonesia, Jakarta, December 2019
- Lecture on "Abstract Execution", Guest Lecture in Postgraduate Seminar, Laboratoire de l'Informatique du Parallélisme (LIP), CNRS, ENS Lyon, September 2021
- Lecture on "Styling Tips for Scientific Papers", Guest Lecture for Postgraduate and Ph.D. students at Department of Computer Science (FASILKOM), University of Indonesia, Jakarta, September 2022

Teaching Activities outside of the University

- Invited tutorial *Proof Confluent Tableau Proof Procedures*, with B. Beckert (University of Karlsruhe), at International Conference on Theorem Proving with Analytic Tableaux and Related Methods, Saratoga Springs, USA, June 1999
- Invited tutorial *Complexity of Many-Valued Logics*, at International Symposium on Multiple-Valued Logic (ISMVL), Warsaw, Polen, May 2001
- Course for industrial participants: *Automated Theorem Proving*, Safelogic AG, February–March 2002
- Tutorial *Integrating OO-Design and Deductive Verification of Software*, with B. Beckert, A. Roth und P. Schmitt, Formal Methods Europe Conference 2003, Pisa, Italy, September 2003
- Tutorial *Integrating Object-Oriented Design and Deductive Verification of Software*, with W. Ahrendt, V. Klebanov und Ph. Rümmer, CADE-20, Tallinn, Estonia, July 2005
- Tutorial *Integrating Object-Oriented Design and Deductive Verification of Software*, with B. Beckert and P. Schmitt, SEFM, Pune, India, September 2006
- Tutorial *Integrating Object-Oriented Design and Deductive Verification of Software*, with B. Beckert, V. Klebanov and P. Schmitt, Integrated Formal Methods Conference, Oxford, UK, July 2007
- Tutorial *HATS: Highly Adaptable and Trustworthy Software using Formal Models*, with M. Dam, R. Muschevici, I. Schaefer, J. Schäfer, Research Project Symposium at European Conference on Object-Oriented Programming, Lancaster, UK, July 2011
- Tutorial *Abstract Behavioral Modelling of Variant-Rich, Concurrent Software Systems*, with E. Albert, E. B. Johnsen, R. Muschevici at European Conference on Modelling Foundations and Applications, Montpellier, France, July 2013
- Tutorial *Abstract Behavioral Specifications*, with E. B. Johnsen at International Symposium on Formal Methods, Oslo, Norway, June 2015
- Tutorial *The Sequent Calculus of the KeY Tool*, with P. H. Schmitt at International Conference on Automated Deduction, Berlin, Germany, August 2015

5 Collaboration with Industry

- Safelogic AB (Senior consultant in the area of Automated Reasoning). Joint publication [137] Runtime: July 2001–December 2002.
- DB Systems GmbH (KeY-Project case study on formal specification and verification of electronic time tables for train drivers. Publications [129, 47]). Runtime: 2002–2003.
- Volvo Technology AB:
  - EAST-EEA Embedded Electronic Architecture, ITEA Project 00009: *Formal Language for Description of Design Requirmeents of Vehicle Components*. Runtime: April 2003–June 2004.
  - Project *Cost Efficient Dependable Electronic Systems (CEDES)*. Runtime 2004–2008.
- Volvo Cars AB: Project *Cost Efficient Dependable Electronic Systems (CEDES)*. Runtime 2004–2008.
- Autolivs AB. Project *Cost Efficient Dependable Electronic Systems (CEDES)*. Runtime 2004–2008.
- IBM Deutschland Research & Development GmbH, Böblingen: *Formal specification and automated test case generation of Java Card applets*. Runtime: 2005.
- aicas GmbH, Karlsruhe, Germany: ARTEMIS Embedded Computing Systems Initiative, Collaborative Project CHARTER (Critical & High Assurance Requirements Transformed through Engineering Rigour). Runtime April 2009–March 2012.
- Norsk Regnesentral, Oslo: EC FP7 Integrated Project HATS (Highly Adaptable & Trustworthy Software using Formal Methods). Runtime March 2009–February 2013.
- Fredhopper, Amsterdam: EC FP7 Integrated Project HATS (Highly Adaptable & Trustworthy Software using Formal Methods). Joint publications [138, 50, 147, 178]. Runtime March 2009–February 2013. EC FP7 STREP Envisage (Engineering Virtualized Services). Joint publication [36]. Runtime October 2013–September 2016.
- Engineering SpA, Rome, Italy: EC FP7 STREP Envisage (Engineering Virtualized Services). Runtime October 2013–September 2016.
- Atbrox, Trondheim, Norway: EC FP7 STREP Envisage (Engineering Virtualized Services). Runtime October 2013–September 2016.
- Innovation Alliance Deutsche Bahn—TU Darmstadt: member of scientific council of Working Group on Signaling, 2016–2020

