

Curriculum Vitae

Thomas A. Henzinger

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Address

ISTA (Institute of Science and Technology Austria)	Phone: +43 2243 9000 3510
Am Campus 1, 3400 Klosterneuburg	Email: tah@ista.ac.at
Austria	Web: pub.ista.ac.at/~tah

Research

Mathematical logic, automata and game theory, models of computation.
Modeling, analysis, and synthesis of reactive, stochastic, real-time, hybrid, and neural systems.
Formal specification and verification, especially model checking and runtime monitoring.
Design and implementation of concurrent, embedded, and cyber-physical software.
Executable modeling of biological systems.

Education

09/1991	Ph.D., Computer Science	Stanford University
07/1987	Dipl.-Ing., Informatik (Computer Science)	Johannes Kepler University Linz
08/1986	M.S., Computer and Information Sciences	University of Delaware

Employment

09/2009	Professor	ISTA
09/2009–12/2022	President	ISTA
04/2004–08/2009	Professor, Computer and Communication Sciences	EPFL
01/1999–03/2000	Director, Max Planck Inst. for Computer Science	MPII Saarbrücken
07/1998–03/2004	Professor, Electrical Eng. and Computer Sciences	University of California, Berkeley
07/1997–06/1998	Associate Professor, Electrical Eng. and Computer Sciences	University of California, Berkeley
01/1996–06/1997	Assistant Professor, Electrical Eng. and Computer Sciences	University of California, Berkeley
01/1992–12/1996	Assistant Professor, Computer Science	Cornell University
10/1991–12/1991	Postdoc, IMAG Laboratory	Université Joseph Fourier Grenoble

Honors

- 2024 Foreign member, Royal Society
- 2020 National Academy of Sciences (USA)
- 2020 American Academy of Arts and Sciences
- 2011 Austrian Academy of Sciences
- 2009 Corresponding member, Austrian Academy of Sciences
- 2006 Academia Europaea
- 2005 German Academy of Sciences (Leopoldina)

- 2015 Fellow, European Association for Theoretical Computer Science (EATCS)
- 2013 Fellow, American Association for the Advancement of Science (AAAS)
- 2006 Fellow, Association for Computing Machinery (ACM)
- 2006 Fellow, Institute of Electrical and Electronics Engineers (IEEE)
- 2006 Highly cited researcher, Institute for Scientific Information (ISI)
- 2004 Senior member, Institute of Electrical and Electronics Engineers
- 1990 Sigma Xi

- 2022 Ehrenkreuz für Wissenschaft und Kunst 1. Klasse, Federal Republic of Austria
- 2019 EATCS Award, European Association for Theoretical Computer Science
- 2015 Robin Milner Award, Royal Society
- 2012 Wittgenstein Award, Austrian Science Fund (FWF)

- 2015 Doctor honoris causa, Masaryk University Brno
- 2012 Doctor honoris causa, Université Joseph Fourier Grenoble

- 2017 Michael Rabin Lecture, Hebrew University
- 2017 Carl Adam Petri Lecture, Conference on Petri Nets
- 2014 Amir Pnueli Memorial Lecture, Weizmann Institute of Science

- 2022 Test-of-time award, Conference on Concurrency Theory (CONCUR)
- 2022 Best-paper award, European Association for Software Science and Technology (EASST)
- 2021 Test-of-time award, Conference on Concurrency Theory
- 2021 Influential-paper award, Conf. on Autonomous Agents and Multi-Agent Systems (AAMAS)
- 2020 Test-of-time award, Embedded Systems Week (ESWEEK)
- 2020 Test-of-time award, Symposium on Logic in Computer Science (LICS)
- 2015 Best-paper award, European Association for Software Science and Technology
- 2014 Most-influential paper award, Symp. on Principles of Programming Languages (POPL)
- 2012 Test-of-time award, Symposium on Logic in Computer Science
- 2011 Impact-paper award, ACM Special Interest Group on Software Engineering (SIGSOFT)
- 2006 Best paper award, Symposium on Foundations of Software Engineering (FSE)
- 2001 Best-paper award, Conference on Concurrency Theory

- 2020 Advanced investigator grant, European Research Council (ERC)
- 2010 Advanced investigator grant, European Research Council
- 1995 Young investigator award, Office of Naval Research (ONR)
- 1995 Faculty early career development award, National Science Foundation (NSF)

- 2023 Visiting Professor of Computer Science, Stanford University
- 2004–2011 Adjunct Professor of Electrical Eng. and Computer Sciences, UC Berkeley
- 1999 Honorary Professor of Computer Science, University of the Saarland

- 1992 Nominee for ACM Best Dissertation Award, Stanford University
- 1991 Ph.D. *with Distinction in Teaching*, Stanford University
- 1989 George E. Forsythe Memorial Award for Excellence in Student Teaching, Stanford
- 1988–1991 IBM Graduate Fellow, Stanford University
- 1987 Dipl.-Ing. *with Distinction*, Johannes Kepler University Linz
- 1985–1986 Fulbright Fellow, University of Delaware

Sabbatical Visits

- Department of Computer Science, Stanford University, California, April to June 2023.
- School of Computer Science, The University of Sydney, Australia, March 2023.
- School of Computer and Communication Sciences, EPFL, Switzerland, January to February 2023.
- Microsoft Research, Redmond, Washington, August 2005; August 2006.
- Department of Information Technology and Electrical Eng., ETH Zurich, Switzerland, June 2002.
- Department of Computer Science, Technical University Munich, Germany, May 2002.
- Department of Computer Science, Stanford University, California, July 2001 to April 2002.
- AT&T Bell Laboratories, Murray Hill, New Jersey, summers 1991–1995.
- Department of Applied Mathematics, Weizmann Institute of Science, Israel, March to June 1989; July 1990.

Doctoral Students

- 25. Mathias Lechner (Ph.D., ISTA 2022):
Learning Verifiable Representations
- 24. Bernhard Kragl (Ph.D., ISTA 2020):
Verifying Concurrent Programs: Refinement, Synchronization, Sequentialization
- 23. Mirco Giacobbe (Ph.D., ISTA 2019):
Automatic Time-Unbounded Reachability Analysis of Hybrid Systems
- 22. Przemek Daca (Ph.D., ISTA 2017):
Statistical and Logical Methods for Property Checking
- 21. Thorsten Tarrach (Ph.D., ISTA 2016):
Automatic Synthesis of Synchronization Primitives for Concurrent Programs
- 20. Arjun Radhakrishna (Ph.D., ISTA 2014):
Quantitative Specifications for Verification and Synthesis
Won the ACM SIGBED Paul Caspi Dissertation Award 2015.

19. Damien Zufferey (Ph.D., ISTA 2013):
Analysis of Dynamic Message-Passing Programs
18. Maria Mateescu (Ph.D., EPFL 2011):
Propagation Models for Biochemical Reaction Networks
17. Grégory Théoduloz (Ph.D., EPFL 2010):
Software Verification by Combining Program Analyses of Adjustable Precision
Won a Microsoft Postgraduate Research Studentship.
16. Vasu Singh (Ph.D., EPFL 2009):
Formalizing and Verifying Transactional Memories
15. Vinayak S. Prabhu (Ph.D., University of California, Berkeley, 2008):
Games for the Verification of Timed Systems
14. Slobodan Matic (Ph.D., University of California, Berkeley, 2008):
Compositionality in Deterministic Real-Time Embedded Systems
13. Johannes Borgström (Ph.D., EPFL 2008):
Equivalences and Calculi for the Formal Verification of Cryptographic Protocols
Jointly supervised with Uwe Nestmann.
12. Arkadeb Ghosal (Ph.D., University of California, Berkeley, 2008):
A Hierarchical Coordination Language for Reliable Real-Time Tasks
Jointly supervised with Alberto L. Sangiovanni-Vincentelli.
11. Arindam Chakrabarti (Ph.D., University of California, Berkeley, 2007):
A Framework for the Compositional Design and Analysis of Systems
10. Krishnendu Chatterjee (Ph.D., University of California, Berkeley, 2007):
Stochastic Omega-Regular Games
Won the David J. Sakrison Memorial Prize of the EECS Dept., University of California, Berkeley, 2008.
Won the Ackermann Award of the European Association for Computer Science Logic, 2008.
9. Simon Kramer (Ph.D., EPFL 2007):
Logical Concepts in Cryptography
Jointly supervised with Uwe Nestmann.
8. Ranjit Jhala (Ph.D., University of California, Berkeley, 2004):
Program Verification by Lazy Abstraction
Won the David J. Sakrison Memorial Prize of the EECS Dept., University of California, Berkeley, 2005.
7. Rupak Majumdar (Ph.D., University of California, Berkeley, 2003):
Symbolic Algorithms for Verification and Control
Won the Leon O. Chua Award of the EECS Dept., University of California, Berkeley, 2002.
6. Benjamin Horowitz (Ph.D., University of California, Berkeley, 2003):
GIOTTO: A Time-Triggered Language for Embedded Programming
5. Freddy Y.C. Mang (Ph.D., University of California, Berkeley, 2002):
Games in Open Systems Verification and Synthesis
4. Shaz Qadeer (Ph.D., University of California, Berkeley, 1999):
Algorithms and Methodology for Scalable Model Checking
3. Sriram K. Rajamani (Ph.D., University of California, Berkeley, 1999):
New Directions in Refinement Checking

2. Peter W. Kopke (Ph.D., Cornell University 1996):
The Theory of Rectangular Hybrid Automata
1. Pei-Hsin Ho (Ph.D., Cornell University 1995):
Automatic Analysis of Hybrid Systems

Current doctoral students at ISTA: N. Ege Saraç, Konstantin Kueffner, Stefanie Muroya Lei, Mahyar Karimi

Software Development

1. GIST, a solver for stochastic graph games (2009–2011).
2. FLEXPRICE, a system for the provisioning of resources in a cloud environment (2009–2011).
3. SABRE, a state explorer for continuous-time Markov chains (2008–2011).
4. FOIL, a model checker for transactional-memory implementations (2008–2011).
5. BLAST, a model checker for C programs (2001–2008).
6. CHIC, a JBuilder plug-in for interface automata (2001–2004).
7. GIOTTO, a coordination language for distributed real-time tasks (2001–2004).
8. MOCHA, a verification tool suite for reactive modules (1997–2000).
9. HYTECH, a symbolic model checker for hybrid systems (1993–1996).
10. PROOFPAD, an interactive proof editor (1984–1985).

Publications

Refereed Conference Papers

1. Đorđe Žikelić, Mathias Lechner, Abhinav Verma, Krishnendu Chatterjee, Thomas A. Henzinger, “Compositional policy learning in stochastic control systems with formal guarantees,” *Proc. Conf. Neural Information Processing Systems (NeurIPS)*, 2023.
2. Matin Ansaripour, Krishnendu Chatterjee, Thomas A. Henzinger, Mathias Lechner, Đorđe Žikelić, “Learning provably stabilizing neural controllers for discrete-time stochastic systems,” *Proc. Symp. Automated Verification and Analysis (ATVA)*, Lecture Notes in Computer Science 14215, Springer, 2023, pp. 357–379.
3. Samuel Pastva, Thomas A. Henzinger, “Binary decision diagrams on modern hardware,” *Proc. Conf. Formal Methods in Computer-Aided Design (FMCAD)*, IEEE Computer Society Press, 2023.
4. Thomas A. Henzinger, Konstantin Kueffner, Kaushik Mallik, “Monitoring algorithmic fairness under partial observations,” *Proc. Conf. Runtime Verification (RV)*, Lecture Notes in Computer Science 14245, Springer, 2023, pp. 291–311.
5. Marek Chalupa, Thomas A. Henzinger, “Monitoring hyperproperties with prefix transducers,” *Proc. Conf. Runtime Verification (RV)*, Lecture Notes in Computer Science 14245, Springer, 2023, pp. 168–190.
6. Udi Boker, Thomas A. Henzinger, Nicolas Mazzocchi, N. Ege Saraç, “Safety and liveness of quantitative automata,” *Proc. Conf. Concurrency Theory (CONCUR)*, Leibniz International Proceedings in Informatics 279, 2023, pp. 17:1–18. Invited to a special issue for selected papers of CONCUR 2023.

7. Ezio Bartocci, Thomas A. Henzinger, Dejan Ničković, Ana Oliveira da Costa, “Hypernode automata,” *Proc. Conf. Concurrency Theory (CONCUR)*, Leibniz International Proceedings in Informatics 279, 2023, pp. 21:1–16.
8. Thomas A. Henzinger, Mahyar Karimi, Konstantin Kueffner, Kaushik Mallik, “Monitoring algorithmic fairness,” *Proc. Conf. Computer-Aided Verification (CAV)*, Part II, Lecture Notes in Computer Science 13965, Springer, 2023, pp. 358–382.
9. Thomas A. Henzinger, Pavol Kebis, Nicolas Mazzocchi, N. Ege Saraç, “Regular methods for operator-precedence languages,” *Proc. Int. Colloq. Automata, Languages, and Programming (ICALP)*, Leibniz International Proceedings in Informatics 261, 2023, pp. 129:1–20.
10. Thomas A. Henzinger, Mahyar Karimi, Konstantin Kueffner, Kaushik Mallik, “Runtime monitoring of dynamic fairness properties,” *Proc. Conf. Fairness, Accountability, and Transparency (FAccT)*, ACM Press, 2023, pp. 604–614.
11. Marek Chalupa, Fabian Mühlböck, Stefanie Muroya Lei, Thomas A. Henzinger, “VAMOS: Middleware for best-effort third-party monitoring,” *Proc. Conf. Fundamental Approaches to Software Engineering (FASE)*, Lecture Notes in Computer Science 13991, Springer, 2023, pp. 260–281. Invited to a special issue for selected papers of FASE 2023.
12. Thomas A. Henzinger, Nicolas Mazzocchi, N. Ege Saraç: “Quantitative safety and liveness,” *Proc. Conf. Foundations of Software Science and Computational Structures (FOSSACS)*, Lecture Notes in Computer Science 13992, Springer, 2023, pp. 349–370.
13. Marek Chalupa, Thomas A. Henzinger, “BUBAAK: Runtime monitoring of program verifiers,” *Proc. Conf. Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, Part II, Lecture Notes in Computer Science 13994, Springer, 2023, pp. 535–540.
14. Mathias Lechner, Đorđe Žikelić, Krishnendu Chatterjee, Thomas A. Henzinger, Daniela Rus, “Quantization-aware interval-bound propagation for training certifiably robust quantized neural networks,” *Proc. AAAI Conf. Artificial Intelligence (AAAI)*, 2023, pp. 14964–14973.
15. Đorđe Žikelić, Mathias Lechner, Thomas A. Henzinger, Krishnendu Chatterjee, “Learning control policies for stochastic systems with reach-avoid guarantees,” *Proc. AAAI Conf. Artificial Intelligence (AAAI)*, 2023, pp. 11926–11935.
16. Sougata Bose, Thomas A. Henzinger, Karoliina Lehtinen, Sven Schewe, Patrick Totzke, “History-deterministic timed automata are not determinizable,” *Proc. Conf. Reachability Problems (RP)*, Lecture Notes in Computer Science 13608, Springer, 2022, pp. 67–76.
17. Thomas A. Henzinger, Nicolas Mazzocchi, N. Ege Saraç, “Abstract monitors for quantitative specifications,” *Proc. Conf. Runtime Verification (RV)*, Lecture Notes in Computer Science 13498, Springer, 2022, pp. 200–220.
18. Miriam García Soto, Thomas A. Henzinger, Christian Schilling, “Synthesis of parametric hybrid automata from time series,” *Proc. Symp. Automated Verification and Analysis (ATVA)*, Lecture Notes in Computer Science 13505, Springer, 2022, pp. 337–353.
19. Thomas A. Henzinger, Karoliina Lehtinen, Patrick Totzke, “History-deterministic timed automata,” *Proc. Conf. Concurrency Theory (CONCUR)*, Leibniz International Proceedings in Informatics 243, 2022, pp. 14:1–21. Invited to a special issue of *Logical Methods in Computer Science* for selected papers of CONCUR 2022.

20. Ezio Bartocci, Thomas Ferrère, Thomas A. Henzinger, Dejan Ničković, Ana Oliveira da Costa, “Information-flow interfaces,” *Proc. Conf. Fundamental Approaches to Software Engineering (FASE)*, Lecture Notes in Computer Science 13241, Springer, 2022, pp. 3–22. ETAPS EASST Best Paper Award 2022. Invited to a special issue of *Formal Methods in System Design* for selected papers of FASE 2022.
21. Đorđe Žikelić, Mathias Lechner, Krishnendu Chatterjee, Thomas A. Henzinger, “Stability verification in stochastic control systems via neural-network supermartingales,” *Proc. AAAI Conf. Artificial Intelligence (AAAI)*, 2022, pp. 7326–7336.
22. Sophie A. Gruenbacher, Mathias Lechner, Ramin M. Hasani, Daniela Rus, Thomas A. Henzinger, Scott A. Smolka, Radu Grosu, “GoTUBE: Scalable statistical verification of continuous-depth models,” *Proc. AAAI Conf. Artificial Intelligence (AAAI)*, 2022, pp. 6755–6764.
23. Mathias Lechner, Đorđe Žikelić, Krishnendu Chatterjee, Thomas A. Henzinger, “Infinite time-horizon safety of neural networks,” *Proc. Conf. Neural Information Processing Systems (NeurIPS)*, 2021, pp. 10171–10185.
24. Anna Lukina, Christian Schilling, Thomas A. Henzinger: “Into the unknown: Active monitoring of neural networks,” *Proc. Conf. Runtime Verification (RV)*, Lecture Notes in Computer Science 12974, Springer, 2021, pp. 42–61. Invited to a special issue of *Software Tools for Technology Transfer* for selected papers of RV 2021.
25. Fabian Mühlböck, Thomas A. Henzinger, “Differential monitoring,” *Proc. Conf. Runtime Verification (RV)*, Lecture Notes in Computer Science 12974, Springer, 2021, pp. 231–243.
26. Thomas A. Henzinger, N. Ege Saraç, “Quantitative and approximate monitoring,” *Proc. Symp. Logic in Computer Science (LICS)*, ACM Press, 2021, pp. 1–14.
27. Miriam García Soto, Thomas A. Henzinger, Christian Schilling, “Synthesis of hybrid automata with affine dynamics from time-series data,” *Proc. Conf. Hybrid Systems: Computation and Control (HSCC)*, ACM Press, 2021, pp. 2:1–2:11.
28. Mathias Lechner, Ramin M. Hasani, Radu Grosu, Daniela Rus, Thomas A. Henzinger, “Adversarial training is not ready for robot learning,” *Proc. Int. Conf. Robotics and Automation (ICRA)*, IEEE Press, 2021, pp. 4140–4147.
29. Thomas A. Henzinger, Mathias Lechner, Đorđe Žikelić, “Scalable verification of quantized neural networks,” *Proc. AAAI Conf. Artificial Intelligence (AAAI)*, 2021, pp. 3787–3795.
30. Thomas A. Henzinger, Anna Lukina, Christian Schilling, “Outside the box: Abstraction-based monitoring of neural networks,” *Proc. European Conf. Artificial Intelligence (ECAI)*, 2020, pp. 2433–2440.
31. Parand Alizadeh Alamdari, Guy Avni, Thomas A. Henzinger, Anna Lukina: “Formal methods with a touch of magic,” *Proc. Conf. Formal Methods in Computer-Aided Design (FMCAD)*, IEEE Computer Society Press, 2020, pp. 138–147.
32. Krishnendu Chatterjee, Thomas A. Henzinger, Jan Otop, “Multi-dimensional long-run average problems for vector addition systems with states,” *Proc. Conf. Concurrency Theory (CONCUR)*, Leibniz International Proceedings in Informatics 171, 2020, pp. 23:1–22.
33. Bernhard Kragl, Shaz Qadeer, Thomas A. Henzinger, “Refinement for structured concurrent programs,” *Proc. Conf. Computer-Aided Verification (CAV)*, Lecture Notes in Computer Science 12224, Springer, 2020, pp. 275–298.
34. Bernhard Kragl, Constantin Enea, Thomas A. Henzinger, Suha Orhun Mutluergil, Shaz Qadeer, “Inductive sequentialization of asynchronous programs,” *Proc. Conf. Programming Language Design and Implementation (PLDI)*, ACM Press, 2020, pp. 227–242.

35. Mirco Giacobbe, Thomas A. Henzinger, Mathias Lechner, “How many bits does it take to quantize your neural network?,” *Proc. Conf. Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, Lecture Notes in Computer Science 12079, Springer, 2020, pp. 79–97.
36. Thomas Ferrère, Thomas A. Henzinger, Bernhard Kragl, “Monitoring event frequencies,” *Proc. Conf. Computer Science Logic (CSL)*, Leibniz International Proceedings in Informatics 152, 2020, pp. 20:1–16.
37. Calin C. Guet, Thomas A. Henzinger, Claudia Iglér, Tatjana Petrov, Ali Sezgin, “Transient memory in gene regulation,” *Proc. Conf. Computational Methods in Systems Biology (CMSB)*, Lecture Notes in Computer Science 11773, Springer, 2019, pp. 155–187. Invited to a special issue of *Theoretical Computer Science* for selected papers of CMSB 2019.
38. Hui Kong, Ezio Bartocci, Yu Jiang, Thomas A. Henzinger, “Piecewise robust barrier tubes for non-linear hybrid systems with uncertainty,” *Proc. Conf. Formal Modeling and Analysis of Timed Systems (FORMATS)*, Lecture Notes in Computer Science 11750, Springer, 2019, pp. 123–141.
39. Miriam García Soto, Thomas A. Henzinger, Christian Schilling, Luka Zeleznik, “Membership-based synthesis of linear hybrid automata,” *Proc. Conf. Computer-Aided Verification (CAV)*, Lecture Notes in Computer Science 11561, Springer, 2019, pp. 297–314.
40. Guy Avni, Roderick Bloem, Krishnendu Chatterjee, Thomas A. Henzinger, Bettina Könighofer, Stefan Pranger, “Runtime optimization for learned controllers through quantitative games,” *Proc. Conf. Computer-Aided Verification (CAV)*, Lecture Notes in Computer Science 11561, Springer, 2019, pp. 630–649.
41. Krishnendu Chatterjee, Thomas A. Henzinger, Jan Otop, “Long-run average behavior of vector addition systems with states,” *Proc. Conf. Concurrency Theory (CONCUR)*, Leibniz International Proceedings in Informatics 140, 2019, pp. 27:1–16.
42. Milad Aghajohari, Guy Avni, Thomas A. Henzinger, “Determinacy in discrete-bidding infinite-duration games,” *Proc. Conf. Concurrency Theory (CONCUR)*, Leibniz International Proceedings in Informatics 140, 2019, pp. 20:1–17. Invited to a special issue of *Logical Methods in Computer Science* for selected papers of CONCUR 2019.
43. Guy Avni, Thomas A. Henzinger, Đorđe Žikelić, “Bidding mechanisms in graph games,” *Proc. Symp. Mathematical Foundations of Computer Science (MFCS)*, Leibniz International Proceedings in Informatics 138, 2019, pp. 11:1–13.
44. Mathias Lechner, Ramin M. Hasani, Manuel Zimmer, Thomas A. Henzinger, Radu Grosu, “Designing worm-inspired neural networks for interpretable robotic control,” *Proc. Int. Conf. Robotics and Automation (ICRA)*, IEEE Press, 2019, pp. 87–94.
45. Guy Avni, Thomas A. Henzinger, Rasmus Ibsen-Jensen, “Infinite-duration poorman-bidding games,” *Proc. Conf. Web and Internet Economics (WINE)*, Lecture Notes in Computer Science 11316, 2018, pp. 21–36.
46. Bernhard Kragl, Shaz Qadeer, Thomas A. Henzinger, “Synchronizing the asynchronous,” *Proc. Conf. Concurrency Theory (CONCUR)*, Leibniz International Proceedings in Informatics 118, 2018, pp. 21:1–17.
47. Adrián Elgyütt, Thomas Ferrère, Thomas A. Henzinger, “Monitoring temporal logic with clock variables,” *Proc. Conf. Formal Modeling and Analysis of Timed Systems (FORMATS)*, Lecture Notes in Computer Science 11022, Springer, 2018, pp. 53–70.
48. Goran Frehse, Mirco Giacobbe, Thomas A. Henzinger, “Space-time interpolants,” *Proc. Conf. Computer-Aided Verification (CAV)*, Lecture Notes in Computer Science 10981, Springer, 2018, pp. 468–486.

49. Hui Kong, Ezio Bartocci, Thomas A. Henzinger, “Reachable-set overapproximation for nonlinear systems using piecewise barrier tubes,” *Proc. Conf. Computer-Aided Verification (CAV)*, Lecture Notes in Computer Science 10981, Springer, 2018, pp. 449–467.
50. Thomas Ferrère, Thomas A. Henzinger, N. Ege Saraç, “A theory of register monitors,” *Proc. Symp. Logic in Computer Science (LICS)*, ACM Press, 2018, pp. 394–403.
51. Krishnendu Chatterjee, Thomas A. Henzinger, Jan Otop, “Bidirectional nested weighted automata,” *Proc. Conf. Concurrency Theory (CONCUR)*, Leibniz International Proceedings in Informatics 85, 2017, pp. 5:1–16.
52. Guy Avni, Thomas A. Henzinger, Ventsislav Chonev, “Infinite-duration bidding games,” *Proc. Conf. Concurrency Theory (CONCUR)*, Leibniz International Proceedings in Informatics 85, 2017, pp. 21:1–18.
53. Sergiy Bogomolov, Mirco Giacobbe, Thomas A. Henzinger, Hui Kong, “Conic abstractions for hybrid systems,” *Proc. Conf. Formal Modeling and Analysis of Timed Systems (FORMATS)*, Lecture Notes in Computer Science 10419, Springer, 2017, pp. 116–132.
54. Stanley Bak, Sergiy Bogomolov, Thomas A. Henzinger, Aviral Kumar, “Challenges and tool implementation of hybrid rapidly-exploring random trees,” *Proc. Workshop on Numerical Software Verification (NSV)*, Lecture Notes in Computer Science 10381, Springer, 2017, pp. 83–89.
55. Sergiy Bogomolov, Goran Frehse, Mirco Giacobbe, Thomas A. Henzinger, “Counterexample-guided refinement of template polyhedra,” *Proc. Conf. Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, Lecture Notes in Computer Science 10205, Springer, 2017, pp. 589–606.
56. Guy Avni, Shubham Goel, Thomas A. Henzinger, Guillermo Rodríguez-Navas, “Computing scores of forwarding schemes in switched networks with probabilistic faults,” *Proc. Conf. Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, Lecture Notes in Computer Science 10205, Springer, 2017, pp. 169–187.
57. Hui Kong, Sergiy Bogomolov, Christian Schilling, Yu Jiang, Thomas A. Henzinger, “Safety verification of nonlinear hybrid systems based on invariant clusters,” *Proc. Conf. Hybrid Systems: Computation and Control (HSCC)*, ACM Press, 2017, pp. 163–172.
58. Guy Avni, Thomas A. Henzinger, Orna Kupferman, “Dynamic resource allocation games,” *Proc. Symp. Algorithmic Game Theory (SAGT)*, Lecture Notes in Computer Science 9928, Springer, 2016, pp. 153–166.
59. Hui Kong, Ezio Bartocci, Sergiy Bogomolov, Radu Grosu, Thomas A. Henzinger, Yu Jiang, Christian Schilling, “Discrete abstraction of multiaffine systems,” *Proc. Workshop on Hybrid Systems Biology (HSB)*, Lecture Notes in Computer Science 9957, Springer, 2016, pp. 128–144.
60. Andreas Haas, Thomas A. Henzinger, Andreas Holzer, Christoph M. Kirsch, Michael Lippautz, Hannes Payer, Ali Sezgin, Ana Sokolova, Helmut Veith, “Local linearizability,” *Proc. Conf. Concurrency Theory (CONCUR)*, Leibniz International Proceedings in Informatics 59, 2016, pp. 6:1–15.
61. Przemyslaw Daca, Thomas A. Henzinger, Jan Křetínský, Tatjana Petrov, “Linear distances between Markov chains,” *Proc. Conf. Concurrency Theory (CONCUR)*, Leibniz International Proceedings in Informatics 59, 2016, pp. 20:1–15.
62. Krishnendu Chatterjee, Thomas A. Henzinger, Jan Otop, “Nested weighted limit-average automata of bounded width,” *Proc. Symp. Mathematical Foundations of Computer Science (MFCS)*, Leibniz International Proceedings in Informatics 58, 2016, pp. 24:1–14.

63. Krishnendu Chatterjee, Thomas A. Henzinger, Jan Otop, “Quantitative automata under probabilistic semantics,” *Proc. Symp. Logic in Computer Science (LICS)*, ACM Press, 2016, pp. 76–85.
64. Przemyslaw Daca, Thomas A. Henzinger, Andrey Kupriyanov, “Array-folds logic,” *Proc. Conf. Computer-Aided Verification (CAV)*, Lecture Notes in Computer Science 9780, Springer, 2016, pp. 230–248.
65. Przemyslaw Daca, Thomas A. Henzinger, Jan Křetínský, Tatjana Petrov, “Faster statistical model checking for unbounded temporal properties,” *Proc. Conf. Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, Lecture Notes in Computer Science 9636, Springer, 2016, pp. 112–129.
66. Stanley Bak, Sergiy Bogomolov, Thomas A. Henzinger, Taylor T. Johnson, Pradyot Prakash, “Scalable static hybridization methods for the analysis of nonlinear systems,” *Proc. Conf. Hybrid Systems: Computation and Control (HSCC)*, ACM Press, 2016, pp. 155–164.
67. Cezara Dragoi, Thomas A. Henzinger, Damien Zufferey, “PSYNC: A partially synchronous language for fault-tolerant distributed algorithms,” *Proc. Symp. Principles of Programming Languages (POPL)*, ACM Press, 2016, pp. 400–415.
68. Przemyslaw Daca, Ashutosh Gupta, Thomas A. Henzinger, “Coverage-driven abstraction refinement,” *Proc. Conf. Verification, Model Checking, and Abstract Interpretation (VMCAI)*, Lecture Notes in Computer Science 9583, Springer, 2016, pp. 328–347.
69. Thomas A. Henzinger, Jan Otop, Roopsha Samanta, “Lipschitz robustness of timed I/O systems,” *Proc. Conf. Verification, Model Checking, and Abstract Interpretation (VMCAI)*, Lecture Notes in Computer Science 9583, Springer, 2016, pp. 250–267.
70. Sergiy Bogomolov, Thomas A. Henzinger, Andreas Podelski, Jakob Ruess, Christian Schilling, “Adaptive moment closure for parameter inference of biochemical reaction networks,” *Proc. Conf. Computational Methods in Systems Biology (CMSB)*, Lecture Notes in Computer Science 9308, Springer, 2015, pp. 77–89.
71. Pavol Cerný, Edmund M. Clarke, Thomas A. Henzinger, Arjun Radhakrishna, Leonid Ryzhyk, Roopsha Samanta, Thorsten Tarrach, “From nonpreemptive to preemptive scheduling using synchronization synthesis,” *Proc. Conf. Computer-Aided Verification (CAV)*, Lecture Notes in Computer Science 9207, Springer, 2015, pp. 180–197. Invited to a special issue of *Formal Methods in System Design* for selected papers of CAV 2015.
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Refereed Journal Papers

1. Konstantin Kueffner, Anna Lukina, Christian Schilling, Thomas A. Henzinger: “Into the unknown: Active monitoring of neural networks,” *Software Tools for Technology Transfer* 25:575–592, 2023. Special issue for selected papers of RV 2021.
2. Van-Giang Trinh, Belaid Benhamou, Thomas A. Henzinger, Samuel Pastva: “Trap spaces of multi-valued networks: Definition, computation, and applications,” *Bioinformatics* 39:513–522, 2023.
3. Mathias Lechner, Alexander Amini, Daniela Rus, Thomas A. Henzinger, “Revisiting the adversarial robustness-accuracy tradeoff in robot learning,” *IEEE Robotics and Automation Letters* 8:1595–1602, 2023.
4. Tatjana Petrov, Claudia Iglar, Ali Sezgin, Thomas A. Henzinger, Calin C. Guet, “Long-lived transients in gene regulation,” *Theoretical Computer Science* 893:1–16, 2021.

5. Milad Aghajohari, Guy Avni, Thomas A. Henzinger, “Determinacy in discrete-bidding infinite-duration games,” *Logical Methods in Computer Science* 17(1), 2021.
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7. Mathias Lechner, Ramin Hasani, Alexander Amini, Thomas A. Henzinger, Daniela Rus, Radu Grosu, “Neural circuit policies enabling auditable autonomy,” *Nature Machine Intelligence* 2:642–652, 2020.
8. Guy Avni, Thomas A. Henzinger, Orna Kupferman, “Dynamic resource allocation games,” *Theoretical Computer Science* 807:42–55, 2020.
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82. Thomas A. Henzinger, Pei-Hsin Ho, Howard Wong-Toi, “HYTECH: A model checker for hybrid systems,” *Software Tools for Technology Transfer* 1:110–122, 1997. Special issue on Timed and Hybrid Systems.
83. Rajeev Alur, Thomas A. Henzinger, “Real-time system = discrete system + clock variables,” *Software Tools for Technology Transfer* 1:86–109, 1997. Special issue on Timed and Hybrid Systems.
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87. Rajeev Alur, Costas Courcoubetis, Nicolas Halbwachs, Thomas A. Henzinger, Pei-Hsin Ho, Xavier Nicollin, Alfredo Olivero, Joseph Sifakis, Sergio Yovine, “The algorithmic analysis of hybrid systems,” *Theoretical Computer Science* 138:3–34, 1995. Special issue on Hybrid Systems. Most cited paper, *Theoretical Computer Science* 1995–2004.
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91. Rajeev Alur, Thomas A. Henzinger, “Real-time logics: Complexity and expressiveness,” *Information and Computation* 104:35–77, 1993. Special issue for selected papers of LICS 1990.
92. Thomas A. Henzinger, “Sooner is safer than later,” *Information Processing Letters* 43:135–141, 1992.

Invited Papers

1. Krishnendu Chatterjee, Thomas A. Henzinger, Mathias Lechner, Đorđe Žikelić, “A learner-verifier framework for neural-network controllers and certificates of stochastic systems,” *Proc. Conf. Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, Part I, Lecture Notes in Computer Science 13993, Springer, 2023, pp. 3–25. Keynote lecture at ETAPS 2023.
2. Guy Avni, Thomas A. Henzinger, “An updated survey of bidding games on graphs,” *Proc. Symp. Mathematical Foundations of Computer Science (MFCS)*, Leibniz International Proceedings in Informatics 241, 2022, pp. 3:1–6. Keynote lecture at MFCS 2022.
3. Ezio Bartocci, Thomas Ferrère, Thomas A. Henzinger, Dejan Ničković, Ana Oliveira da Costa, “Flavors of sequential information flow,” *Proc. Conf. Verification, Model Checking, and Abstract Interpretation (VMCAI)*, Lecture Notes in Computer Science 13182, Springer, 2022, pp. 1–19. Keynote lecture at VMCAI 2022.
4. Thomas A. Henzinger, “Quantitative monitoring of software,” *Proc. Conf. Verified Software: Theories, Tools, and Experiments (VSTTE)*, Lecture Notes in Computer Science 13124, Springer, 2021, pp. 3–6. Keynote lecture at VSTTE 2021.
5. Thomas A. Henzinger, N. Ege Saraç, “Monitoring under assumptions,” *Proc. Conf. Runtime Verification (RV)*, Lecture Notes in Computer Science 12399, 2020, pp. 3–18. Keynote lecture at RV 2020.
6. Guy Avni, Thomas A. Henzinger, “A survey of bidding games on graphs,” *Proc. Conf. Concurrency Theory (CONCUR)*, Leibniz International Proceedings in Informatics 171, 2020, pp. 1:1–21. Keynote lecture at CONCUR 2020.
7. Guy Avni, Thomas A. Henzinger, Rasmus Ibsen-Jensen, Petr Novotný, “Bidding games on Markov decision processes,” *Proc. Conf. Reachability Problems (RP)*, Lecture Notes in Computer Science 11674, Springer, 2019, pp. 1–12. Invited lecture at RP 2019.
8. Rajeev Alur, Mirco Giacobbe, Thomas A. Henzinger, Kim G. Larsen, Marius Mikucionis, “Continuous-time models for system design and analysis,” *Computing and Software Science: State of the Art and Perspectives*, Lecture Notes in Computer Science 10000, Springer, 2019, pp. 452–477.
9. Alexey Bakhirkin, Thomas Ferrère, Thomas A. Henzinger, Dejan Ničković, “The first-order logic of signals,” *Proc. Conf. Embedded Software (EMSOFT)*, ACM Press, 2018, pp. 1–10. Invited lecture at EMSOFT 2018.
10. Krishnendu Chatterjee, Thomas A. Henzinger, Jan Otop, “Computing average response time,” *Principles of Modeling*, Lecture Notes in Computer Science 10760, Springer, 2018, pp. 143–161.
11. Edmund M. Clarke, Thomas A. Henzinger, Helmut Veith, “Introduction to model checking,” *Handbook of Model Checking*, Springer, 2018, pp. 1–26.
12. Krishnendu Chatterjee, Laurent Doyen, Thomas A. Henzinger, “The cost of exactness in quantitative reachability,” *Models, Algorithms, Logics, and Tools*, Lecture Notes in Computer Science 10460, Springer, 2017, pp. 367–381.
13. Krishnendu Chatterjee, Thomas A. Henzinger, Jan Otop, “Quantitative monitor automata,” *Proc. Static Analysis Symp. (SAS)*, Lecture Notes in Computer Science 9837, Springer, 2016, pp. 23–38. Invited lecture at SAS 2016.

14. Luca Aceto, Thomas A. Henzinger, Joost-Pieter Katoen, Wolfgang Thomas, Moshe Y. Vardi, “Viewpoints on logic activities in Europe, twenty years later,” *Bulletin of the EATCS* 118, 2016.
15. Thomas A. Henzinger, Jean-François Raskin, “The equivalence problem for finite automata,” *Communications of the ACM* 58, 2015, p. 86. Technical perspective.
16. Rajeev Alur, Thomas A. Henzinger, Moshe Y. Vardi, “Theory in practice for system design and verification,” *SIGLOG News* 2(1), 2015, pp. 46–51.
17. Andrew D. Gordon, Thomas A. Henzinger, Aditya V. Nori, Sriram K. Rajamani, “Probabilistic programming,” *Proc. ACM-IEEE Int. Conf. Software Engineering (ICSE)*, IEEE Computer Society Press, 2014, pp. 167–181. Future of Software Engineering track at ICSE 2014.
18. Andreas Haas, Michael Lippautz, Thomas A. Henzinger, Hannes Payer, Ana Sokolova, Christoph M. Kirsch, Ali Sezgin, “Distributed queues in shared memory: Multicore performance and scalability through quantitative relaxation.” *Proc. ACM Conf. Computing Frontiers (CF)*, ACM Press, 2013, ch. 17.
19. Thomas A. Henzinger, “The propagation approach for computing biochemical reaction networks,” *Proc. Winter Simulation Conf. (WSC)*, IEEE Computer Society Press, 2012, p. 320. Keynote lecture at WSC 2012.
20. Thomas A. Henzinger, “Quantitative reactive models,” *Proc. ACM-IEEE Conf. Model-driven Engineering Languages and Systems (MODELS)*, Lecture Notes in Computer Science 7590, Springer, 2012, pp. 1–2. Keynote lecture at MODELS 2012.
21. Thomas A. Henzinger, Dejan Ničković, “Independent implementability of viewpoints,” *Proc. Monterey Workshop on Large-Scale Complex IT Systems*, Lecture Notes in Computer Science 7539, Springer, 2012, pp. 380–395. Invited lecture at the Monterey Workshop 2012.
22. Pavol Cerný, Thomas A. Henzinger, “From boolean to quantitative synthesis,” *Proc. Conf. Embedded Software (EMSOFT)*, ACM Press, 2011, pp. 149–154. Invited tutorial at EMSOFT 2011.
23. Thomas A. Henzinger, Maria Mateescu, “Propagation models for computing biochemical reaction networks,” *Proc. Conf. Computational Methods in Systems Biology (CMSB)*, Lecture Notes in Bioinformatics, Springer, 2011, pp. 1–3. Keynote lecture at CMSB 2011. Invited to a special issue of the *IEEE-ACM Transactions on Computational Biology and Bioinformatics* for selected papers of CMSB 2011.
24. Roderick Bloem, Krishnendu Chatterjee, Karin Greimel, Thomas A. Henzinger, Barbara Jobstmann, “Specification-centered robustness,” *Proc. Symp. Industrial Embedded Systems (SIES)*, IEEE Computer Society Press, 2011. Invited lecture at SIES 2011.
25. Thomas A. Henzinger, Anmol V. Singh, Vasu Singh, Thomas Wies, Damien Zufferey, “A marketplace for cloud resources,” *Proc. Conf. Embedded Software (EMSOFT)*, ACM Press, 2010, pp. 1–8. Keynote lecture at EMSOFT 2010.
26. Krishnendu Chatterjee and Thomas A. Henzinger, “Probabilistic automata on infinite words: Decidability and undecidability results,” *Proc. Symp. Automated Technology for Verification and Analysis (ATVA)*, Lecture Notes in Computer Science 6252, Springer, 2010, pp. 1–16. Keynote lecture at ATVA 2010.
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40. Jasmin Fisher, Thomas A. Henzinger, “Executable biology,” *Proc. Winter Simulation Conf. (WSC)*, IEEE Computer Society Press, 2006, pp. 1675–1682. Invited lecture at WSC 2006.
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57. Thomas A. Henzinger, “From models to code: The missing link in embedded software,” *Proc. Conf. Hybrid Systems: Computation and Control (HSCC)*, Lecture Notes in Computer Science 2289, Springer, 2002, pp. 5–6. Keynote lecture at HSCC 2002.
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60. Thomas A. Henzinger, Jörg Preußig, Howard Wong-Toi, “Some lessons from the HYTECH experience,” *Proc. Conf. Decision and Control (CDC)*, IEEE Press, 2001, pp. 2887–2892. Invited for a special session on Hybrid Systems at CDC 2001.
61. Alberto L. Sangiovanni-Vincentelli, Thomas A. Henzinger, Bruce H. Krogh, Oded Maler, Manfred Morari, Costas C. Pantelides, George J. Pappas, Tunc Simsek, Janos Sztipanovits, Stavros Tripakis, “Hybrid systems applications: An oxymoron?,” *Proc. Conf. Hybrid Systems: Computation and Control (HSCC)*, Lecture Notes in Computer Science 2034, Springer, 2001, pp. 5–6. Panel statement at HSCC 2001.
62. Thomas A. Henzinger, Shaz Qadeer, Sriram K. Rajamani, “Decomposing refinement proofs using assume-guarantee reasoning,” *Proc. IEEE-ACM Int. Conf. Computer-Aided Design (ICCAD)*, IEEE Computer Society Press, 2000, pp. 245–252. Invited tutorial at ICCAD 2000.
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64. Thomas A. Henzinger, Rupak Majumdar, “A classification of symbolic transition systems,” *Proc. Conf. Theoretical Aspects of Computer Science (STACS)*, Lecture Notes in Computer Science 1770, Springer, 2000, pp. 13–34. Keynote lecture at STACS 2000.
65. Thomas A. Henzinger, “The theory of hybrid automata,” in *Verification of Digital and Hybrid Systems* (M.K. Inan, R.P. Kurshan, eds.), NATO ASI Series F: Computer and Systems Sciences, vol. 170, Springer, 2000, pp. 265–292. Invited lecture series at the NATO-ASI Summer School on the Verification of Digital and Hybrid Systems, Antalya, Turkey, June 1997.
66. Thomas A. Henzinger, “It’s about time: Real-time logics reviewed,” *Proc. Conf. Concurrency Theory (CONCUR)*, Lecture Notes in Computer Science 1466, Springer, 1998, pp. 439–454. Keynote lecture at CONCUR 1998.
67. Rajeev Alur, Thomas A. Henzinger, Orna Kupferman, “Alternating-time temporal logic,” in *Compositionality: The Significant Difference* (W.-P. de Roever, H. Langmaack, A. Pnueli, eds.), Lecture Notes in Computer Science 1536, Springer, 1998, pp. 23–60. Invited lecture at the Symposium on Compositionality, Bad Malente-Gremsmühlen, Germany, September 1997.