6 Organisation and Administration

Organisation of Scientific Events

1. First *International Workshop on Theorem Proving with Analytic Tableaux and Related Methods* in Lautenbach near Karlsruhe (March 1992)
2. Second *International Workshop on Theorem Proving with Analytic Tableaux and Related Methods* in Marseille (April 1993)
3. Fourth *International Conference on Theorem Proving with Analytic Tableaux and Related Methods* in St. Goar near Koblenz (May 1995)
4. Workshop *Integration of Deduction Systems* at International Conference on Automated Deduction in Lindau (July 1998)
5. Workshop *Precise Modelling and Deduction for Object-oriented Software Development* at International Joint Conference on Automated Reasoning in Siena (June 2001)
6. 1. International KeY-Project Workshop, Gothenburg (June 2002)
7. Conference Chair of Conference on Automated Deduction (CADE-18) at Federated Logic Conferences (FLoC), Copenhagen (July 2002)
8. Workshop *OCL 2.0—Industry standard or scientific playground?* at UML 2003 in San Francisco/CA (October 2003)
9. 4. International KeY-Project Workshop, Lökeberg, Gothenburg (June 2005)
10. European Science Foundation Exploratory Workshop EW05-119 *Challenges in Java Program Verification*, Nijmegen (October 2006)
11. COST Action IC0701 *Formal Verification of Object-Oriented Software*: Management Committee and 1st Working Group Meeting, Gothenburg (2–4. June 2008)
12. 7. International KeY-Project Workshop, Gothenburg (4–6. June 2008)
13. 1st Annual HATS Project Meeting, Gothenburg (21–23. September 2009)
14. Dagstuhl Seminar 09411: Interaction versus Automation: The two Faces of Deduction (4–10. October 2009)
15. Seminar of the Max-Planck-Society on Schloss Ringberg: Deduction at Scale (7.-11. March 2011)
16. 10. International KeY-Project Workshop, Nijmegen (26–27. August 2011), part of *Interactive Theorem Proving* ITP 2011

17. COST Action IC0701 *Formal Verification of Object-Oriented Software*: 9th Management Committee and Working Group Meeting, Darmstadt (29. Feb.–2. March 2012)

18. 11. International KeY-Project Workshop, Manigod (22.–25. July 2012)

19. Conference Track on *Adaptable and Evolving Software for Eternal Systems* at 5th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation, Heraclion, Crete, Greece (13.–20. October 2012)

20. Dagstuhl Seminar 13411: Deduction and Arithmetic (6.–11. October 2013)

21. EC FP7 STREP Envisage Project Kick-Off Meeting, Darmstadt (14–15. October 2013)

22. 14th International School on Formal Methods for the Design of Computer, Communication and Software Systems: Executable Software Models, University Residential Center of Bertinoro (16.–20. June 2014)

23. 5th International Workshop on Invariant Generation (WING), held as part of Federated Logic Conferences (FLoC), Vienna, Austria (23. July 2014)

24. Wine Chair of 28th European Conference on Object-Oriented Programming (ECOOP), Uppsala (28. July–1. August 2014)

25. European Science Exploratory Workshop EW13-064 *Combining Learning And Symbolic Analysis For Software Documentation And Mastering Change*, Darmstadt (10.–11. September 2014)

26. Conference Track on *Engineering Virtualized Services* at 6th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation, Corfu, Greece (8.–11. October 2014)

27. Dagstuhl Seminar 16172: Machine Learning for Dynamic Software Analysis: Potentials and Limits (25.–27. April 2016)

28. 15. International KeY-Project Workshop, Manigod (25.–28. July 2016)

29. Track on *Correctness-by-Construction and Post-hoc Verification: friends or foes?* at 7th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation, Corfu, Crete, Greece (10.–14. October 2016)

30. Wine Chair of 13th International Conference on Integrated Formal Methods (iFM), Torino, Italy, September 2017

31. 18. International KeY-Project Workshop, Manigod (12.–15. August 2019)

32. Track on *Automating Software Re-Engineering* at 9th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation, Rhodes, Greece (26.–30. October 2020), *postponed to October 2021 due to Covid-19 pandemic*