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69. Rajeev Alur, Thomas A. Henzinger, Howard Wong-Toi, “Symbolic analysis of hybrid systems,” *Proc. Conf. Decision and Control (CDC)*, IEEE Press, 1997, pp. 702–707. Invited for a special session on Hybrid Systems at CDC 1997.
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71. Thomas A. Henzinger, “Some myths about formal verification,” *ACM Computing Surveys* 28(4), 1996, p. 119. Invited contribution.
72. Rajeev Alur, Costas Courcoubetis, Thomas A. Henzinger, Pei-Hsin Ho, Xavier Nicollin, Alfredo Olivero, Joseph Sifakis, Sergio Yovine, “The algorithmic analysis of hybrid systems,” *Proc. Int. Conf. Analysis and Optimization of Systems: Discrete-Event Systems (ICAOS)*, Lecture Notes in Control and Information Sciences 199, Springer, 1994, pp. 331–351. Invited for a special session on Hybrid Systems at ICAOS 1994.
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74. Thomas A. Henzinger, Zohar Manna, Amir Pnueli, “Timed transition systems,” in *Real Time: Theory in Practice* (J.W. de Bakker, C. Huizing, W.-P. de Roever, G. Rozenberg, eds.), Lecture Notes in Computer Science 600, Springer, 1992, pp. 226–251. Invited lecture at the REX Workshop on Real-Time Systems, Mook, The Netherlands, June 1991.
75. Rajeev Alur, Thomas A. Henzinger, “Logics and models of real time: A survey,” in *Real Time: Theory in Practice* (J.W. de Bakker, C. Huizing, W.-P. de Roever, G. Rozenberg, eds.), Lecture Notes in Computer Science 600, Springer, 1992, pp. 74–106. Invited contribution.
76. Rajeev Alur, Thomas A. Henzinger, “Time for logic,” *SIGACT News* 22(3), 1991, pp. 6–12. Invited logic column.
77. Thomas A. Henzinger, Zohar Manna, Amir Pnueli, “An interleaving model for real time,” *Proc. Jerusalem Conf. Information Technology (JCIT)*, IEEE Computer Society Press, 1990, pp. 717–730. Invited for a special session on Reactive Systems at JCIT 1990.

Edited Volumes

1. Edmund M. Clarke, Thomas A. Henzinger, Helmut Veith, Roderick Bloem, eds., *Handbook of Model Checking*, Springer, 2018.
2. Georg Gottlob, Thomas A. Henzinger, Georg Weissenbacher, eds., *Formal Methods in System Design*, 2017. Special issue in memoriam Helmut Veith.
3. Ashutosh Gupta, Thomas A. Henzinger, eds., *ACM Transactions on Modeling and Computer Simulation* 25(2), 2015. Special issue for selected papers of CMSB 2013.
4. Ashutosh Gupta, Thomas A. Henzinger, eds., *Proc. Conf. Computational Methods in Systems Biology (CMSB)*, Lecture Notes in Computer Science 8130, 2013.

5. Antonin Kučera, Thomas A. Henzinger, Jaroslav Nešetřil, Tomáš Vojnar, David Antoš, eds., *Proc. Doctoral Workshop on Mathematical and Engineering Methods in Computer Science (MEMICS)*, Lecture Notes in Computer Science 7721, 2013.
6. Krishnendu Chatterjee, Thomas A. Henzinger, eds., *Proc. Conf. Formal Modeling and Analysis of Timed Systems (FORMATS)*, Lecture Notes in Computer Science 6246, Springer, 2010.
7. Jacques Duparc, Thomas A. Henzinger, eds., *Proc. Conf. Computer Science Logic (CSL)*, Lecture Notes in Computer Science 4646, Springer, 2007.
8. Thomas A. Henzinger, Christoph M. Kirsch, eds., *Proc. ACM Conf. Embedded Software (EMSOFT)*, Lecture Notes in Computer Science 2211, Springer, 2001.
9. Rajeev Alur, Thomas A. Henzinger, eds., *Information and Computation* 164(2), 2001. Special issue for selected papers of LICS 1996.
10. Rajeev Alur, Thomas A. Henzinger, eds., *Formal Methods in System Design* 15(1), 1999. Special issue for selected papers of LICS 1996.
11. Rajeev Alur, Thomas A. Henzinger, eds., *Formal Methods in System Design* 14(3), 1998. Special issue for selected papers of CAV 1996.
12. Thomas A. Henzinger, Shankar S. Sastry, eds., *Proc. Conf. Hybrid Systems: Computation and Control (HSCC)*, Lecture Notes in Computer Science 1386, Springer, 1998.
13. Rajeev Alur, Thomas A. Henzinger, eds., *Proc. Conf. Computer-Aided Verification (CAV)*, Lecture Notes in Computer Science 1102, Springer, 1996.
14. Rajeev Alur, Thomas A. Henzinger, Eduardo D. Sontag, eds., *Hybrid Systems III: Verification and Control*, Lecture Notes in Computer Science 1066, Springer, 1996. Proceedings of the Workshop on Hybrid Systems, New Brunswick, New Jersey, October 1995.

Conference Abstracts and Posters

1. Đorđe Žikelić, Mathias Lechner, Krishnendu Chatterjee, Thomas A. Henzinger, “Learning stabilizing policies in stochastic control systems,” Workshop on Socially Responsible Machine Learning (SRML), *International Conference on Learning Representations (ICLR)*, April 2022.
2. Cezara Dragoi, Thomas A. Henzinger, Damien Zufferey, “The need for language support for fault-tolerant distributed systems,” Summit on Advances in Programming Languages (SNAPL), Asilomar, California, May 2015.
3. Thomas A. Henzinger, Jan Otop, “From model checking to model measuring,” *Symp. Logic in Computer Science (LICS)*, New Orleans, Louisiana, June 2013.
4. Pavol Cerný, Thomas A. Henzinger, Arjun Radhakrishna, “Quantitative simulation games,” Workshop on Games and Probabilistic Models in Formal Verification, Brno, Czech Republic, August 2010.
5. Thomas A. Henzinger, Anmol V. Singh, Vasu Singh, Thomas Wies, Damien Zufferey, “EC2 on EC2,” Workshop on Exploiting Concurrency Efficiently and Correctly (EC2), Edinburgh, United Kingdom, July 2010.
6. Frédéric Didier, Thomas A. Henzinger, Maria Mateescu, Verena Wolf, “Solving the chemical master equation using creeping windows,” Q-BIO Conference on Cellular Information Processing, Santa Fe, New Mexico, August 2009. Invited lecture.

7. Roderick Bloem, Karin Greimel, Thomas A. Henzinger, Barbara Jobstmann, “Synthesizing robust systems,” Workshop on Games for Design, Verification, and Synthesis (GASICS), Grenoble, France, June 2009.
8. Rachid Guerraoui, Thomas A. Henzinger, Michal Kapalka, Vasu Singh, “Generalizing the correctness of transactional memory,” Workshop on Exploiting Concurrency Efficiently and Correctly (EC2), Grenoble, France, June 2009.
9. Rachid Guerraoui, Thomas A. Henzinger, Barbara Jobstmann, Vasu Singh, “Model checking transactional memories,” Workshop on Exploiting Concurrency Efficiently and Correctly (EC2), Grenoble, France, June 2009.
10. Verena Wolf, Rushil Goel, Maria Mateescu, Thomas A. Henzinger, “Solving the chemical master equation using sliding windows,” Conference on Information Processing in Cells and Tissues (IPCAT), Ascona, Switzerland, April 2009.
11. Marc Schaub, April Bezdek, Thomas A. Henzinger, Freddy Radtke, Jasmin Fisher, “Qualitative crosstalk analysis of Wnt and Notch signaling in mammalian skin,” RECOMB Satellite Conference on Systems Biology, San Diego, California, December 2007.
12. Thomas A. Henzinger, Slobodan Matic, “Interfaces for real-time components,” Symposium on Formal Methods for Components and Objects (FMCO), Amsterdam, The Netherlands, October 2007. Invited lecture.
13. Jasmin Fisher, Nir Piterman, Alex Hajnal, Thomas A. Henzinger, “Computational modeling shedding light on development,” Conference on Intelligent Systems for Molecular Biology (ISMB) and European Conference on Computational Biology (ECCB), Vienna, Austria, July 2007.
14. Jasmin Fisher, Nir Piterman, Alex Hajnal, Thomas A. Henzinger, “Predictive modeling of signaling crosstalk during *C. elegans* vulval development,” International *C. elegans* Meeting, Los Angeles, California, June 2007.
15. Marc Schaub, Thomas A. Henzinger, Jasmin Fisher, “Qualitative networks: A symbolic approach to analyze biological signaling networks,” RECOMB Satellite Conference on Systems Biology, San Diego, California, December 2006.
16. Jasmin Fisher, Nir Piterman, and Thomas A. Henzinger, “Computational modeling and analysis of *C. elegans* vulval development,” European Worm Meeting, Hersonissos, Greece, April 2006.

Technical Reports

This list does not include reports which coincide with publications listed in the other categories.

1. Albert Benveniste, Dejan Ničković, Thomas A. Henzinger, “Compositional contract abstraction for system design,” Research Report 8460, INRIA, January 2014.
2. Thomas A. Henzinger, Hannes Payer, Ali Sezgin, “Replacing competition with cooperation to achieve scalable lock-free FIFO queues,” Technical Report IST-2013-124, ISTA, 2013.
3. Krishnendu Chatterjee, Thomas A. Henzinger, Mathieu Tracol, “Decidability frontier for probabilistic automata on infinite words,” *Computing Research Repository* (CoRR) abs/1104.0127, 2011.
4. Krishnendu Chatterjee, Luca de Alfaro, Thomas A. Henzinger, “Strategy improvement for concurrent safety games,” *Computing Research Repository* (CoRR) abs/0804.4530, 2008.

5. Arkadeb Ghosal, Daniel Iercan, Christoph M. Kirsch, Thomas A. Henzinger, Alberto L. Sangiovanni-Vincentelli, "Separate compilation of hierarchical real-time programs into linear-bounded embedded machine code," *Proc. Workshop on Automatic Program Generation for Embedded Systems (APGES)*, 2007.
6. Krishnendu Chatterjee, Thomas A. Henzinger, Nir Piterman, "Algorithms for Büchi games," *Proc. Workshop on Games in Design and Verification (GDV)*, 2006. Invited lecture. See also *Computing Research Repository (CoRR)* abs/0805.2620, 2008.
7. Dirk Beyer, Arindam Chakrabarti, Thomas A. Henzinger, "An interface formalism for web services," *Proc. Workshop on Foundations of Interface Technologies (FIT)*, 2005.
8. Thomas A. Henzinger, "The logical execution time assumption," *Proc. Workshop on Software Engineering for Embedded Systems* (M. Dwyer, B. Krogh, I. Lee, eds.), University of Illinois, Chicago, September 2003. Invited lecture.
9. David Dill, Thomas A. Henzinger, Sam Owre, Natarajan Shankar, "The SAL language," Technical Report SRI-CSL-01-02, SRI International, 2001.
10. Thomas A. Henzinger, "Logics for reasoning about real-time computation," *Volume of Abstracts of the International Congress of Logic, Methodology, and Philosophy of Science*, International Union of History and Philosophy of Science, Cracow, August 1999. Invited lecture.
11. Thomas A. Henzinger, "Reactive and hybrid systems," in *Fourth Biennial Report* (K. Mehlhorn, ed.), Max-Planck Institute for Computer Science, Saarbrücken, June 1999. Invited contribution.
12. Thomas A. Henzinger, Benjamin Horowitz, Rupak Majumdar, "Interval-numerical methods for hybrid-systems analysis," *Proc. AAAI Spring Symp. on Hybrid Systems and Artificial Intelligence* (G. Biswas, S. McIlraith, eds.), Technical Report SS-99-05, AAAI Press, March 1999. Keynote lecture.
13. Thomas A. Henzinger, "Computer-Aided Verification of Embedded Systems," *Proc. IFIP World Computer Congress* (K. Mehlhorn, ed.), Technical Report 117, Austrian Computer Society, August 1998. Invited lecture.
14. Thomas A. Henzinger, Peter W. Kopke, *Hybrid Automata with Finite Mutual Simulations*, Technical Report CSD-TR-95-1497, Cornell University, March 1995.
15. Thomas A. Henzinger, Peter W. Kopke, *Undecidability Results for Hybrid Systems*, Technical Report CSD-TR-95-1483, Cornell University, February 1995. Invited lecture at the Workshop on Hybrid Systems and Autonomous Control, Ithaca, New York, October 1994.
16. Thomas A. Henzinger, Anuj Puri, Pravin Varaiya, *Clock Transformation of Hybrid Automata with Rectangular Differential Inclusions*, Technical Report, University of California, Berkeley, October 1994. Invited lecture at the Workshop on Hybrid Systems and Autonomous Control, Ithaca, New York, October 1994.
17. Thomas A. Henzinger, Pei-Hsin Ho, *Model-checking Strategies for Linear Hybrid Systems*, Technical Report CSD-TR-94-1437, Cornell University, July 1994. Invited lecture at the Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems (IEA/AIE), Austin, Texas, May 1994.
18. Thomas A. Henzinger, *The Temporal Specification and Verification of Real-Time Systems*, Ph.D. Thesis (Zohar Manna, advisor), Technical Report STAN-CS-91-1380, Stanford University, August 1991. Nominated for the ACM Best Dissertation Award by Stanford University.

19. Thomas A. Henzinger, “When eventually isn’t good enough,” *Proc. Annual Meeting of the Stanford Computer Forum* (J.D. Ullman, J. Hennessy, eds.), Technical Report, Stanford University, February 1991.
20. Thomas A. Henzinger, “The temporal specification and verification of real-time systems,” *Proc. Berkeley Workshop on Temporal and Real-Time Specification* (P.B. Ladkin, F.H. Vogt, eds.), Technical Report TR-90-060, International Computer Science Institute, Berkeley, August 1990. Invited lecture.
21. Thomas A. Henzinger, “A temporal logic for real time,” *Proc. Annual Meeting of the Stanford Computer Forum* (N. Nilsson, J. Hennessy, eds.), Technical Report, Stanford University, February 1990.
22. Thomas A. Henzinger, *Denotational Equivalence of Goal-driven and Data-driven Interpretation of Applicative Programs*, M.S. Thesis (Thomas J. Myers, advisor), Technical Report CIS-87-05, University of Delaware, August 1986. Extended version appeared as Technical Report RISC-86-16.0, Kepler University, December 1986.
23. Thomas A. Henzinger, *Resolution: A Special Case of the Manna-Waldinger Relation Replacement Rule*, Technical Report CAMP-85-21.0, Kepler University, July 1985.

Other Publications

1. Thomas A. Henzinger, “Bridges to the future,” Foreword for *Annual Report 2022*, ISTA, 2023, p. 8.
2. Thomas A. Henzinger, Foreword, *Annual Report 2021*, ISTA, 2022, p. 4.
3. Thomas A. Henzinger, Foreword, *Annual Report 2020*, ISTA, 2021, p. 4.
4. Thomas A. Henzinger, Foreword, *Annual Report 2019*, ISTA, 2020, pp. 4–5.
5. Thomas A. Henzinger, “Wissen schafft Sicherheit,” Kommentar, *Der Standard*, April 26, 2020.
6. Thomas A. Henzinger, Foreword, *Annual Report 2018*, ISTA, 2019, pp. 4–5.
7. Thomas A. Henzinger, Foreword, *Annual Report 2017*, ISTA, 2018, pp. 6–7.
8. Thomas A. Henzinger, “The role of IST Austria in the national research landscape,” *Prospects and Future Tasks of Universities*, Austrian Council for Research and Technology Development, 2017, pp. 325–332.
9. Luca Aceto, Thomas A. Henzinger, “Interview about IST Austria,” *Bulletin of the EATCS* 121, 2017.
10. Thomas A. Henzinger, Foreword, *Annual Report 2016*, ISTA, 2017, pp. 6–7.
11. Thomas A. Henzinger, Foreword, *Annual Report 2015*, ISTA, 2016, pp. 6–7.
12. Thomas A. Henzinger, “The vision alive,” Foreword for *Annual Report 2014*, ISTA, 2015, p. 2.
13. Thomas A. Henzinger, “Expanding horizons,” Foreword for *Annual Report 2013*, ISTA, 2014, p. 3.
14. Thomas A. Henzinger, Lisa Cichocki, “Das Institute of Science and Technology Austria: Von der grünen Wiese zu einem internationalen Forschungsinstitut im Grünen,” *Exzellenz in der Wissenschaft*, Tagungsband des Österreichischen Wissenschaftsrates, 2013, pp. 129–142.
15. Anuj Dawar, Thomas A. Henzinger, Damian Niwinski, “The Ackermann Award 2013,” *Proc. Conf. Computer Science Logic (CSL)*, Leibniz International Proceedings in Informatics, Springer, 2013, pp. 1–4.
16. Thomas A. Henzinger, “Positioned for success,” Foreword for *Annual Report 2012*, ISTA, 2013, p. 3.

17. Rajeev Alur, Aarti Gupta, Thomas A. Henzinger, Marta Z. Kwiatkowska, “The 2012 CAV Award citation,” *Formal Methods in System Design*, 2013.
18. Thomas A. Henzinger, “Creating impact step by step,” Foreword for *Annual Report 2011*, ISTA, 2012, p. 3.
19. Rajeev Alur, Thomas A. Henzinger, Marta Z. Kwiatkowska, Moshe Y. Vardi, “The 2011 CAV Award citation,” *Formal Methods in System Design* 41:1–2, 2012.
20. Thomas A. Henzinger, “Growing up,” Foreword, *Annual Report 2010*, ISTA, 2011, p. 1.
21. Thomas A. Henzinger, “An ambitious experiment,” Foreword for *From Vision to Reality: Annual Report 2009*, ISTA, 2010, p. 1.
22. Randal E. Bryant, Orna Grumberg, Thomas A. Henzinger, Moshe Y. Vardi, “The 2008 CAV Award citation,” *Formal Methods in System Design* 35:4–5, 2009.
23. Thomas A. Henzinger, Foreword for *Systems and Software Verification* by B. Berard, M. Bidoit, A. Finkel, F. Laroussinie, A. Petit, L. Petrucci, and P. Schnoebelen, Springer, 2001, p. v.
24. Thomas A. Henzinger, Book review for *Verifying Temporal Properties of Systems* by J.C. Bradfield, *SIGACT News* 24(1):27–28, 1993.
25. Edward Chang, Thomas A. Henzinger, Solution Manual for *The Deductive Foundations of Computer Programming* by Z. Manna and R. Waldinger, Addison-Wesley, 1992, 350 pages.
26. Thomas A. Henzinger, Solution Manual for *The Logical Basis for Computer Programming, Volume 2* by Z. Manna and R. Waldinger, Addison-Wesley, 1990, 293 pages.

Lectures

Invited Lectures at Conferences

1. *Neural certificates*, keynote lecture, Conference on Neurosymbolic Systems (NEUS), Berkeley, California, May 2023.
2. *A Learner-Verifier Framework for Neural Controllers and Certificates of Stochastic Systems*, unifying speaker, European Joint Conferences on Theory and Practice of Software (ETAPS), Paris, France, April 2023.
3. *A Personal History of Formal Modeling and Analysis of Timed Systems before there was FORMATS*, Conference on Formal Modeling and Analysis of Timed Systems (FORMATS), Warsaw, Poland, September 2022.
4. *Bidding Games on Graphs: An Update*, keynote lecture, Symposium on Mathematical Foundations of Computer Science (MFCS), Vienna, Austria, August 2022.
5. *Formal Methods meet Neural Networks: A Selection*, keynote lecture, IJCAI Workshop on “AI Safety,” Vienna, Austria, July 2022.
6. *Flavors of Sequential Information Flow*, keynote lecture, Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI), Philadelphia, Pennsylvania, January 2022 (virtual).
7. *Quantitative Monitoring of Software*, keynote lecture, Conference on Verified Software: Theories, Tools, and Experiments (VSTTE), New Haven, Connecticut, October 2021 (virtual).
8. *Monitorability under Assumptions*, keynote lecture, Conference on Runtime Verification (RV), Los Angeles, California, October 2020 (virtual).

9. *Bidding Games on Graphs*, keynote lecture, Conference on Concurrency Theory (CONCUR), Vienna, Austria, September 2020 (virtual).
10. *Temporal Logics for Multi-Agent Systems*, International Colloquium on Theoretical Aspects of Computing (ICTAC), Hammamet, Tunisia, November 2019.
11. *Bidding Games on Markov Decision Processes*, Conference on Reachability Problems (RP), Brussels, Belgium, September 2019.
12. *Model Checking Game Properties of Multi-agent Systems Revisited*, EATCS Award lecture, International Colloquium on Automata, Languages, and Programming (ICALP), Patras, Greece, July 2019.
13. *Temporal Logics for Multi-Agent Systems*, Symposium in Honor of the 60th Birthday of Andrei Voronkov, Tbilisi, Georgia, May 2019.
14. *The First-Order Logic of Signals*, keynote lecture, Embedded Systems Week (ESWEEK), Turin, Italy, October 2018.
15. *Temporal Logics for Multi-Agent Systems*, keynote lecture, Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), Stockholm, Sweden, July 2018.
16. *Promises and Challenges in Reactive Modeling: A Personal Perspective*, Symposium in Honor of the 60th Birthday of Edward A. Lee, Berkeley, California, October 2017.
17. *The Quest for Average-Response Time*, keynote lecture, Conference on Formal Methods and Models for System Design (MEMOCODE), Vienna, Austria, September 2017.
18. *Hybrid Systems*, Verification Mentoring Workshop, Conference on Computer-Aided Verification (CAV), Heidelberg, Germany, July 2017.
19. *The Quest for Average-Response Time*, Symposium in Honor of the 60th Birthday of David Dill, Heidelberg, Germany, July 2017.
20. *Promises and Challenges in Reactive Modeling: A Personal Perspective*, Carl Adam Petri Lecture, Joint Conference on Petri Nets and Application of Concurrency to System Design (PN-ACSD), Zaragoza, Spain, June 2017.
21. *Behavioral Software Metrics*, keynote lecture, Ada-Europe Conference (ADA), Vienna, Austria, June 2017.
22. *Quantitative Methods in Formal Verification*, keynote lecture, Conference on Fundamentals of Software Engineering (FSEN), Tehran, Iran, April 2017.
23. *The Quest for Average-Response Time*, keynote lecture, Conference on Tools and Methods for Program Analysis (TMPA), Moscow, Russia, March 2017.
24. *Quantitative Monitor Automata*, Static Analysis Symposium (SAS), Edinburgh, United Kingdom, September 2016.
25. *The Quest for Average-Response Time*, EQINOCs Conclusion Workshop, Paris, France, May 2016.
26. *Reactive Systems: A Powerful Paradigm for Modeling and Analysis from Engineering to Biology*, Austrian Computer Science Day, Vienna, Austria, October 2015.
27. *From Boolean to Quantitative Methods in Formal Verification*, Amir Pnueli Memorial Lecture, Haifa Verification Conference (HVC), Haifa, Israel, November 2014.
28. *Computer-Aided Verification Technology for Biology*, keynote lecture, Conference on Formal Methods in Computer-Aided Design (FMCAD), Lausanne, Switzerland, October 2014.

29. *A Research Institute as Start-up*, Computer Science 50th Anniversary Symposium, Ithaca, New York, October 2014.
30. *Quantitative Reactive Modeling*, Workshop on Reactive Systems in Honor of the 64th Birthday of David Harel, Vienna, Austria, July 2014.
31. *Computing the Mutational Robustness of Gene Regulatory Networks*, Workshop on Logic and Systems Biology (LSB), Vienna, Austria, July 2014.
32. *Embedded Software: Better Models, Better Code*, keynote lecture, Bosch Conference on Systems and Software Engineering, Ludwigsburg, Germany, May 2014.
33. *Simulation Games*, Workshop on Strategic Reasoning (SR), Grenoble, France, April 2014.
34. *Behavioral Software Metrics*, keynote lecture, Conference on Software Engineering and Formal Methods (SEFM), Madrid, Spain, September 2013.
35. *New Trends in Program Synthesis*, Symposium on Games, Automata, Logics, and Formal Verification (GANDALF), Borca di Cadore, Italy, August 2013.
36. *Quantitative Fitness Measures for Embedded Systems*, keynote lecture, Conference on Pervasive and Embedded Computing and Communication Systems (PECCS), Barcelona, Spain, February 2013.
37. *The Propagation Approach for Computing Biochemical Reaction Networks*, keynote lecture, IEEE Winter Simulation Conference (WSC), Berlin, Germany, December 2012.
38. *Quantitative Reactive Models*, keynote lecture, ACM-IEEE Conference on Model-driven Engineering Languages and Systems (MODELS), Innsbruck, Austria, October 2012.
39. *Twenty Years of Real-Time and Hybrid Systems*, Twenty Years of Verimag Celebration, Grenoble, France, September 2012.
40. *From Boolean to Quantitative Theories of Systems*, keynote lecture, Conference on Trust and Trustworthy Computing (TRUST), Vienna, Austria, June 2012.
41. *New Trends in Program Synthesis*, keynote lecture, Alpine Verification Meeting (AVM), Passau, Germany, May 2012.
42. *From Boolean to Quantitative Synthesis*, ACM Conference on Embedded Software (EMSOFT), Taipei, Taiwan, October 2011.
43. *Propagation Models for Computing Biochemical Reaction Networks*, keynote lecture, Conference on Computational Methods in Systems Biology (CMSB), Paris, France, September 2011.
44. *Ten Years of Interface Automata*, ACM SIGSOFT Impact Paper Award Lecture, ACM Symposium on Foundations of Software Engineering (FSE), Szeged, Hungary, September 2011.
45. *Applications of Games in Quantitative Verification and Synthesis*, invited tutorial, GAMES Workshop, Paris, France, September 2011.
46. *Computational Science versus Computer Science*, keynote lecture, Basel Computational Biology Conference (BC2), Basel, Switzerland, June 2011.
47. *Syntax Matters*, Workshop on Systems Biology, Grenoble, France, May 2011.
48. *Quantitative Reactive Models*, Workshop on Synthesis, Verification, and Analysis of Rich Models (SVARM), Saarbrücken, Germany, April 2011.

49. *Formal Methods for Composing Systems*, Design Automation and Test in Europe (DATE), Grenoble, France, March 2011.
50. *Weighted Automata on Infinite Words*, keynote lecture, Highlights of AutomathA Conference, Vienna, Austria, November 2010.
51. *A Marketplace for Cloud Resources*, keynote lecture, IEEE-ACM Embedded Systems Week, Scottsdale, Arizona, October 2010.
52. *Beyond Finite Automata*, Symposium on Automated Technology for Verification and Analysis (ATVA), Singapore, September 2010.
53. *Interface-based Design and Verification*, invited tutorial, Symposium on Automated Technology for Verification and Analysis (ATVA), Singapore, September 2010.
54. *The Quantitative Agenda in System Analysis*, Workshop on Logics for System Analysis (LFSA), Edinburgh, United Kingdom, July 2010.
55. *From Boolean to Quantitative Theories of Reactive Systems*, Workshop on Interaction and Concurrency Experiences (ICE), Amsterdam, The Netherlands, June 2010.
56. *Quantitative Modeling and Verification*, Amir Pnueli Memorial Symposium, New York, New York, May 2010.
57. *From Boolean to Quantitative Notions of Correctness*, ACM Symposium on Principles of Programming Languages (POPL), Madrid, Spain, January 2010.
58. *Fast Adaptive Uniformization*, IEEE Workshop on High-Performance Computational Systems Biology (HiBi), Trento, Italy, October 2009.
59. *From Boolean to Quantitative System Specifications*, Workshop on Foundations of Component-based Design (WFCD), Grenoble, France, October 2008.
60. *Reachability Analysis of Markovian Population Models*, Workshop on Reachability Problems (RP), Paris, France, September 2009.
61. *Alternating Weighted Automata*, Symposium on Fundamentals of Computation Theory (FCT), Wrocław, Poland, September 2009.
62. *Stochastic Games with Limsup and Liminf Objectives*, International Colloquium on Automata, Languages, and Programming (ICALP), Rhodes, Greece, July 2009.
63. *From Boolean to Quantitative System Specifications*, keynote lecture, Workshop on Quantitative Logics (QUANTLOG), Rhodes, Greece, July 2009.
64. *From Boolean to Quantitative System Specifications*, keynote lecture, Workshop on Quantitative Analysis of Software (QA), Grenoble, France, June 2009.
65. *Quantitative Synthesis*, Workshop on Practical Synthesis for Concurrent Systems (PSY), Grenoble, France, June 2009.
66. *IST Austria: Building a World-Class Institute for Basic Research*, keynote lecture, Campus Opening of ISTA, Klosterneuburg, Austria, June 2009.
67. *Designing Predictable and Robust Systems*, Workshop on Foundations of Component-based Design (WFCD), Atlanta, Georgia, October 2008.
68. *Games in System Design and Verification*, keynote lecture, Conference on Logic and the Foundations of Game and Decision Theory (LOFT), Amsterdam, The Netherlands, July 2008.

69. *Grand Challenges for Real-Time Systems*, keynote lecture, EUROMICRO Conference on Real-Time Systems (ECRTS), Prague, Czech Republic, July 2008.
70. *Challenges in Embedded Systems Design: Predictability and Robustness*, Royal Society Meeting: From Computers to Ubiquitous Computing, London, United Kingdom, March 2008.
71. *Three Sources of Infinity in Computation: Nontermination, Real Time, and Probabilistic Choice*, keynote lecture, Conference on Infinity in Logic and Computation (ILC), Cape Town, South Africa, November 2007.
72. *Quantitative Generalizations of Languages*, keynote lecture, Conference on Developments in Language Theory (DLT), Turku, Finland, July 2007.
73. *Modeling, Verification, and Synthesis of Component Interfaces*, invited tutorial, Conference on Computer-Aided Verification (CAV), Berlin, Germany, July 2007.
74. *The Embedded Systems Design Challenge*, keynote lecture, Workshop on Formal Methods for Industrial-Critical Systems (FMICS), Berlin, Germany, July 2007.
75. *Path Invariants*, Symposium on Automatic Heap Analysis (AHA), Berlin, Germany, July 2007.
76. *Fine-Tuning the Dial between Model Checking and Program Analysis*, Alpine Verification Meeting (AVM), Aussois, France, April 2007.
77. *Games, Time, and Probability: Graph Models for System Design and Analysis*, Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM), Harrachov, Czech Republic, January 2007.
78. *Timed Alternating-Time Temporal Logic*, keynote lecture, Conference on Formal Modeling and Analysis of Timed Systems (FORMATS), Paris, France, September 2006.
79. *Model Checking, Theorem Proving, and Abstract Interpretation: The Convergence of Formal Verification Technologies*, Academia Europaea Grand Challenges of Informatics Symposium, Budapest, Hungary, September 2006.
80. *The Embedded Systems Design Challenge*, keynote lecture, Symposium on Formal Methods (FM), Hamilton, Ontario, August 2006.
81. *From Graph Models to Game Models*, 25 Years of Model Checking Celebration, Seattle, Washington, August 2006.
82. *Semiperfect-Information Games*, keynote lecture, Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS), Hyderabad, India, December 2005.
83. *Processes as Games*, keynote lecture, Workshop on Expressiveness in Concurrency (EXPRESS), San Francisco, California, August 2005.
84. *Games in System Design and Verification*, keynote lecture, Conference on Theoretical Aspects of Rationality and Knowledge (TARK), Singapore, June 2005.
85. *Checking Memory Safety with BLAST*, keynote lecture, Conference on Fundamental Approaches to Software Engineering (FASE), Edinburgh, United Kingdom, April 2005.
86. *Games with Secure Equilibria: A Theory for Component Behavior*, keynote lecture, Symposium on Formal Methods for Components and Objects (FMCO), Leiden, The Netherlands, November 2004.
87. *Interface-based Design*, keynote lecture, Monterey Workshop on Software Engineering Tools, Baden, Austria, October 2004.

88. *Trading Memory for Randomness*, keynote lecture, IEEE Conference on Quantitative Evaluation of Systems (QEST), Twente, The Netherlands, September 2004.
89. *Applications of Games in System Design and Verification*, invited tutorial, GAMES Workshop, Bordeaux, France, September 2004.
90. *The BLAST Query Language for Software Verification*, keynote lecture, Static Analysis Symposium (SAS), Verona, Italy, August 2004.
91. *Embedded Software: Better Models, Better Code*, keynote lecture, Conference on Applications and Theory of Petri Nets (ATPN), Bologna, Italy, June 2004.
92. *Rich Interfaces for Software Modules*, keynote lecture, European Conference on Object-Oriented Programming (ECOOP), Oslo, Norway, June 2004.
93. *Game Models for Component Interaction*, keynote lecture, Workshop on Complexity, Finite Model Theory, and Databases, Lausanne, Switzerland, May 2004.
94. *Model Checking: From Hardware to Software*, keynote lecture, Asian Symposium on Programming Languages and Systems (APLAS), Beijing, China, November 2003.
95. *The Fixed Logical Execution Time Assumption*, Workshop on Software Engineering for Embedded Systems: From Requirements to Implementation, Chicago, Illinois, September 2003.
96. *Automata for Specifying Component Interfaces*, keynote lecture, Conference on Implementation and Application of Automata (CIAA), Santa Barbara, California, July 2003.
97. *Extreme Model Checking*, Symposium in Honor of the 64th Birthday of Zohar Manna, Taormina, Italy, June 2003.
98. *Hybrid Systems: Verification and Control*, invited tutorial, Conference on Computer-Aided Verification (CAV), Copenhagen, Denmark, July 2002.
99. *From Models to Code: The Missing Link in Embedded Software*, keynote lecture, Conference on Hybrid Systems: Computation and Control (HSCC), Stanford, California, March 2002.
100. *GIOTTO: A Time-Triggered Language for Embedded Programming*, ACM Conference on Embedded Software (EMSOFT), Tahoe City, California, October 2001.
101. *Decomposing Model-checking Tasks using the Assume-guarantee Paradigm*, invited tutorial, IEEE-ACM International Conference on Computer-Aided Design (ICCAD), San Jose, California, November 2000.
102. *The FRESKO Project: Formal Real-Time Software Components*, keynote lecture, Workshop on Models for Time-Critical Systems (MTCS), State College, Pennsylvania, August 2000.
103. *MASACCIO: A Formal Model for Embedded Components*, IFIP Conference on Theoretical Computer Science (TCS), Sendai, Japan, August 2000.
104. *A Classification of Symbolic Transition Systems*, keynote lecture, Symposium on Theoretical Aspects of Computer Science (STACS), Lille, France, February 2000.
105. *A Symbolic Approach to Hybrid Dynamical Systems*, keynote lecture, IEEE Symposium on Computational Intelligence in Robotics and Automation (CIRA), Monterey, California, November 1999.
106. *Logics for Reasoning about Real-Time Computation*, International Congress of Logic, Methodology, and Philosophy of Science, Cracow, Poland, August 1999.
107. *Exploiting Design Structure in Model Checking*, Conference on the Mathematical Foundations of Programming Semantics (MFPS), New Orleans, Louisiana, April 1999.

108. *Hybrid Games*, keynote lecture, AAAI Spring Symposium Series on Artificial Intelligence, Stanford, California, March 1999.
109. *It's About Time: Real-Time Logics Reviewed*, keynote lecture, Conference on Concurrency Theory (CONCUR), Nice, France, September 1998.
110. *Computer-Aided Verification of Embedded Systems*, IFIP World Computer Congress, Vienna, Austria, August 1998.
111. *Model Checking Game Properties of Multi-agent Systems*, keynote lecture, International Colloquium on Automata, Languages, and Programming (ICALP), Aalborg, Denmark, July 1998.
112. *Alternating-Time Temporal Logic*, Symposium on Compositionality, Bad Malente-Gremsmühlen, Germany, September 1997.
113. *Some Lessons from the HYTECH Experience*, keynote lecture, Workshop on Hybrid and Real-Time Systems (HART), Grenoble, France, March 1997.
114. *A Brief History of Real Time*, keynote lecture, Workshop on the Verification of Infinite-State Systems (INFINITY), Pisa, Italy, August 1996.
115. *The Theory of Hybrid Automata*, invited tutorial, IEEE Symposium on Logic in Computer Science (LICS), New Brunswick, New Jersey, July 1996.
116. *HYTECH in Control Applications*, DIMACS Workshop on Controllers for Manufacturing and Automation: Specification, Synthesis, and Verification Issues, New Brunswick, New Jersey, May 1996.
117. *Algorithmic Analysis of Hybrid Systems*, SIAM Conference on Control and its Applications, St. Louis, Missouri, April 1995.
118. *Model-Checking and Abstract-Interpretation Strategies for Hybrid Systems*, Workshop on Hybrid Systems and Autonomous Control, Ithaca, New York, October 1994.
119. *Model-Checking Strategies for Linear Hybrid Systems*, Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems (IEA/AIE), Austin, Texas, May 1994.
120. *Real-Time System = Discrete System + Clock Variables*, AMAST Workshop on Real-Time Systems (ARTS), Iowa City, Iowa, November 1993.
121. *Real-Time Formalisms for Verification*, invited tutorial, Conference on Computer-Aided Verification (CAV), Elounda, Greece, June 1993.
122. *Sooner Is Safer Than Later*, Summer Conference on General Topology and Applications, New York, New York, June 1992.
123. *Timed Transition Systems*, REX Workshop on Real-Time Systems, Mook, The Netherlands, June 1991.

Distinguished Speaker Series

1. *Software needs Watchdogs*, Distributed, Embedded, and Intelligent Systems Lecture, Aalborg University, Aalborg, Denmark, November 2023.
2. *Software needs Watchdogs*, Engineering Distinguished Lecture, University of New South Wales, Sydney, Australia, March 2023.
3. *Software needs Watchdogs*, School of Computing Distinguished Lecture, Australian National University, Canberra, Australia, March 2023.