33. Track on *Modularity and (De-)composition in Verification* at 9th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation, Rhodes, Greece (26.–30. October 2020), *postponed to October 2021 due to Covid-19 pandemic*

34. Dagstuhl Seminar 20481: Principles of Contract Languages, (22.–27. November 2020), *postponed to November 2022 as Seminar 22451 due to Covid-19 pandemic*

35. Track on *Automating Software Re-Engineering* at 10th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation, Rhodes, Greece (24.–28. October 2022)

36. 19th International KeY-Project Workshop, Bergen, Norway (6.–8. August 2023)

37. Lorentz Center Workshop on *Contract Languages*, Leiden, Netherlands (4.–8. March 2024)

Academic Administration

- *Director of Graduate Studies*, Division of Computing Science, Chalmers University and chair of Committee for Ph.D. education, January 2001–October 2004
- Member of Committee for Ph.D. education of Faculty of Natural Sciences, University of Gothenburg, 2001–2002
- Member of Committee for Ph.D. education, Department of Computer Science and Engineering, Chalmers University of Technology and University of Gothenburg 2002–2009, Chair November 2003–Dezember 2009
- Chair of *Institutionskollegiet* (representation of academic teachers), Department of Computer Science and Engineering, Chalmers University, October 2003–November 2007
- *Vice-Prefect for Postgraduate Studies*, Department of Computer Science and Engineering, Chalmers University November 2003–December 2007
- Member of *Steering Group*, Department of Computer Science and Engineering, Chalmers University November 2003–Dezember 2009
- *Pro-Prefect for Postgraduate Studies & Deputy Head of Department*, Department of Computer Science and Engineering, Chalmers University, January 2008–December 2009
- Member of *IT Council*, Chalmers University, January 2010–March 2011
- Senatsbeauftragter für Berufungsverfahren (representative of the University Senate in recruitment committees), 2014–2015
- Dean of the Computer Science Department of Technische Universität Darmstadt, January 2014–March 2016
- Member of joint comission (Computer Science/Electrical Engineering and Information Technology) of Masters programme "Informationssystemtechnik", December 2011–September 2019
- Member of Departmental Council (Fachbereichsrat) of Computer Science Department, Technische Universität Darmstadt, January 2014–September 2019

Active:

- Member of Advisory Board (Vorstandsrat), Vereinigung von Freunden der Technischen Universität zu Darmstadt e.V., since April 2012

- Member of University Assembly (Universitätsversammlung) of Technische Universität Darmstadt, since April 2018; member and speaker of its Steering Committee, since October 2019
- Member of the Research Council of the Rhein-Main Universities (TU Darmstadt, University Frankfurt, University Mainz), since August 2019
- PI in Research Profile Topic *Cybersecurity & Privacy* of TU Darmstadt, since May 2023

Steering Committees of International Research Organisations

- Member of Symposium Subcommittee of the Technical Committee on Multiple-Valued Logic, IEEE Computer Society 1997–1999
- Chair of Technical Committee on Multiple-Valued Logic, IEEE Computer Society 2000–2001
- Member of Executive Committee of the Technical Committee on Multiple-Valued Logic, IEEE Computer Society 2000–2004
- Founding member of the Steering Committee of the *International Conference on Theorem Proving with Analytic Tableaux and Related Methods* 2000–2008, president 2000–2003, member 2010–2011
- Member of Steering Committee of the *International Workshops on First-Order Theorem Proving* October 2000–November 2005
- Member of Steering Committee of the *Federated Logic Conferences (FLoC)* 2001–2006, founding member of the *Board of Directors*, FLoC Inc., August 2004
- Founding member of Steering Committee of the *International Joint Conference on Automated Reasoning, IJCAR* 2002–2006, member 2009–2011
- Trustee and vice president of the *Conference on Automated Deduction (CADE Inc.)* 2005–2011
- Vice chair of EC ESF COST Action IC0701 *Formal Verification of Object-Oriented Software* 2008–2012
- Member of the Board of Trustees of the *Association for Automated Reasoning Inc.* in 2011

Active:

- Member of the Scientific Directorate of Schloss Dagstuhl—Leibniz Center for Informatics since November 2016
- Chair (since 2023), Vice-Chair (2021–2023) and Member (since 2018) of the Steering Committee of the International Conference on Fundamental Approaches to Software Engineering (FASE)
- Member (2018–2019 and since 2023) of the Steering Committee of the European Joint Conferences on Theory and Practice of Software (ETAPS)