4. *Software needs Watchdogs*, Computer Science Colloquium, The University of Sydney, Sydney, Australia, March 2023.
5. *Software needs Watchdogs*, Computer Science Colloquium, EPFL, Lausanne, Switzerland, January 2023.
6. *Software needs Watchdogs*, Computer Science Colloquium, IIT Bombay, Mumbai, India, November 2022.
7. *The Quest for Average-Response Time*, Computer Science Colloquium, University of Wisconsin, Madison, Wisconsin, November 2018.
8. *Computer Science versus Computational Science*, Lectio Magistralis, Gran Sasso Science Institute, L'Aquila, Italy, May 2018.
9. *Reactive Systems: A Powerful Paradigm for Modeling and Analysis from Engineering to Biology*, Michael Rabin Lecture, Institute for Advanced Studies, Hebrew University, Jerusalem, Israel, December 2017.
10. *Reactive Systems: A Powerful Paradigm for Modeling and Analysis from Engineering to Biology*, Robin Milner Award Lecture, Royal Society, London, United Kingdom, November 2015.
11. *Reactive Systems: A Powerful Paradigm for Modeling and Analysis from Engineering to Biology*, Computer Science Colloquium, Masaryk University, Brno, Czech Republic, October 2015.
12. *From Boolean to Quantitative Methods in Formal Verification*, Computer Science Colloquium, Tel Aviv University, Tel Aviv, Israel, November 2014.
13. *Computer Science versus Computational Science*, Schroedinger Lecture, Trinity College, Dublin, Ireland, October 2013.
14. *Quantitative Reactive Modeling*, DI-FCT-UNL Distinguished Lecture Series, Universidade Nova de Lisboa, Lisbon, Portugal, October 2013.
15. *Quantitative Reactive Modeling*, Journées d'Informatique Fondamentale de Paris Diderot, Paris, France, April 2013.
16. *From Boolean to Quantitative Theories of Software*, Tsinghua Software Day, Tsinghua University, Beijing, China, April 2011.
17. *The Quantitative Agenda in Software Analysis*, Computer Science Colloquium, Masaryk University, Brno, Czech Republic, November 2010.
18. *Interface-based Design*, Computer Science Colloquium, Technical University Vienna, Austria, March 2009.
19. *Grand Challenges for Real-Time Systems*, Computer Science Colloquium, University of York, United Kingdom, November 2008.
20. *Rich Interfaces for Reactive, Real-Time, and Embedded Components*, Computer Science Colloquium, Technical University Eindhoven, The Netherlands, March 2007.
21. *Reliable Systems Engineering*, Inaugural Lecture, EPFL, Switzerland, December 2006.
22. *Reliable Systems Engineering*, Strachey Lecture in Computing Science, Oxford University, United Kingdom, October 2006.
23. *Games, Time, and Probability: Models and Algorithms for System Design and Analysis*, Wolfgang Pauli Colloquium, Technical University Vienna, Austria, May 2005.

24. *The Symbolic Approach to Hybrid Systems*, Hybrid Systems Lecture Series, Ecole Polytechnique, Orsay, France, April 2005.
25. *Embedded Software: Better Models, Better Code*, Jon Postel Distinguished Lecture, University of California, Los Angeles, February 2004.
26. *The Symbolic Approach to Hybrid Systems*, Mathematics and Computer Science Colloquium, Santa Clara University, Santa Clara, California, January 2004.
27. *From Models to Code: The Missing Link in Embedded Software*, Computer Science Colloquium, Purdue University, West Lafayette, Indiana, April 2003.
28. *From Models to Code: The Missing Link in Embedded Software*, Computer Science Colloquium, University of Delaware, Newark, Delaware, April 2003.
29. *The Symbolic Approach to Hybrid Systems*, Systems Engineering Colloquium, University of Maryland, College Park, Maryland, April 2003.
30. *Games, Time, and Probability: Models and Algorithms for System Design and Analysis*, Computer Science Colloquium, EPF Lausanne, Switzerland, February 2003.
31. *What is an Interface?*, Computer Science Colloquium, ETH Zürich, Switzerland, June 2002.
32. *From Models to Code: The Missing Link in Embedded Software*, Computer Science Colloquium, Technical University Munich, Germany, May 2002.
33. *Design and Verification of Embedded Systems*, Cray Distinguished Lecture, University of Minnesota, Minneapolis, Minnesota, September 2001.
34. *A Symbolic Approach to Hybrid Dynamical Systems*, Computer Science Colloquium, University of Brussels, Belgium, February 2000.
35. *A Symbolic Approach to Hybrid Dynamical Systems*, Computer Science Colloquium, University of Pennsylvania, Philadelphia, Pennsylvania, October 1999.
36. *Computer-Aided Verification of Embedded Systems*, Computer Science Colloquium, Max-Planck-Institut für Informatik, Saarbrücken, Germany, March 1997.
37. *Computer-Aided Verification of Embedded Systems*, Computer Science Colloquium, University of British Columbia, Vancouver, Canada, January 1997.
38. *A Brief History of Real Time*, Electrical Engineering and Computer Sciences Colloquium, University of California, Berkeley, California, April 1996.
39. *Hybrid Automata*, Computer Science Colloquium, University of Delaware, Newark, Delaware, April 1993.
40. *Hybrid Automata*, Computer Science Colloquium, Cornell University, Ithaca, New York, October 1992.

Invited Lectures at Winter/Summer Schools

1. *Reactive Systems: A Powerful Paradigm for Modeling and Analysis from Engineering to Biology*, Summer School on Formal Techniques, Menlo College, Menlo Park, California, May 2023.
2. *Games Everywhere*, Dagstuhl Seminar on Non-zero-sum Games and Control, Dagstuhl, Germany, February 2015.
3. *The Symbolic Approach to Hybrid Systems*, ROCKS Autumn School on Rigorous Dependability Analysis for Stochastic Systems, Neustift, Italy, October 2012.

4. *Model Checking*, RISE Winter School on Verification, Vienna, Austria, February 2012.
5. *Timed and Hybrid Automata*, Summer School on Formal Methods for the Design of Computer, Communication, and Software Systems: Quantitative Aspects of Programming Languages, Bertinoro, Italy, June 2010.
6. *Games in System Design and Verification*, Summer School for Computer Science Researchers on Formal Methods: Theory and Practice, Lipari, Italy, July 2005.
7. *Interface-based Design*, lecture series, NATO Summer School on Engineering Theories for Software-intensive Systems, Marktoberdorf, Germany, August 2004.
8. *Interface Theories for Component-based Design and Verification*, University of Washington and Microsoft Research Summer Institute on Specifying and Checking Properties of Software, Leavenworth, Washington, August 2001.
9. *Rectangular Hybrid Automata*, lecture series, NATO-ASI Summer School on the Verification of Digital and Hybrid Systems, Antalya, Turkey, June 1997.
10. *Models and Logics for Timed and Hybrid Systems: An Introduction*, Winter School on Methods and Tools for the Verification of Infinite-State Systems, Grenoble, France, March 1997.
11. *Automatic Verification of Real-Time and Hybrid Systems*, lecture series, BRICS Autumn School on Verification, Aarhus, Denmark, October 1996.

Other Invited Lectures

1. *Der neue Forschungsrat (FORWIT): Mit einem starken FTI-Standort in die Zukunft*, IV-Ausschuss für Forschung, Technologie und Innovation, Vienna, Austria, June 2023.
2. *Two Successes, Two Failures, and Two Predictions*, Workshop on Principles of Systems Design, Paris, France, July 2023.
3. *AI Safety: Neural Networks meet Formal Methods*, University of California, Berkeley, California, May 2023; Stanford University, California, May 2023.
4. *Between Determinism and Nondeterminism*, “On the Not So Unusual Effectiveness of Logic,” Workshop in Honor of Moshe Y. Vardi, Haifa, Israel, July 2022 (virtual).
5. *Software needs Watchdogs*, Workshop “Vistas in Verified Software,” Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, July 2022.
6. *The Research Institute as Start-up*, Class III meeting, Annual Meeting of the National Academy of Sciences, Washington, DC, May 2022.
7. *Bidding Games on Graphs*, “Recent Advances of Quantitative Models in Computer Science,” Colloquium in Honor of the 80th Birthday of Werner Kuich, Thessaloniki, Greece, June 2021 (virtual).
8. *Quantitative and Approximate Monitoring*, Workshop “Verified Software: From Theory to Practice,” Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, May 2021 (virtual).
9. *Grundlagenforschung: Warum?*, Praevenire Gesundheitsforum, Seitenstetten, Austria, May 2021 (virtual).
10. *Computer Science: Where Logic Meets Dynamics*, Conference “Kurt Goedel’s Legacy: Does Future lie in the Past?”, Vienna, Austria, July 2019.

11. *10 Years of IST Austria*, 10-Year Campus Anniversary of ISTA, Klosterneuburg, Austria, June 2019; Europe-Korea Conference on Science and Technology (EKC), Vienna, Austria, July 2019; University of Luxembourg, September 2019; Technical University of Graz, Austria, January 2020.
12. *Behavioral Software Metrics*, VOeSI Software Day, Vienna, Austria, October 2018.
13. *Temporal Logics for Multi-Agent Systems*, ETH Workshop on Vistas in Control, Zurich, Switzerland, September 2018.
14. *Reactive Systems: A Powerful Paradigm for Representing and Analyzing Complex Dynamic Interactions*, Austrian Computer Science Day, Salzburg, Austria, June 2018.
15. *Promises and Challenges in Reactive Modeling: A Personal Perspective*, Reykjavik University, Reykjavik, Iceland, June 2018.
16. *An Introduction to the Institute of Science and Technology Austria*, Gran Sasso Science Institute, L'Aquila, Italy, May 2018; Human Technopole, Milan, Italy, May 2022.
17. *Can we Computerize a Cell?*, Faculty Retreat of ISTA, Tulln, Austria, November 2017.
18. *Reactive Systems: A Powerful Paradigm for Modeling and Analysis from Engineering to Biology*, Faculty of Computer Science, Higher School of Economics, Moscow, Russia, March 2017.
19. *The Quest for Average-Response Time*, Software Seminar, Stanford University, California, September 2016; DREAMS Seminar, University of California, Berkeley, California, September 2016; Faculty of Computer Engineering, Sharif University, Tehran, Iran, May 2017.
20. *From Boolean to Quantitative Methods in Formal Verification*, Microsoft Research, Cambridge, United Kingdom, November 2015.
21. *How to Build a Living Cell in Software (Or: Can We Computerize a Bacterium?)*, Workshop on Dynamic Biological Modeling, Simons Institute for the Theory of Computing, Berkeley, California, August 2015.
22. *From Checking Program Correctness To Measuring Program Fitness*, Colloquium in Honor of Martin Abadi, Cachan, France, June 2015.
23. *Modern Concurrency Paradigms*, FWF Rigorous Systems Engineering (RiSE) Review, Vienna, Austria, October 2014.
24. *Design, Verification, and Synthesis of Concurrent and Embedded Systems*, Bosch Day at ISTA, Klosterneuburg, Austria, September 2014.
25. *Computer-Aided Verification Technology for Biology*, DREAMS Seminar, University of California, Berkeley, California, July 2014.
26. *From Boolean to Quantitative Program Correctness*, Computer Science Seminar, MIT, Cambridge, Massachusetts, June 2014.
27. *Exzellenz in Österreich: IST Austria*, Tagung des österreichischen Wissenschaftsrates, Vienna, Austria, November 2013.
28. *From Boolean to Quantitative Theories of Software*, CREST Workshop on Multiplicity Computing, London, United Kingdom, March 2012.
29. *Independent Implementability of Viewpoints*, Monterey Workshop on Large-Scale Complex IT Systems, Oxford, United Kingdom, March 2012.

30. *Formal Verification of Markovian Population Models*, Opening Symposium of the Vienna Center for Logic and Algorithms, Vienna, Austria, January 2012.
31. *Programming with Logical Execution Times*, Research Colloquium on Time in Cyber-Physical Systems, Vienna, Austria, September 2011.
32. *Quantitative Reactive Modeling*, ERC Workshop, Venice, Italy, September 2011; Verimag, Grenoble, France, January 2012; NSF-FWF Workshop on Computational Modeling and Analysis of Complex Systems and Rigorous Systems Engineering (CMACS-RISE), Washington, DC, September 2012; NETYS Workshop on Formal and Informal Methods for Correctness and Performance, Marrakech, Morocco, May 2013.
33. *Welche Rahmenbedingungen braucht Spitzenforschung?*, Strategietreffen des ÖVP Parlamentsklubs, Vienna, Austria, June 2011.
34. *The Quantitative Agenda in System Analysis*, SRI International, Menlo Park, California, July 2010.
35. *Executable Biology*, NSF Workshop on Shared Organizing Principles in the Computing and Biological Sciences, Arlington, Virginia, May 2010.
36. *Reliable Software—An Oxymoron?*, Rotary Club Wien-West, Vienna, Austria, June 2010.
37. *Puzzle Solving with a Computer*, lecture for kids, Open Campus Celebration of ISTA, Klosterneuburg, Austria, May 2010.
38. *IST Austria: Past, Present, Future*, Netzwerktreffen der Österreichischen Industriellenvereinigung, Klosterneuburg, Austria, May 2010; University of Linz, Austria, November 2010; Bundesvorstand der Österreichischen Industriellenvereinigung, Vienna, Austria, January 2011; Bundesministerium für Wissenschaft und Forschung, Vienna, Austria, February 2011; Technical University of Graz, Austria, June 2011; University of Salzburg, Austria, June 2012; Austrian Science Talk, Washington, DC, September 2012; University of Innsbruck, Austria, October 2012; Oxford University, Oxford, United Kingdom, January 2016.
39. *Rigorous Systems Engineering*, Media Workshop, Vienna, Austria, April 2010.
40. *Computer Science versus Computational Science*, HFSP Frontiers Meeting, Strasbourg, France, March 2010; HFSP Alumni Meeting, Vienna, Austria, September 2011.
41. *Towards a Quantitative Evaluation of Systems*, Embedded Systems Research Strategies Policy Conference, Vienna, Austria, March 2010.
42. *From Boolean to Quantitative System Specifications*, CHES Seminar, University of California, Berkeley, California, August 2009.
43. *Theories for Encompassing Heterogeneity*, COMBEST Review, Brussels, Belgium, January 2009.
44. *Quantitative Generalizations of Languages*, AutoMathA Workshop, Lausanne, Switzerland, May 2008.
45. *Designing Predictable and Robust Systems*, NSF Workshop: From Embedded Systems to Cyber-Physical Systems, St. Louis, Missouri, April 2008.
46. *Trends and Challenges in Embedded Systems and Computing*, European Commission, Brussels, Belgium, December 2007.
47. *Nonzero-sum Games in Verification and Synthesis*, GAMES Workshop, Lausanne, Switzerland, September 2007.

48. *Value Iteration Fixpoints for Verification and Control*, CHES Review, Berkeley, California, February 2007.
49. *On Component and Interface Models*, ARTIST Workshop on Models of Computation and Communication, Zürich, Switzerland, November 2006.
50. *Software Verification*, Unicible, Lausanne, Switzerland, April 2006.
51. *The BLAST Model Checker*, Workshop on Software Verification, Hyderabad, India, December 2005.
52. *Model Checking: From Graphs to Games*, Alpine Verification Meeting (AVM), Lausanne, Switzerland, October 2005.
53. *Games in System Design and Verification*, Microsoft Research, Redmond, Washington, August 2005.
54. *Interfaces for Compositional Real-Time Code*, ARTIST PI Meeting, Rennes, France, June 2005.
55. *Model Checking: From Hardware to Software*, IC Research Day, EPFL, Lausanne, Switzerland, June 2005.
56. *Discounting the Future in Systems Theory*, CHES Seminar, University of California, Berkeley, California, March 2005.
57. *TRESOR: Trust in Reliable Software Research*, IBM Research Center, Zürich, Switzerland, September 2004.
58. *The Holy Grail of Computer Science: Automatic Program Verification*, Federal Verification Center, University of Brussels, Belgium, May 2004; Research Institute for Symbolic Computation, University of Linz, Austria, August 2004; Ecole Normale Supérieure, Cachan, France, April 2005.
59. *Hybrid Systems Theory*, CHES Review, Berkeley, California, December 2003; CHES Review, Berkeley, California, May 2004; CHES Review, Berkeley, California, November 2004; CHES Review, Berkeley, California, May 2005; CHES Review, Berkeley, California, October 2006.
60. *Embedded Software: Better Models, Better Code*, CHES Workshop, Berkeley, California, September 2003; ARTIST Collaboration Day, Philadelphia, Pennsylvania, October 2003; Industrial Liaison Program, University of California, Berkeley, California, February 2004; Robotics Seminar, EPFL, Lausanne, Switzerland, November 2004; ARTIST PI Meeting, Paris, France, January 2005.
61. *Interfaces for Resource-constrained Components*, GSRC Review, Santa Clara, California, September 2003.
62. *Thread-modular Abstraction Refinement*, Fujitsu Labs, Mountain View, California, June 2003.
63. *An Update on the FRESKO Project*, GSRC PI Meeting, Oakland, California, March 2003.
64. *Software Quality Research at Berkeley*, Microsoft CITRIS Day, Berkeley, California, March 2003.
65. *Games, Time, and Probability: Models and Algorithms for System Design and Analysis*, ETH Zürich, Switzerland, February 2003.
66. *Automatic Software Verification: Code Checking, not Model Checking*, NASA PI Meeting, Mountain View, California, February 2002.
67. *Interface-based Design*, GSRC PI Meeting, Berkeley, California, December 2002.
68. *Hybrid Systems: From Models to Code*, CHES Kickoff Meeting, Berkeley, California, November 2002; DARPA Software-Enabled Control PI Meeting (SEC), Atlanta, Georgia, November 2002.

69. *From Models to Code: The Missing Link in Embedded Software*, GM CHES Day, Berkeley, California, October 2003.
70. *Model-based Design of Embedded Systems*, CHES Workshop, Berkeley, California, September 2002.
71. *AUTOTIMESAFE: Predictable, Portable Real-Time Software*, DaimlerChrysler, Esslingen, Germany, May 2002.
72. *Interface Compatibility Checking*, SRC Formal Verification Review, Salt Lake City, Utah, March 2002.
73. *CHES: Center for Hybrid and Embedded Software Systems*, Industrial Advisory Board Meeting for UC Berkeley EECS, Palo Alto, California, October 2001; BMW CHES Day, Berkeley, California, January 2002; DaimlerChrysler, Stuttgart, Germany, July 2002; National Technology Agency of Finland CHES Day, Berkeley, California, September 2002; EECS Faculty Lunch, Berkeley, California, October 2002; CHES Industrial Day, Berkeley, California, May 2003.
74. *Embedded Control Systems Development with GIOTTO*, Audi, Ingolstadt, Germany, September 2001; Honeywell Technology Center, Minneapolis, Minnesota, September 2001.
75. *What is an Interface?*, GSRC Review, Santa Clara, California, September 2001; DARPA Program Composition for Embedded Systems PI Meeting, Mesa, Arizona, October 2001; Software Engineering Seminar, Technical University Munich, Germany, May 2002.
76. *Interface Theories for Component-based Design*, NSF Open Source Quality Retreat, Santa Cruz, California, May 2001; Verification Seminar, Stanford University, Stanford, California, August 2001.
77. *The Embedded Virtual Machine*, DARPA Software-Enabled Control PI Meeting (SEC), Annapolis, Maryland, May 2001.
78. *Model Checking of Infinite-State Systems*, Microsoft Research, Redmond, Washington, May 2001.
79. *MASACCIO: A Formal Model for Embedded Components*, GSRC PI Meeting, Pittsburgh, Pennsylvania, March 2001.
80. *The Control of Synchronous Systems*, SRC Formal Verification Review, Pittsburgh, Pennsylvania, March 2001.
81. *Decomposing Model-checking Tasks using the Assume-guarantee Paradigm*, IFIP Working Group 2.3 Meeting, Santa Cruz, California, January 2001.
82. *GIOTTO: A Time-Triggered Language for Embedded Programming*, DARPA Software-Enabled Control PI Meeting (SEC), Durango, Colorado, October 2000; Compaq Systems Research Center, Palo Alto, California, April 2001; Wind River Systems, Alameda, California, April 2001.
83. *Formal Software Verification*, GSRC PI Meeting, Stanford, California, September 2000.
84. *The FRESCO Project: Formal Real-Time Software Components*, GSRC PI Meeting, Los Angeles, California, June 2000; DARPA Software-Enabled Control PI Meeting (SEC), Albuquerque, New Mexico, June 2000.
85. *Fault-Tolerant Real-Time Networks*, MURI Kickoff Meeting, Berkeley, California, May 2000.
86. *From Hybrid Models to Time-Triggered Implementations*, DARPA Workshop on Software-Enabled Control (SEC), St. Louis, Missouri, April 2000.
87. *Early Detection of Counterexamples in Model Checking*, SRC Formal Verification Review, Austin, Texas, March 2000.

88. *Games in Formal Verification*, DARPA Formal Methods PI Meeting, Portland, Oregon, March 2000.
89. *Formal Models and Interoperability*, GSRC Review, San Jose, California, December 1999; DARPA Workshop on High Confidence Aviation Systems, Alexandria, Virginia, June 2000.
90. *Assume-Guarantee Refinement Between Different Time Scales*, Intel Corporation, Santa Clara, California, November 1999.
91. *Interval-numerical Methods for Hybrid-systems Analysis*, MURI Review, Berkeley, California, November 1999.
92. *Exploiting Design Structure in Model Checking*, DARPA Formal Methods PI Meeting, Alexandria, Virginia, October 1999; Synopsis Corporation, Mountain View, California, June 2000.
93. *A Research Agenda for Component Software Technology*, DARPA Workshop on Embedded Components, Berkeley, California, September 1999.
94. *Reactive and Hybrid Systems*, Biennial Scientific Review, Max-Planck Institute for Computer Science, Saarbrücken, Germany, June 1999.
95. *Formal Verification vs. Formalizable Design*, DARPA Workshop on Software Behavior Description, St. Thomas, U.S. Virgin Islands, December 1998.
96. *A Tutorial Introduction to Hybrid Systems Modeling and Verification*, Hybrid Systems Seminar, University of California, Berkeley, California, September 1998.
97. *Model Checking Game Properties of Multi-agent Systems*, Verification Seminar, Stanford University, Stanford, California, June 1998; MURI Review, Berkeley, California, November 1998.
98. *MOCHA: Modularity in Model Checking*, DARPA Formal Methods PI Meeting, Seattle, Washington, June 1998.
99. *Logics for Reasoning about Time*, Logic Colloquium, University of California, Berkeley, California, April 1998.
100. *You Assume, We Guarantee: Methodology and Case Studies*, SRC Formal Verification Review, Austin, Texas, March 1998; DARPA Formal Methods PI Meeting, Stanford, California, October 1998.
101. *Software-based Control of Multi-agent Systems*, DARPA Workshop on Software-Enabled Control (SEC), Atlanta, Georgia, December 1997.
102. *Concurrency Modeling: The State View*, Design Seminar, University of California, Berkeley, California, November 1997.
103. *Some Lessons from the HYTECH Experience*, AFOSR Software and Systems PI Meeting, Rome, New York, September 1997.
104. *Two Approaches to the Nonzeno Problem in Hybrid Control*, Cadence European Labs, Rome, Italy, July 1997; NASA Ames Research Center, Mountain View, California, August 1997; MURI Review, Berkeley, California, October 1997.
105. *Formal Verification of Embedded Systems*, Industrial Liaison Program, University of California, Berkeley, California, March 1997; Scientific Systems, Woburn, Massachusetts, May 2001.
106. *Efficient Verification of Heterogeneous Systems*, SRC Formal Verification Review, Pittsburgh, Pennsylvania, March 1997.
107. *Efficient Formal Verification using Transition Hierarchies*, Intel Corporation, Hillsboro, Oregon, January 1997.

108. *A Brief History of Real Time*, University of Oldenburg, Oldenburg, Germany, October 1996; SRI International, Menlo Park, California, November 1996.
109. *Design and Verification of Hybrid Systems*, MURI Kickoff Meeting, Berkeley, California, July 1996; DARPA Workshop on Complex Systems, Portland, Oregon, August 1997.
110. *Reactive Modules*, Verification Seminar, Stanford University, Stanford, California, May 1996.
111. *New Looks at Old Concepts: Local Liveness and Finitary Fairness*, CAD Seminar, University of California, Berkeley, California, March 1996.
112. *A Unifying Framework for Computer-Aided Verification*, SRC Formal Verification Review, Berkeley, California, March 1996.
113. *Algorithmic Analysis of Real-Time and Hybrid Systems*, DARPA Formal Methods PI Meeting, San Diego, California, January 1996; Industrial Liaison Program, University of California, Berkeley, California, March 1996; ONR Workshop on Automated Formal Methods, Oxford, United Kingdom, June 1996; University of Passau, Passau, Germany, September 1996.
114. *A Reactive-Module Approach to Formal Design, Verification, and Synthesis*, SRC Review, Berkeley, California, October 1995.
115. *Computer-Aided Verification of Infinite-State Systems*, University of California, Berkeley, California, March 1995; Stanford University, Stanford, California, March 1995; AT&T-SUNY Specification and Verification Workshop, Stony Brook, New York, November 1995; Synopsis Corporation, Mountain View, California, June 1996.
116. *Model-Checking and Abstract-Interpretation Strategies for Hybrid Systems*, AFOSR Software and Systems PI Meeting, Washington, DC, September 1994; Cornell University, Ithaca, New York, October 1994; Stanford University, Stanford, California, January 1995.
117. *Algorithmic Analysis of Hybrid Systems*, Stanford University, Stanford, California, August 1994.
118. *A Determinizable Class of Timed Automata*, University of California, Berkeley, California, March 1994.
119. *Real-Time System = Discrete System + Clock Variables*, North-American Jumelage, SRI International, Menlo Park, California, October 1993.
120. *Computing Accumulated Delays in Real-Time Systems*, Stanford University, Stanford, California, August 1993.
121. *Hybrid Automata*, Mathematical Sciences Institute, Ithaca, New York, February 1993; Stanford University, Stanford, California, March 1993; University of California, Berkeley, California, March 1993; AT&T Bell Laboratories, Murray Hill, New Jersey, May 1993.
122. *Some Recent Progress and Some Open Problems in Timed Model Checking*, ONR Workshop on Formal Methods in Software Engineering, Monterey, California, May 1992.
123. *Symbolic Model Checking for Real-Time Systems*, Cornell University, Ithaca, New York, April 1992; Carnegie-Mellon University, Pittsburgh, Pennsylvania, April 1992; AT&T Bell Laboratories, Murray Hill, New Jersey, May 1992; Stanford University, Stanford, California, August 1993.
124. *Logics and Models of Real Time*, ORA Corporation, Ithaca, New York, February 1992.
125. *Back to the Future*, Fourier University, Grenoble, France, December 1991; Cornell University, Ithaca, New York, April 1992; Research Institute for Symbolic Computation, Hagenberg, Austria, July 1992; Stanford University, Stanford, California, March 1993.

126. *Sooner Is Safer Than Later*, Fourier University, Grenoble, France, November 1991; Cornell University, Ithaca, New York, February 1992; Technical University Eindhoven, The Netherlands, November 1991.
127. *The Temporal Specification and Verification of Real-Time Systems*, Ph.D. Thesis Defense, Stanford University, Stanford, California, June 1991; Berkeley Workshop on Temporal and Real-Time Specification, International Computer Science Institute, Berkeley, California, August 1990.
128. *When Eventually Isn't Good Enough*, Stanford Computer Forum, Stanford University, Stanford, California, February 1991; University of California, Santa Barbara, California, February 1991; Rice University, Houston, Texas, February 1991; University of Toronto, Toronto, Canada, February 1991; AT&T Bell Laboratories, Murray Hill, New Jersey, February 1991; Cornell University, Ithaca, New York, February 1991; SRI International, Menlo Park, California, March 1991; University of British Columbia, Vancouver, Canada, March 1991; University of California, San Diego, California, March 1991; Columbia University, New York, New York, March 1991; State University of New York, Stony Brook, New York, March 1991; Bell Communications Research, Morristown, New Jersey, March 1991; Xerox Palo Alto Research Center, Palo Alto, California, April 1991.
129. *Temporal Logic and Real Time*, SRI International, Menlo Park, California, August 1990; Kepler University, Linz, Austria, October 1990; The Technion, Haifa, Israel, October 1990.
130. *A Temporal Logic for Real Time*, Stanford Computer Forum, Stanford University, Stanford, California, February 1990.
131. *A Really Temporal Logic*, Stanford University, Stanford, California, October 1989; IBM T.J. Watson Research Center, Yorktown Heights, New York, December 1989.

Panels

1. Moderator, *Communicating Science: How To Explain its Power and Limits*, Science-Communication Day of ISTA, Klosterneuburg, Austria, September 2022.
2. Moderator, *Science and Society: A Rewarding Partnership?*, 10-Year Campus Anniversary of ISTA, Klosterneuburg, Austria, June 2019.
3. Panelist, *What's beyond the Horizon for Austria's Scientists and Researchers?*, Europatagung, Vienna, Austria, December 2018.
4. Panelist, *The Role of Competitive Research Funding in Science*, EU Presidency Symposium, Klosterneuburg, Austria, October 2018.
5. Panelist, *What Good is Determinism anyway?*, Symposium in Honor of the 60th Birthday of Edward A. Lee, Berkeley, California, October 2017.
6. Panelist, *Grundlagenforschung oder industrielle Innovation?*, Der Weisse Salon, Vienna, Austria, September 2017.
7. Moderator, *On the Way to the Top: What Makes a Research Institution Excellent?*, 10-Year Founding Celebration of ISTA, Klosterneuburg, Austria, June 2016.
8. Panelist, *Global Research*, club research, Vienna, Austria, May 2016.
9. Panelist, *Österreich sucht den Superwissenschaftler*, Science Talk, Veranstaltung des Bundesministeriums für Wissenschaft, Forschung, und Wirtschaft, Vienna, Austria, May 2016.
10. Panelist, *Career Opportunities in Austria*, Austrian Research and Innovation Talk, San Francisco, California, November 2015.

11. Panelist, *Stiften für die Wissenschaft*, Fundraising Verband Austria, Vienna, Austria, January 2014.
12. Panelist, *Forschung in der Schweiz und in Österreich: Ein Systemvergleich*, club research, Vienna, Austria, September 2013.
13. Moderator, *Academic and Industrial Research: Partners in Innovation*, Science-Industry Talk of ISTA, Klosterneuburg, Austria, June 2013.
14. Panelist, *Innovationsland Österreich*, Veranstaltung von Unternehmen Österreich 2025, Klosterneuburg, Austria, March 2013.
15. Panelist, *Österreichische Spitzenforschung durch EU-Gelder fördern: ERC Grants*, Veranstaltung der Universität Wien, Vienna, Austria, May 2012.
16. Panelist, *Welchen Mehrwert hat HORIZON 2020 für die österreichische Wissenschaft und Wirtschaft?*, Veranstaltung des Bundesministeriums für Wissenschaft und Forschung, Vienna, Austria, April 2012.
17. Panelist, *Innovation durch Exzellenz*, Veranstaltung der Österreichischen Industriellenvereinigung, Vienna, Austria, June 2011.
18. Panelist, *Wien als internationale Universitäts- und Forschungsstadt*, Veranstaltung der Stadt Wien, Vienna, Austria, June 2011.
19. Panelist, *Kooperation und/oder Wettbewerb*, Tagung des Österreichischen Wissenschaftsrates, Vienna, Austria, November 2010.
20. Panelist, *Welche Forschung braucht Österreich?*, Science-Industry Talk of ISTA, Klosterneuburg, Austria, June 2010.
21. Panelist, *Wissenschaft und Forschung: Helfer oder Opfer der Krise?*, European Forum Alpbach, Vienna, Austria, December 2009.
22. Moderator, *Institutes of Basic Research: Is There One Formula for Success?*, Campus Opening of ISTA, Klosterneuburg, Austria, June 2009.
23. Moderator, *Embedded Software: A New Research Community?*, ACM Conference on Embedded Software (EMSOFT), Tahoe City, California, October 2001.
24. Panelist, *Hybrid Systems*, NSF-DARPA Workshop on Future Directions in Hybrid and Embedded Systems, Alexandria, Virginia, October 2000.
25. Panelist, *Formal Methods*, DARPA Workshop on High Confidence Aviation Systems, Alexandria, Virginia, June 2000.
26. Panelist, *Future Directions of EDA Research at Berkeley*, Electrical Engineering and Computer Sciences Colloquium, University of California, Berkeley, California, October 1997.
27. Panelist, *Future Trends in Industrial Computer-Aided Verification*, Conference on Computer-Aided Verification (CAV), Haifa, Israel, June 1997.
28. Moderator, *Hybrid Systems Research: Achievements, Problems, and Goals*, DIMACS Workshop on Verification and Control of Hybrid Systems, New Brunswick, New Jersey, October 1995.

University Activities

Administration

President, *Institute of Science and Technology Austria* (ISTA), 2009–22.

Director, *Doctoral Program in Computer and Communication Sciences* (EDIC), EPFL, 2007–09.

Co-director (jointly with Edward A. Lee, Alberto Sangiovanni-Vincentelli, Shankar S. Sastry), *Center for Hybrid and Embedded Software Systems* (CHESS), University of California, Berkeley, 2002–09.

Instruction

Lower-division undergraduate courses:

Theoretical Computer Science, EPFL, Spring 2008, Spring 2009.

Advanced Theoretical Computer Science, EPFL, Spring 2008.

Theoretical Computer Science III, EPFL, Fall 2005, Fall 2006.

Structure and Interpretation of Signals and Systems, UC Berkeley (EECS 20), Spring 2001.

Discrete Mathematics, Cornell (CS 280), Fall 1992, Fall 1993, Fall 1994.

Upper-division undergraduate courses:

Efficient Algorithms and Intractable Problems, UC Berkeley (CS 170), Fall 2002.

Computability and Complexity, UC Berkeley (CS 172), Spring 1997, Fall 1997, Spring 2000, Fall 2000, Fall 2003.

Design and Analysis of Algorithms, Cornell (CS 482), Spring 1992.

Automated Reasoning, Stanford (CS 157), Winter 1989.

Graduate courses:

Formalisms Every Computer Scientist Should Know, ISTA, Fall 2023.

Formal Methods, ISTA, Fall 2011, Fall 2012, Fall 2013 (taught jointly with Krishnendu Chatterjee).

Scientific Presentation and Conduct, ISTA, Spring 2011, Spring 2012, Spring 2013, Spring 2014 (taught jointly with Sylvia Cremer).

Problem Solving in Computer Science, EPFL, Spring 2005, Spring 2007, Fall 2008.

Model Checking: From Finite-State to Hybrid Systems, Technical University Munich, May 2002; ETH Zürich, June 2002; EPFL, Fall 2007.

Formal Techniques for Software Reliability, UC Berkeley (CS 294-8), Spring 2001 (taught jointly with Alex Aiken and George Necula).

Hybrid Systems, UC Berkeley (EECS 291E), Fall 1996 (taught jointly with Shankar S. Sastry), Spring 2000 (taught jointly with Karl Johansson).

Computer-Aided Verification, UC Berkeley (EECS 219C), Spring 1996, Spring 1998, Fall 1999, Spring 2003; University of the Saarland, Spring 1999; EPFL, Fall 2004, Spring 2006.

Advanced Programming Languages, Cornell (CS 611), Fall 1995.

Theory of Concurrent Systems, Cornell (CS 615), Spring 1993, Spring 1994, Spring 1995.

Graduate seminars:

Topics in Formal Methods, Cornell (CS 713), Fall 1994.

Technical Writing, Cornell (CS 713), Fall 1993.

Topics in Hybrid Systems, Cornell (CS 713), Fall 1992, Fall 1995.

Advising

Undergraduate advisor in Computer Science at EPFL, 2005–09; in Computer Engineering at UC Berkeley, 2002–04; in Computer Science at Cornell University, 1992–95.

Semester project supervisor at EPFL for Regis Blanc (*ABC: Analyzing Bounds and Complexity*, 2009); Thibaud B. Hottelier (*VALIGATOR: A Verification Tool with Bound and Invariant Generation*, 2008); Polina Makeeva (*Regular Membership Constraints*, 2008).

Bachelor’s thesis supervisor at EPFL for Christoph Trunk (*On Games of Imperfect Information*, 2007).

Intern supervisor at UC Berkeley for Adam Chlipala (2003); at EPFL for Rishabh Singh (co-supervised by Andrey Rybalchenko, 2007), Rushil Goel (co-supervised by Verena Wolf, 2008), Rohit Singh (co-supervised by Barbara Jobstmann, 2009); at ISTA for Yashdeep Godhal (co-supervised by Krishnendu Chatterjee, 2010), Raluca Halalai (co-supervised by Vasu Singh, 2010), Rohit Singh (co-supervised by Pavol Cerny, 2010), Nishant Totla (co-supervised by Thomas Wies, 2010), Sivakanth Gopi (co-supervised by Pavol Cerny, 2011), Nishant Totla (co-supervised by Pavol Cerny, 2011), Aditya Ayyar (co-supervised by Ali Sezgin, 2012), Vipul Singh (co-supervised by Ashutosh Gupta, 2012), Alexandre Thevenet-Montagne (co-supervised by Ashutosh Gupta, 2012), Sameep Bagadia (co-supervised by Ashutosh Gupta, 2013), Matthias Löning (2013), Pratik Fegade (co-supervised by Ashutosh Gupta, 2014), Vansh Pahwa (co-supervised by Cezara Dragoi, 2014), Charmi Dedhia (co-supervised by Jessica Davies, 2015), Pradyot Prakash (co-supervised by Sergiy Bogomolov, 2015), Shubham Goel (co-supervised by Guy Avni, 2016), Aviral Kumar (co-supervised by Sergiy Bogomolov, 2016), Chris Wendler (2016), Bharat Khandelwal (co-supervised by Hui Kong, 2017), N. Ege Saraç (co-supervised by Thomas Ferrère, 2017), Alexander Scharinger (2018), Milad Aghajohari (co-supervised by Guy Avni, 2018), Parand Alizadeh Alamdari (co-supervised by Guy Avni, 2019), Soroush Ebadian (co-supervised by Bernhard Kragl, 2019), Mahyar Karimi (co-supervised by Kaushik Mallik, 2022), Pavol Kebis (co-supervised by Nicolas Mazzocchi, 2022), Stefanie Muroya Lei (co-supervised by Fabian Mühlböck, 2022), Ouldouz Neysari (co-supervised by Marek Chalupa, 2023).

Master’s advisor in Computer Science at EPFL, 2005–09; M.Eng. advisor in Computer Science at Cornell University, 1992–95.

Master’s thesis supervisor at EPFL for Damien Zufferey (*Verification of Concurrent Asynchronous Message-Passing Programs*, 2009); Thibaud B. Hottelier (*Invariants for Arrays and Matrices*, 2009); Cédric Favre (*Algorithmic Verification of Business Process Models*, 2008); Yvan Bidiville (*An Extended Instrumentation Language for Fault Localization*, 2007); Ashutosh K. Gupta (*Proving Termination of Program Loops*, 2007); Marc Schaub (*Formal Methods in Systems Biology: Modeling the Notch/Wnt Crosstalk in Mammalian Skin*, 2006), won the EPFL Foundation Annaheim Award 2006; Grégory Théoduloz (*Integrating Shape Analysis in the Model Checker BLAST*, 2006), won the EPFL Unicible Award 2006.

M.S. thesis supervisor at UC Berkeley for Arindam Chakrabarti (*Interface Compatibility Checking for Software Modules*, 2005), Krishnendu Chatterjee (*Stack-Size Analysis for Interrupt-driven Programs*, 2004), Arkadeb Ghosal (*xGIOTTO: Event-driven Programming*, 2004), Shaz Qadeer (*Partial-order Reduction in Symbolic State-space Exploration*, 1997).

M.S. thesis reader at UC Berkeley for Jongho Lee (*New Real-Time Embedded Software for an Autonomous Helicopter System using Giotto*, 2006), N. Vinay Krishnan (*Real-Time Systems Design in Ptolemy II: A Time-triggered Approach*, 2004), Judith Liebman (*The Time-based Approach to Embedded Programming: A Hardware-in-the-Loop Simulation Framework*, 2002), Paul Whitaker (*The Simulation of Synchronous Reactive Systems in Ptolemy II*, 2001), Minxi Gao (*Multi-valued Multi-level Logic Synthesis*, 2000), Jun Zhang (*Dynamical Systems Revisited: Hybrid Systems with Zeno Executions*, 1999), Mudit Goel (*Process Networks in Ptolemy II*, 1998), Neil Smyth (*CSP Domain in Ptolemy II*, 1998), Gurmeet S. Manku (*Structural Symmetries and Model Checking*, 1997), Cliff Cordeiro (*The Tycho*

Interactive Documentation System, 1997), Farhana Sheikh (*Visualizing Architecture and Algorithm Interaction in Embedded Systems*, 1997), Alok Agrawal (*Compact Complete Test Sets for Multiple Stuck Faults*, 1996), Adrian Isles (*Formal Verification using the Integer Combinational/Sequential Concurrency Model*, 1996), Bilung Lee (*Fusing Data Flow with Finite State Machines*, 1996).

Ph.D. preliminary examiner in Computer-Aided Design at UC Berkeley, Fall 1996, Spring 1997, Fall 1997, Spring 1998, Fall 1999, Spring 2000, Fall 2000, Spring 2001, Spring 2003.

Ph.D. rotation project supervisor at ISTA for Johannes Reiter (2011), Martin Chmelik (2012), Przemek Daca (2012), Thorsten Tarrach (2012), Andreas Pavlogiannis (2013), Mirco Giacobbe (2014), Bernhard Kragl (2015), Viktor Toman (2017), Adrián Elgyütt (2018), Luka Zeleznik (2018), Mathias Lechner (2018), Nikita Koval (2019), N. Ege Saraç (2019), Đorđe Žikelić (2019), Konstantin Kueffner (2021), Ali Asadi (2022), Mehrdad Karrabi (2022), Stefanie Muroya Lei (2022), Ehsan Goharshady (2023), Mahyar Karimi (2024), Ruichen Luo (2024).

Internal Ph.D. qualifying examiner at ISTA for Konstantin Kueffner (2022), N. Ege Saraç (2021), Đorđe Žikelić (2020), Mathias Lechner (2019), Luka Zeleznik (2019), Adrián Elgyütt (2019), Viktor Toman (2018), Amir Goharshady (2017), Bernhard Kragl (2016), Mirco Giacobbe (2015), Przemek Daca (2013), Andreas Pavlogiannis (2013), Thorsten Tarrach (2013), Arjun Radhakrishna (2011), Anmol V. Singh (2010), Damien Zufferey (2010); at UC Berkeley for Arkadeb Ghosal (electrical engineering, 2006), Krishnendu Chatterjee (computer science, 2004), Slobodan Matic (electrical engineering, 2004), Arindam Chakrabarti (computer science, 2004), Vinayak S. Prabhu (electrical engineering, 2004), Ranjit Jhala (computer science, 2003), Westley Weimer (computer science, 2003), Stephen Neuendorffer (electrical engineering, 2003), Joseph Flenner (mathematics, 2003), Xiaojun Liu (electrical engineering, 2003), Rupak Majumdar (computer science, 2002), Deepak Rajan (industrial engineering and operations research, 2001), Benjamin Horowitz (computer science, 2001), David Andre (computer science, 2000), Daishi Harada (computer science, 2000), Clifton Ealy (mathematics, 2000), Alf Onshuus (mathematics, 2000), Yuhong Xiong (electrical engineering, 2000), Jie Liu (electrical engineering, 1999), Freddy Y.C. Mang (computer science, 1999), John Davis (electrical engineering, 1998), Adrian Isles (electrical engineering, 1998), Bilung Lee (electrical engineering, 1998), Shaz Qadeer (electrical engineering, 1998), Sriram K. Rajamani (computer science, 1998), Amit Narayan (electrical engineering, 1997), George Pappas (electrical engineering, 1997), Serdar Tasiran (electrical engineering, 1996), Claire Tomlin (electrical engineering, 1996), Hal Wasserman (computer science, 1996).

External Ph.D. proficiency examiner at the University of Colorado Boulder for Mateo Perez, 2023; at TU Vienna for Marcel Moosbrugger, 2022.

Ph.D. jury president at EPFL for Radu Jurca (*Truthful Reputation Mechanisms for Online Systems*, 2007).

Internal Ph.D. thesis reader at ISTA for Đorđe Žikelić (*Automated Verification and Control of Infinite-State Stochastic Systems*, 2023); Viktor Toman (*Improved Verification Techniques for Concurrent Systems*, 2021); Amir Goharshady (*Parameterized and Algebro-Geometric Advances in Static Program Analysis*, 2020); Andreas Pavlogiannis (*Algorithmic Advances in Program Analysis and their Applications*, 2017); at UC Berkeley for Xiaojun Liu (*Semantic Foundation of the Tagged Signal Model*, 2005), Deepak Rajan (*Designing Capacitated Survivable Networks: Polyhedral Analysis and Algorithms*, 2004), Yuhong Xiong (*An Extensible Type System for Component-based Design*, 2002), John Davis (*Order, Concurrency, and System-level Design*, 2000), George Pappas (*Hybrid Systems: Computation and Abstraction*, 1998), Claire Tomlin (*Hybrid Control of Air-traffic Management Systems*, 1998); at Cornell University for Eric Aaron, Jason Hickey, Rod Moten, David Sturgill, Samuel Weber (1992–95).

External Ph.D. thesis referee for Marcel Moosbrugger (*Automated Analysis of Probabilistic Loops*, TU Vienna, 2024); Kishor Jothimurugan (*Specification-Guided Reinforcement Learning*, University of Pennsylvania, 2023); Ramin Hasani (*Interpretable Recurrent Neural Networks in Continuous-time Control Environments*, TU Vienna, 2020); Ehsan Khamespanah (*Modeling, Verification, and Analysis of Timed*

Actor-based Models, Reykjavik University, 2018); Thomas Ferrère (*Assertions and Measurements for Mixed-Signal Simulation*, University of Grenoble, France, 2016); Clemens Wiltsche (*Assume-Guarantee Strategy Synthesis for Stochastic Games*, Oxford University, United Kingdom, 2016); Yaron Velner (*Multidimensional and Pushdown Mean-Payoff Games with Applications to Quantitative Verification and Synthesis of Programs: Complexity, Decidability, and Algorithms*, Tel Aviv University, Israel, 2015); Mickael Randour (*Synthesis in Multi-Criteria Quantitative Games*, University of Mons, Belgium, 2014); Tatjana Petrov (*Formal Reductions of Stochastic Rule-based Models of Biochemical Systems*, ETH Zurich, Switzerland, 2013); Philippe Suter (*Programming with Specifications*, EPFL, Switzerland, 2012); Georg Weissenbacher (*Program Analysis with Interpolants*, Oxford University, United Kingdom, 2010); Dejan Ničković (*Checking Timed and Hybrid Properties: Theory and Applications*, University of Grenoble, France, 2008); Corneliu Popeea (*Disjunctive Invariants for Modular Static Analysis*, National University of Singapore, 2008); Jérémie Cabessa (*A Game-theoretical Approach to the Algebraic Counterpart of the Wagner Hierarchy*, University of Paris 7, France, 2007); Laurent Doyen (*Algorithmic Analysis of Complex Semantics for Timed and Hybrid Automata*, University of Brussels, Belgium, 2006); Cristina Cerschi Seceleanu (*A Methodology for Constructing Correct Reactive Systems*, University of Turku, Finland, 2005); Maria Sorea (*Verification of Real-Time Systems through Lazy Approximations*, University of Ulm, Germany, 2004); Mauno Rönkkö (*Stepwise Development of Hybrid Systems*, University of Turku, Finland, 2001); Jean-François Raskin (*Logics, Automata, and Classical Theories for Deciding Real Time*, University of Namur, Belgium, 1999); Gunnar Wittich (*Ein problemorientierter Ansatz zum Nachweis von Realzeiteigenschaften eingebetteter Systeme*, University of Oldenburg, Germany, 1999); Yonit Kesten (*Refinement and Verification of Reactive and Hybrid Systems*, The Weizmann Institute of Science, Israel, 1995).

Habilitation thesis referee for Ocan Sankur (*Contributions on Formal Methods for Timed and Probabilistic Systems*, University of Rennes, France, 2023); Gregor Gößler (*Formal Techniques for Component-based Design of Embedded Systems*, University of Grenoble, France, 2014); Nicolas Markey (*Verification of Embedded Systems: Algorithms and Complexity*, ENS Cachan, France, 2011).

Postdoctoral supervisor at Cornell University for Howard Wong-Toi (1994–96); at UC Berkeley for Orna Kupferman (1996–98), Luca de Alfaro (1997–2001), Sriram C. Krishnan (1998–99), Jean-François Raskin (1998–2000), Christoph M. Kirsch (1999–2004), Marius Minea (2000–01), Grégoire Sutre (2000–01), Marcin Jurdziński (2000–04), Marco A. Sanvido (2002–04), Dirk Beyer (2003–04); at EPFL for Dirk Beyer (2004–06), Jasmin Fisher (2004–07), Nir Piterman (2004–07), Andrey Rybalchenko (2006–07; won a Microsoft postdoctoral fellowship), Laurent Doyen (2006–09), Dietmar Berwanger (2007–08), Barbara Jobstmann (2007–09), Laura Kovács (2007–09), Dejan Ničković (2008–09), Thomas Wies (2008–09), Verena Wolf (2008–09); at ISTA for Dejan Ničković (2009–11), Thomas Wies (2009–11), Pavol Cerný (2009–12), Vasu Singh (2010–11), Ali Sezgin (2010–13), Udi Boker (2011–13), Cezara Dragoi (2011–14), Ashutosh Gupta (2011–14), Jan Otop (2012–15), Jan Křetínský (2013–15), Jessica Davies (2014–15), Jakob Ruess (2014–16), Roopsha Samanta (2014–16), Tatjana Petrov (co-supervised with Calin Guet, 2014–17), Sergiy Bogomolov (2015–16), Andrey Kupriyanov (2015–17), Hui Kong (2015–18), Thomas Ferrère (2016–19), Guy Avni (2016–20), Duc-Hiep Chu (2017), Christian Schilling (2018–20), Miriam García Soto (2018–21), Anna Lukina (2019–21), Fabian Mühlböck (2019–22), Abhinav Verma (2021–22), Marek Chalupa (since 2021), Kaushik Mallik (2022–24), Nicolas Mazzocchi (2022–24), Samuel Pastva (2022–24), Ana Oliveira da Costa (since 2023), Emily Yu (since 2023), K.S. Thejaswini (since 2023).

University Committees

Stanford University: Computer Science Graduate Student Representative, 1989–90.

Cornell University: Computer Science Faculty Recruiting Committee, 1993–94, 1994–95; Computer Science Distinguished Lecture Series Coordinator, 1993–94, 1994–95; Computer Science Cognitive Studies

Liaison, 1993–94, 1994–95, Fall 1995; Computer Science Undergraduate Curriculum Committee, 1992–93; Computer Science M.Eng. Curriculum Committee, 1992–93; graduate field member for Computer Science, Applied Mathematics, and Cognitive Studies, 1992–95.

University of California, Berkeley: EECS Faculty Recruiting Committee, 2002–03; EECS NASA Ames Task Force, 2000–01; EECS Alumni Outreach Task Force, 2000–01; EECS Coordination and Planning Task Force, 1996–97; EECS Undergraduate Admissions Committee, 1999–2000 (chair); EECS Undergraduate Curriculum Committee, 1997–98, 1998–99, 1999–2000; EECS Graduate Admissions Committee, 1996–97, 1997–98; EECS Math 55 Task Force, 1998–99; EECS Retreat Committee, 1996–97, 1997–98.

University of the Saarland: Mathematics for Computer Science Task Force, 1999; International Graduate School Task Force, 1999.

EPFL: EPFL Faculty Promotion Committee, 2004–09; IC Executive Committee, 2007–09; IC Faculty Promotion Committee, 2007–08; IC Doctoral School Committee, 2006–07; IC MsPhD Program Task Force, 2006–07; IC Faculty Recruiting Committee, 2004–06.

Professional Activities

Conference Organization and Program Chair

1. Co-organizer (jointly with Radu Grosu), *Cyber-Physical Systems Week (CPS Week)*, Vienna, Austria, April 2016.
2. Program chair (jointly with Dale Miller), *Joint Conference on Computer Science Logic and Symposium on Logic in Computer Science (CSL-LICS)*, Vienna, Austria, July 2014.
3. Organizer and program chair, *Conference on Computational Methods in Systems Biology (CMSB)*, Klosterneuburg, Austria, September 2013.
4. Program chair (jointly with Jaroslav Nešetřil and Tomáš Vojnar), *Doctoral Workshop on Mathematical and Engineering Methods in Computer Science (MEMICS)*, Znojmo, Czech Republic, October 2012.
5. Organizer (jointly with Radu Grosu), *NSF-FWF Workshop on Computational Modeling and Analysis of Complex Systems and Rigorous Systems Engineering (CMACS-RISE)*, Washington, DC, September 2012.
6. Organizer and program chair (jointly with Krishnendu Chatterjee), *Conference on Formal Modeling and Analysis of Timed Systems (FORMATS)*, Klosterneuburg, Austria, September 2010.
7. Organizer, *ISTA Symposium on Reactive Modeling in Science and Engineering*, Klosterneuburg, Austria, May 2010.
8. Organizer (jointly with Alberto L. Sangiovanni-Vincentelli, Jonathan Sprinkle, and Janos Sztipanovits), *NSF Workshop: From Embedded Systems to Cyber-Physical Systems*, St. Louis, Missouri, April 2008.
9. Program chair (jointly with Jacques Duparc), *Conference on Computer Science Logic (CSL)*, Lausanne, Switzerland, September 2007.
10. Organizer (jointly with Werner Damm), *Workshop on Foundations of Component-based Design (WFCD)*, Salzburg, Austria, September 2007.
11. Organizer (jointly with Dirk Beyer), *First Alpine Verification Meeting (AVM)*, Lausanne, Switzerland, October 2005.
12. Organizer, *IC Research Day*, EPFL, Lausanne, Switzerland, June 2005.

13. Organizer (jointly with Zohar Manna). *Monterey Workshop on Software Engineering Tools*, Baden, Austria, October 2004.
14. Organizer and program chair (jointly with Christoph M. Kirsch), *First ACM Conference on Embedded Software (EMSOFT)*, Tahoe City, California, October 2001.
15. Organizer and program chair (jointly with Shankar S. Sastry), *First Conference on Hybrid Systems: Computation and Control (HSCC)*, Berkeley, California, April 1998.
16. Organizer and program chair (jointly with Rajeev Alur), *Conference on Computer-Aided Verification (CAV)*, New Brunswick, New Jersey, July 1996.
17. Organizer and program chair (jointly with Rajeev Alur and Eduardo D. Sontag), *DIMACS Workshop on Verification and Control of Hybrid Systems*, New Brunswick, New Jersey, October 1995.

Conference Program Committees

1. Symposium on AI Verification (SAIV), 2024.
2. Workshop on Hybrid Systems Biology (HSB), 2014.
3. Conference on Computational Methods in Systems Biology (CMSB), 2012.
4. Workshop on Static Analysis and Systems Biology (SASB), 2011.
5. Workshop on Static Analysis and Systems Biology (SASB), 2010.
6. AutoMathA Conference, 2009.
7. ACM Workshop on Transactional Computing (TRANSACT), 2009.
8. Conference on Hybrid Systems: Computation and Control (HSCC), 2009.
9. IFAC Conference on Analysis and Design of Hybrid Systems (ADHS), 2009.
10. Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM), 2009.
11. IFIP Conference on Domain Specific Languages (DSL), 2009.
12. Conference on Logic Programming and Automated Reasoning (LPAR), 2008.
13. Workshop on Model-based Architecturing and Construction of Embedded Systems (ACES), 2008.
14. IEEE Real-Time Systems Symposium (RTSS), 2008.
15. Workshop on Automated Specification and Verification of Web Systems (WWV), 2008.
16. IEEE Conference on Software Engineering and Formal Methods (SEFM), 2008.
17. Conference on Computer-Aided Verification (CAV), 2008.
18. Workshop on Cyber-Physical Systems (CPS), 2008.
19. School on Modeling and Verifying Parallel Processes (MOVEP), 2008.
20. Workshop on Model-driven High-level Programming of Embedded Systems (SLAP), 2008.
21. Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI), 2008.
22. IEEE Conference on Quantitative Evaluation of Systems (QEST), 2007.

23. IEEE Symposium on Logic in Computer Science (LICS), 2007.
24. ACM Symposium on Principles of Programming Languages (POPL), 2007.
25. Design, Automation, and Test in Europe (DATE), 2007.
26. Conference on Tests and Proofs (TAP), 2007.
27. Workshop on Testing, Analysis, and Verification of Web Services and Applications (TAV-WEB), 2006.
28. IEEE Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA), 2006.
29. ACM Conference on Embedded Software (EMSOFT), 2006.
30. Conference on Intelligent Computer Communication and Processing (ICCP), 2006.
31. International Colloquium on Automata, Languages, and Programming (ICALP), 2006.
32. Symposium on Component-Based Software Engineering (CBSE), 2006.
33. International Joint Conference on Automated Reasoning (IJCAR), 2006.
34. Joint Modular Languages Conference (JMLC), 2006.
35. Conference on Application of Concurrency to System Design (ACSD), 2006.
36. Workshop on Formal Methods for Industrial Critical Systems (FMICS), 2006.
37. Design, Automation, and Test in Europe (DATE), 2006.
38. International Colloquium on Theoretical Aspects of Computing (ICTAC), 2006.
39. Conference on Foundations of Software Science and Computation Structures (FOSSACS), 2006.
40. IFAC Conference on Analysis and Design of Hybrid Systems (ADHS), 2006.
41. Symposium on Software Composition (SC), 2006.
42. Workshop on Software Quality (SOQUA), 2005.
43. IEEE Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA), 2005.
44. Workshop on Foundations of Interface Technologies (FIT), 2005.
45. ACM Conference on Embedded Software (EMSOFT), 2005.
46. Conference on Application of Concurrency to System Design (ACSD), 2005.
47. Workshop on Verification and Validation of Model-based Planning and Scheduling Systems (VVPS), 2005.
48. Conference on Computer-Aided Verification (CAV), 2005.
49. Symposium on Component-Based Software Engineering (CBSE), 2005.
50. International Embedded and Hybrid Systems Conference (IEHSC), 2005.
51. Symposium on Formal Methods (FM), 2005.
52. Conference on Hybrid Systems: Computation and Control (HSCC), 2005.
53. Asian Symposium on Programming Languages and Systems (APLAS), 2004.

54. IEEE Conference on Real-Time and Embedded Computing Systems and Applications (RTCSA), 2004.
55. ACM Conference on Embedded Software (EMSOFT), 2004.
56. Joint Symposium on Formal Techniques in Real-Time and Fault-Tolerant Systems and Conference on Formal Modeling and Analysis of Timed Systems (FTRTFT-FORMATS), 2004.
57. International Colloquium on Automata, Languages, and Programming (ICALP), 2004.
58. Conference on Application of Concurrency to System Design (ACSD), 2004.
59. Conference on Hybrid Systems: Computation and Control (HSCC), 2004.
60. Conference on Formal Modeling and Analysis of Timed Systems (FORMATS), 2003.
61. Joint Symposium on Temporal Representation and Reasoning and International Conference on Temporal Logic (TIME-ICTL), 2003.
62. IEEE Symposium on Logic in Computer Science (LICS), 2003.
63. ACM Conference on Programming Language Design and Implementation (PLDI), 2003.
64. Conference on Implementation and Application of Automata (CIAA), 2003.
65. IFAC Conference on Analysis and Design of Hybrid Systems (ADHS), 2003.
66. ACM Conference on Embedded Software (EMSOFT), 2002.
67. Symposium on Formal Techniques in Real-Time and Fault-Tolerant Systems (FTRTFT), 2002.
68. Conference on Concurrency Theory (CONCUR), 2002.
69. Conference on Automated Deduction (CADE), 2002.
70. Conference on Computer-Aided Verification (CAV), 2002.
71. Symposium on Temporal Representation and Reasoning (TIME), 2002.
72. Conference on Hybrid Systems: Computation and Control (HSCC), 2002.
73. Workshop on Theory and Practice of Timed Systems (TPTS), 2002.
74. Conference on Coordination Models and Languages (COORDINATION), 2002.
75. International Colloquium on Automata, Languages, and Programming (ICALP), 2001.
76. Symposium on Temporal Representation and Reasoning (TIME), 2001.
77. Workshop on Distributed System Validation and Verification (DSVV), 2001.
78. Conference on Hybrid Systems: Computation and Control (HSCC), 2001.
79. Conference on Concurrency Theory (CONCUR), 2000.
80. Conference on Automated Deduction (CADE), 2000.
81. Workshop on Distributed System Validation and Verification (DSVV), 2000.
82. Conference on Automation of Mixed Processes (ADPM), 2000.
83. Conference on Concurrency Theory (CONCUR), 1999.

84. Conference on Computer-Aided Verification (CAV), 1999.
85. International Colloquium on Automata, Languages, and Programming (ICALP), 1999.
86. IEEE Conference on Distributed Computing Systems (ICDCS), 1999.
87. AMAST Workshop on Real-Time Systems (ARTS), 1999.
88. IEEE Symposium on Computer-Aided Control System Design (CACSD), 1999.
89. Conference on Formal Methods in Computer-Aided Design (FMCAD), 1998.
90. Symposium on Formal Techniques in Real-Time and Fault-Tolerant Systems (FTRTFT), 1998.
91. Symposium on Mathematical Foundations of Computer Science (MFCS), 1998.
92. Workshop on the Verification of Infinite-State Systems (INFINITY), 1998.
93. IEEE Symposium on Logic in Computer Science (LICS), 1998.
94. Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS), 1998.
95. Fifth Hybrid Systems Workshop (Notre Dame, Indiana), September 1997.
96. Symposium on Theoretical Aspects of Computer Software (STACS), 1997.
97. Workshop on the Verification of Infinite-State Systems (INFINITY), 1997.
98. Conference on Computer-Aided Verification (CAV), 1997.
99. AMAST Workshop on Real-Time Systems (ARTS), 1997.
100. Conference on Formal Aspects of Software Engineering (FASE), 1997.
101. Workshop on Hybrid and Real-Time Systems (HART), 1997.
102. ACM SIGPLAN Workshop on the Automated Analysis of Software (Paris, France), January 1997.
103. Fourth Hybrid Systems Workshop (Ithaca, New York), October 1996.
104. Symposium on Formal Techniques in Real-Time and Fault-Tolerant Systems (FTRTFT), 1996.
105. Conference on Concurrency Theory (CONCUR), 1996.
106. Conference on Concurrency Theory (CONCUR), 1995.
107. Conference on Computer-Aided Verification (CAV), 1995.
108. IEEE Symposium on Logic in Computer Science (LICS), 1995.
109. IEEE Conference on Distributed Computing Systems (ICDCS), 1993.

Editorial Boards

1. *Journal of the ACM*, 2009–16.
2. EATCS Texts and Monographs Series, Springer, 2004–15.
3. *Foundations and Trends in Electronic Design Automation*, NOW Publishers, 2004–12.
4. *Theoretical Computer Science*, Springer, 2002–09.
5. *ACM Transactions on Embedded Computing Systems*, 2001–08.
6. *Software Tools for Technology Transfer*, Springer, 1997–2008.
7. *Formal Methods in System Design*, Springer, 1996–2008.
8. *Handbook of Networked and Embedded Control Systems*, Birkhäuser, 2005.
9. *International Journal of Embedded Systems*, special issue on Hardware-Software Codesign for Systems-on-Chip, 2004.

Public Award Committees

1. *Körber-Prize*, trustee, since 2024.
2. *EATCS Award Committee*, member 2022, 2023; chair 2024.
3. *RV (Runtime Verification) Test-of-Time Award Committee*, member 2022.
4. *EMSOFT (Embedded Software) Test-of-Time Award Committee*, member 2021.
5. *HSCC (Hybrid Systems: Computation and Control) Test-of-Time Award Committee*, member 2019, 2020; chair 2021.
6. *IEEE Computer Society Fellows Selection Committee*, member 2013.
7. *Ackermann Award Jury*, member 2012, 2013, 2014.
8. *LICS (Logic in Computer Science) Test-of-Time Award Committee*, member 2011, 2013.
9. *CAV (Computer-Aided Verification) Award Committee*, member 2008, 2011; chair 2012.

Steering Committees and Advisory Boards

1. *Austrian Council for Sciences, Technology, and Innovation (FORWIT)*, advisory council to the Austrian government, chair, since December 2023.
2. *European Research Council (ERC)*, member, Scientific Council, since January 2023.
3. *Institute for Computer Science, Artificial Intelligence, and Technology (INSAIT)*, member, Advisory Board, since 2022.
4. *Alpine Verification Meeting (AVM)*, member, Steering Committee, since 2019.
5. *Masaryk University, Brno*, member, Science Advisory Board, 2015–19.
6. *International Conference on Computational Methods in Systems Biology (CMSB)*, member, Steering Committee, 2014–18.
7. *Simons Institute for the Theory of Computing*, Berkeley, member, Scientific Advisory Board, 2013–16.

8. *International Workshop on Formal Modeling and Analysis of Timed Systems (FORMATS)*, member, Steering Committee, since 2010.
9. *Austrian Society for Rigorous Systems Engineering (ARISE)*, member, Executive Board, 2010–15.
10. *Max-Planck Institute for Software Systems*, Saarbrücken and Kaiserslautern, member, Scientific Advisory Board, 2008–15.
11. *Workshop on Formal Methods in Systems Biology (FMSB)*, founding member, Steering Committee, 2008.
12. *IEEE Symposium on Logic in Computer Science (LICS)*, member, Advisory Board, 2006–18.
13. *ACM Conference on Embedded Software (EMSOFT)*, chair, Advisory Board, 2005–10.
14. *ArtistDesign EDAA Special Interest Group (EMSIG)*, member, Strategic Management Board, 2012.
15. *ArtistDesign EU Network of Excellence*, member, Strategic Management Board, 2008–12.
16. *Multi-level Adaptive Modeling of Biological Systems*, French research consortium, member, Scientific Advisory Board, 2010–12.
17. *European Coordinated Research on Long-term Challenges in Information and Communication Sciences and Technologies ERANET (CHIST-ERA)*, member, Scientific Advisory Board, 2010–12.
18. *European Research Training Network on Games and Automata for Synthesis and Validation (GAMES)*, member, Steering Committee, 2006–09.
19. *ACM Special Interest Group on Embedded Systems (SIGBED)*, founding member, Executive Board, 2002–05.
20. *ACM Conference on Embedded Software (EMSOFT)*, founding chair, Steering Committee, 2001–2005.
21. *QPQ Deductive Software Repository*, member, Advisory Board, 2002–11.
22. *Sino-Euro-American Workshop on the Scientific Foundations of Informatics as an Engineering Discipline (Macao)*, member, Steering Committee, 2001.
23. *IMACS Multi-conference on Circuits, Systems, Communications, and Computers (Athens, Greece)*, member, Scientific Committee, 1999.
24. *Workshop on Current Trends in Applied Formal Methods (Boppard, Germany)*, member, Advisory Board, 1998.
25. *Conference on Hybrid Systems: Computation and Control (HSCC)*, founding member, Steering Committee, 1997–2000.

Other Technical Committees

1. *NASA HDCC Workshop on High Dependability Computing* (Mountain View, California), participant, Working Group on Formal Methods, 2001.
2. *DARPA ISAT Meeting* (Woods Hole, Massachusetts), participant, Working Group on Complex Systems, 1997.
3. *ACM Workshop on Strategic Directions in Computing Research*, participant, Working Group on Concurrency and Working Group on Formal Methods, 1996.

Journal Referee

ACM Transactions on Programming Languages and Systems; ACM Transactions on Software Engineering and Methodology; Communications of the ACM; Computer Science Research and Development; Design Automation for Embedded Systems; Discrete-Event Dynamic Systems; Distributed Computing; Formal Aspects of Computing; Formal Methods in System Design; IEEE Transactions on Automatic Control; IEEE Transactions on Computers; IEEE Transactions on Software Engineering; Information and Computation; Information Processing Letters; International Journal of Systems Science; Journal of Automated Reasoning; Journal of Computer and Software Engineering; Journal of Logic and Computation; Journal of Parallel and Distributed Computing; Journal of the ACM; SIAM Journal on Computing; The Journal of Symbolic Computation; The Journal of Symbolic Logic; Theoretical Computer Science.

Book Referee

Addison-Wesley; Elsevier; IEEE Press; Kluwer Academic Publishers; MIT Press; Springer.

Conference Referee

ACM Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES), 2003; ACM Conference on Programming Language Design and Implementation (PLDI), 2008; ACM Symposium on Principles of Distributed Computing (PODC), 1992, 1993, 1995; ACM Symposium on Principles of Programming Languages (POPL), 1999, 2000, 2001, 2002, 2008, 2011; Asian Computing Science Conference (ASIAN), 1996; Conference on Algebraic Methodology and Software Technology (AMAST), 1995, 1998; Conference on Computer-Aided Verification (CAV), 1992, 1993, 1994; Conference on Computer Science Logic (CSL), 1999; Conference on Concurrency Theory (CONCUR), 1992, 2001, 2003; Conference on Formal Techniques in Real-Time and Fault-Tolerant Systems (FTRTFT), 1994; Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS), 2005; Conference on Hybrid Systems: Computation and Control (HSCC), 2003; Conference on the Mathematics of Program Construction (MPC), 1995; Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS), 1999; Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI), 2006; European Conference on Parallel Computing (EUROPAR), 2000; IEEE Conference on Decision and Control (CDC), 1998, 2003, 2004; IEEE Real-Time Systems Symposium (RTSS), 1993, 1997; IEEE International Symposium on Circuits and Systems (ISCAS), 1998; IEEE Symposium on Foundations of Computer Science (FOCS), 1993, 1994, 1995, 1997, 1998, 2000, 2001, 2002; IEEE Symposium on High-Assurance Systems Engineering (HASE), 1997; IEEE Symposium on Logic in Computer Science (LICS), 1991, 1993, 1997, 2000, 2002, 2004; International Colloquium on Automata, Languages, and Programming (ICALP), 1997; International Conference on Parallel Processing (ICPP), 1996; Static Analysis Symposium (SAS), 1999; Symposium on Theoretical Aspects of Computer Science (STACS), 1997, 1998, 2005.

Other Referee

ACM Distinguished Dissertation Award; Agence Nationale de la Recherche, France; Army Research Office; Austrian Fonds zur Förderung wissenschaftlicher Forschung; Christian-Doppler Forschungsgesellschaft, Austria; Czech Science Foundation; Deutsche Forschungsgemeinschaft; Dutch Technology Foundation STW; European Research Council; German-Israeli Foundation for Scientific Research and Development; GULP Dissertation Award, Italy; INRIA, France; Israel Science Foundation; Italian Ministry for Education, Universities, and Research; NASA Technical Memoranda; National Science Foundation; Netherlands Science Research Foundation; Otto-Hahn Medal of the Max-Planck Society; Science Foundation of Ireland; Springer Lecture Notes in Computer Science; Swedish Research Council for Engineering Sciences; Swiss National Science

Foundation; UK Engineering and Physical Sciences Research Council; University of California at Berkeley Extension; University of California MICRO Program; Volkswagen Stiftung, Germany.

Professional Organizations

American Association for the Advancement of Science (AAAS).

Association for Computing Machinery (ACM). Special interest groups on Algorithms and Computation Theory (SIGACT), Artificial Intelligence (SIGAI), Embedded Systems (SIGBED), Design Automation (SIGDA), Logic and Computation (SIGLOG), and Programming Languages (SIGPLAN).

Association for Symbolic Logic (ASL).

European Association for Theoretical Computer Science (EATCS).

IEEE (Computer Society).

Sigma Xi.

Consulting

Wind River Systems, Alameda, California, 2002.

Scientific Systems Company, Woburn, Massachusetts, 2001.

Digital Equipment Corporation Systems Research Center, Palo Alto, California, 1996–1999.

GammaTech, Ithaca, New York, 1995–1996.

Research Grants

1. Principal Investigator, Austrian Science Fund (FWF), SFB Grant, *Interface Theory for Security and Privacy*, 1/2023–12/2026. EUR 284'040.
2. Principal Investigator, European Research Council (ERC), Advanced Investigator Grant 101020093, VAMOS: *Vigilant Algorithmic Monitoring of Software*, 1/2022–12/2026. EUR 2'451'280.
3. Principal Investigator, Austrian Science Fund (FWF), NFN Grant S11402-N23, *Modern Concurrency Paradigms, Part II*, 3/2015–2/2019. EUR 490'140.
4. Principal Investigator, Austrian Science Fund (FWF), Wittgenstein Award Z211-N23, *Executable Biology*, 1/2014–12/2020. EUR 1'500'000.
5. Principal Investigator, European Research Council (ERC), Advanced Investigator Grant 267989, QUAREM: *Quantitative Reactive Modeling*, 5/2011–4/2016. EUR 2'326'000.
6. Principal Investigator, Austrian Science Fund (FWF), NFN Grant S11402-N23, *Modern Concurrency Paradigms*, 3/2011–2/2015. EUR 455'616.
7. Principal Investigator, Microsoft Research Education Studio Award, *Automated Tutoring System for Automata Theory*, 2/2011. USD 10'000.
8. Principal Investigator (jointly with V. Kuncak and M. Odersky), Microsoft Research, *A Workbench for Ensuring Embedded Software Quality and Reliability*, 9/2008–8/2012. CHF 1'160'000.
9. Principal Investigator, Swiss National Science Foundation (SNF), SystemsX Grant 2008/040, *Rule-based Models for Signal Transduction*, 9/2008–8/2011. CHF 172'000.
10. Principal Investigator, European Commission, Subcontract to FP7 Grant ICT-STREP-215543 (J. Sifakis, Verimag, Grenoble, PI), COMBEST: *Component-based Embedded Systems Design Techniques*, 1/2008–12/2010. EUR 338'000.

11. Principal Investigator, European Commission, Subcontract to Grant ICT-NoE-214373 (J. Sifakis, Verimag, Grenoble, PI), ARTISTDESIGN: *Embedded Systems Design*, 1/2008–12/2012. EUR 118'000.
12. Principal Investigator, Microsoft Postgraduate Research Studentship, *Combining Software Verification and Testing*, 10/2007–9/2010. EUR 100'000.
13. Principal Investigator, Swiss National Science Foundation (SNF), Grant 205321-111840, *Formal Modeling of Cell-Fate Decisions*, 9/2006–12/2010. CHF 403'000.
14. Principal Investigator, Swiss National Science Foundation (SNF), Indo-Swiss Joint Research Programme, *Games in System Design and Verification*, 12/2005–11/2009. CHF 150'000.
15. Principal Investigator, Swiss National Science Foundation (SNF), Subcontract to National Center of Competence in Research (K. Aberer, EPFL, PI), *Mobile Information and Communication Systems*, 11/2005–10/2009. CHF 162'000.
16. Principal Investigator, Swiss National Science Foundation (SNF), Grant 200021-107600, *Interface-based Software Design and Verification*, 10/2005–9/2009. CHF 256'000.
17. Principal Investigator, European Commission, Subcontract to Grant IST-NoE-004527 (J. Sifakis, Verimag, Grenoble, PI), ARTIST2: *Embedded Systems Design*, 3/2005–8/2009. EUR 141'000.
18. Co-Principal Investigator, National Science Foundation (NSF), Information Technology Research Initiative, Grant ITR-0326577 (A. Aiken, University of California, Berkeley, PI), *Language-based Security*, 9/2003–8/2007. USD 900'000.
19. Principal Investigator, National Science Foundation (NSF) and National Aeronautics and Space Administration (NASA), Subcontract to Grant CCR-0234690 (L. de Alfaro, University of California, Santa Cruz, PI), *Interfaces and Model Checking for Software*, 9/2002–8/2006. USD 200'000.
20. Co-Principal Investigator, National Science Foundation (NSF), Information Technology Research Initiative, Grant CCR-0225610 (S.S. Sastry, University of California, Berkeley, PI), *Foundations of Hybrid and Embedded Software Systems*, 9/2002–8/2007. USD 13'600'000.
21. Principal Investigator, National Science Foundation (NSF), Grant CCR-0208875, *Towards Predictability and Portability in Embedded Software*, 9/2002–8/2006. USD 225'000.
22. Principal Investigator, Office of Naval Research (ONR), Grant N00014-02-1-0671, *Rich Interfaces for Component-based Design*, 5/2002–4/2005. USD 600'000.
23. Principal Investigator, National Science Foundation (NSF) and Defense Advanced Research Projects Agency (DARPA), Subcontract to Grant 285915D (Joe Cross, Lockheed Martin, PI), *National Experimental Platform for Hybrid and Embedded Systems Technology*, 2/2002–7/2003. USD 188'000.
24. Principal Investigator, National Science Foundation (NSF), Grant CISE-0131213, *Workshop on Embedded Software*, 9/2001–12/2001. USD 15'000.
25. Principal Investigator, California MICRO Program, Grant 01-037, and Wind River Systems, *Embedded Systems Development with GIOTTO*, 9/2001–12/2002. USD 31'000.
26. Principal Investigator, National Science Foundation (NSF), Grant CCR-9988172, *Games, Time, and Probability in Model Checking*, 9/2000–8/2004. USD 310'000.
27. Co-Principal Investigator, National Science Foundation (NSF), Information Technology Research Initiative, Grant CCR-0085949 (A. Aiken, University of California, Berkeley, PI), *The Open Source Quality Project*, 9/2000–8/2004. USD 2'942'000.

28. Principal Investigator, Defense Advanced Research Projects Agency (DARPA), Subcontract to Grant F33615-00-C-1693 (Z. Manna, Stanford University, PI), *Automating the Development and Analysis of Embedded Systems*, 9/2000–8/2003. USD 1'147'000.
29. Co-Principal Investigator, Defense Advanced Research Projects Agency (DARPA), Grant F33615-00-C-1703 (E.A. Lee, University of California, Berkeley, PI), *Process-based Software Components for Networked Embedded Systems*, 5/2000–11/2003. USD 2'000'000.
30. Principal Investigator, Air Force Office of Scientific Research (AFOSR), Multi-University Research Initiative, Grant F49620-00-1-0327, *Real-Time Fault-Tolerant Networks*, 5/2000–4/2005. USD 2'978'000.
31. Principal Investigator, Defense Advanced Research Projects Agency (DARPA), Subcontract to Grant F33615-99-C-1500 (Don Winter, Boeing Corporation, PI), *Open Control Platform*, 3/2000–8/2001. USD 143'000.
32. Principal Investigator, Semiconductor Research Corporation (SRC), Contract 99-TJ-683.003, *Compositional and Hierarchical Verification using MOCHA*, 7/1999–6/2002. USD 624'000.
33. Co-Principal Investigator, Microelectronics Advanced Research Corporation, Grant 98-DT-660, and Defense Advanced Research Projects Agency (DARPA), Grant MDA972-99-1-0001 (A.R. Newton, University of California, Berkeley, PI), *Design and Test of Gigascale Integrated Systems*, 10/1998–8/2003. USD 18'479'000.
34. Co-Principal Investigator, Defense Advanced Research Projects Agency (DARPA), Grant F33615-C-98-3614 (S.S. Sastry, University of California, Berkeley, PI), *Integrated Design and Analysis Tools for Software-based Control Systems*, 8/1998–7/2003. USD 3'512'000.
35. Principal Investigator, Defense Advanced Research Projects Agency (DARPA), Grant NAG2-1214, *MOCHA: Modularity in Model Checking*, 8/1998–7/2000. USD 850'000.
36. Principal Investigator, Semiconductor Research Corporation (SRC), Contract 97-DC-324.041, *Compositional and Hierarchical Verification using MOCHA*, 1/1998–6/1999. USD 137'000.
37. Principal Investigator, Semiconductor Research Corporation (SRC), Contract 96-DC-324.036, *Efficient Verification of Reactive Modules*, 1/1997–12/1997. USD 94'000.
38. Principal Investigator, Army Research Office (ARO), Multi-University Research Initiative, Subcontract to Grant DAAH-04-96-1-0341 (S.S. Sastry, University of California, Berkeley, PI), *An Integrated Approach to Intelligent Systems*, 9/1996–8/1997. USD 38'000.
39. Principal Investigator, Semiconductor Research Corporation (SRC), Contract 95-DC-324.036, *A Unifying Framework for Computer-Aided Verification*, 1/1996–12/1996. USD 93'000.
40. Principal Investigator, National Science Foundation (NSF), Grant CCR-9504469, *Algorithms and Tools for the Automatic Analysis of Embedded Systems*, 9/1996–8/1998. USD 135'000.
41. Principal Investigator, National Science Foundation (NSF), Faculty Early Career Development Award, Grant CCR-9501708, *Computer-Aided Verification*, 8/1995–7/1999. USD 133'000.
42. Principal Investigator, Office of Naval Research (ONR), Young Investigator Award, Grant N00014-95-1-0520, *Algorithms and Tools for the Automatic Analysis of Embedded Systems*, 6/1995–5/1998. USD 235'000.
43. Principal Investigator, National Science Foundation (NSF), Grant GER-9454149, *Computational Aspects of Cognitive Science*, 9/1994–8/1999. USD 563'000.

44. Principal Investigator, Defense Advanced Research Projects Agency (DARPA), Subcontract to Grant NAG2-892 (Z. Manna, Stanford University, PI), *Software Development Technologies for Reactive, Real-Time, and Hybrid Systems*, 4/1994–3/1998. USD 453'000.
45. Principal Investigator, Hitachi Corporation, *Design of a Real-Time Control Language*, 2/1993–7/1993. USD 20'000.
46. Principal Investigator, Air Force Office of Scientific Research (AFOSR), Grant F49620-93-1-0056, *Automatic Methods and Tools for the Verification of Real-Time Systems*, 12/1992–11/1997. USD 441'000.
47. Principal Investigator, National Science Foundation (NSF), Grant CCR-9200794, *Reasoning about Real-Time Systems*, 8/1992–7/1995. USD 260'000.