Scott A. Smolka
Curriculum Vitae
Date of last update: 9-19-19

SUNY Distinguished Professor
Department of Computer Science
Stony Brook University
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Educational Background

1975 A.B., Boston University	Mathematics
1977 A.M., Boston University	Mathematics
1984 Ph.D., Brown University	Computer Science

Academic/Visiting Appointments

2016–	SUNY Distinguished Professor, Dept. Computer Science, Stony Brook Univ.
1995–2016	Professor, Dept. Computer Science, Stony Brook University
1988–1995	Associate Professor, Dept. Computer Science, Stony Brook University
1982–1988	Assistant Professor, Dept. Computer Science, Stony Brook University
1989	Visiting Faculty Researcher, Laboratory for Foundations of Computer Science, University of Edinburgh, UK (May–July)
1991	Visiting Professor, Programming Research Group, University of Amsterdam The Netherlands (Aug.–Sept.)
1989	Visiting Faculty Researcher, Dept. Software Technology, CWI, Amsterdam, The Netherlands (Oct.–Nov.)

Experience in Industry

1999–2009	President, Reactive Systems, Inc.
2009–	Director, Reactive Systems, Inc.
1993	Database Consultant, Allertek, Inc., East Rockaway, NY
1991	UNIX Consultant, Applied Digital Data Systems, Inc., Hauppauge, NY
1988	Consultant, Robotic Vision Systems, Inc., Hauppauge, NY
1987	Consultant, Meta Software Corporation, Cambridge, Mass.
1984	Visiting Faculty Researcher, IBM, Yorktown Heights, NY (summer)
1978	Programmer, National Bureau of Economic Research, Cambridge, Mass.
1977–1978	Scientific Analyst, Aerospace Systems, Inc., Burlington, Mass.

Honors and Awards

Name added to Stony Brook University's Faculty Honor Wall, July 2017.

Appointed SUNY Distinguished Professor, Nov. 2016.

EATCS (European Association for Theoretical Computer Science) Fellow for "fundamental contributions in formal modeling and analysis", since Feb. 2016.

Joint CONCUR-QEST-FORMATS 2016 Invited Speaker. Québec City, Canada, Aug. 2016.

Discretionary Award for Exceptional Contributions to Research, Department of Computer Science, Stony Brook University. Dec. 2014.

Research Excellence Award, Dept. of Computer Science, Stony Brook University. Aug. 2012.

Best Paper Award, 2nd International Conference on Runtime Verification (RV'11). Sep. 2011.

2008-2009 President/Chancellor's Award for Excellence in Scholarship and Creative Activities. Feb. 2009.

Computer Science Department Certificate of Appreciation for departmental, university and community service, especially my leadership role in CS@35, the day-long event/fundraiser celebrating the Computer Science Department's 35th anniversary. Aug. 2006.

Most Practical Paper Award, Seventh International Symposium on Practical Aspects of Declarative Languages (PADL 05). Jan. 2005.

Most downloaded paper from *Information & Computation* website during period Oct.--Dec. 2004.

20–Year University Service Award, February 2003.

Patents/Copyrighted Software

Co-Inventor on U.S. Patent No. 6,385,765 entitled "Specification and Verification for Concurrent Systems with Graphical and Textual Editors." Issued 5-7-02.

Wrote copyrighted software that serves as the enabling disclosure in U.S. patent application no. 08/088,136.

Service to the Profession

Lead PI and Director, *NSF CPS Frontier project: CyberCardia*, 2015-2020.
`http://cybercardia.cs.stonybrook.edu/`

Deputy Director, *NSF Expedition in Computing on Computational Modeling and Analysis for Complex Systems*, 2009-2015.

Co-Organizer, 2014 *National Workshop on Research Frontiers in Medical Cyber-Physical Systems*

Member of the Selection Committee for the 2014 *Bower Award and Prize for Achievement in Science*. The theme of the 2014 award was Verification of Computer Systems.

Steering Committee Member, *CONCUR — The International Conference on Concurrency Theory*.

Steering Committee Member, *ETAPS — European Joint Conferences on Theory & Practice of Software*, 2011-2014.

Steering Committee Member, *CPS V&V Industrial Challenges and Foundations Workshop.*

Member, IFIP Working Group 1.8 on Concurrency Theory.

Member Emeritus, IFIP Working Group 2.2, *Formal Description of Programming Concepts.*

Editorial Board Member of the following journals:

Logical Methods in Computer Science, Lars Birkedal, Editor-in-Chief.
Transactions on Computational Logic, Orna Kupferman, Editor-in-Chief, ACM Press.
Formal Methods in System Design, Daniel Kroening, Editor-in-Chief, Kluwer Press.
Software Tools for Technology Transfer, Bernhard Steffen & John Hatcliff, Editors-in-Chief, Springer.

Program Committee Chair/Co-Chair of the following conferences:

FEVER 2017, CAV-affiliated Workshop on Formal approaches to Explainable VERification
RV 2014, Fourth International Conference on Runtime Verification
SPIN 2013, First International Symposium on Model Checking of Software (General Chair). SPIN 2013 marked the 20th Anniversary of the International SPIN Workshop.
TACAS 2013, 19th Intl. Conf. on Tools & Algorithms for Construction and Analysis of Systems
INFINITY 2005, 7th International Workshop on Verification of Infinite-State Systems
PROCOMET 1998, IFIP Working Conference on Programming Concepts and Methods (Organizing Chair)
Concurrency Working Group Chair, ACM 50th Anniversary Workshop on Strategic Directions in Computing Research
CONCUR 1995, 6th International Conference on Concurrency Theory
CONCUR 1992, 3rd International Conference on Concurrency Theory (Organizing Chair)
PCK50, ACM Paris Kanellakis Memorial Workshop, 2003.
First International School on Formal Methods, 2001.

Program Committee Member for the following conferences:

RV 2019, 19th International Conference on Runtime Verification
FMICS 2019, 24th International Conference on Formal Methods for Industrial Critical System
MCPS 2019, Medical Cyber Physical Systems in Internet of Things Workshop
RV 2018, 18th International Conference on Runtime Verification
MCPS 2018, 8th International Workshop on Medical Cyber-Physical Systems
HSCC 2017, 20th International Conference on Hybrid Systems: Computation and Control
RV 2017, 17th International Conference on Runtime Verification
SPIN 2017, 24th International Symposium on Model Checking of Software
GaM 2017, Third Graphs as Models Workshop
CMSB 2016, 14th International Conference on Computational Methods in Systems Biology
RV 2016, 16th International Conference on Runtime Verification
TACAS 2015, 21st Intl. Conf. on Tools & Algorithms for Construction and Analysis of Systems
ATVA 2015, 13th International Symposium on Automated Technology for Verification and Analysis
NFM 2015, 7th NASA Formal Methods Symposium
ISoLA 2014, 6th Intl. Symp. Leveraging Applications of Formal Methods, Verification and Validation
MedicalCPS 2014, Fifth Medical Cyber-Physical Systems Workshop (part of CPSWeek 2014)
TACAS 2014, 20th Intl. Conf. on Tools & Algorithms for Construction and Analysis of Systems
RV 2013, Fourth International Conference on Runtime Verification
SSS 2013, 15th Intl. Symp. Stabilization, Safety, and Security of Distributed Sys.

HSB 2013, Second Workshop on Hybrid Systems and Biology
TACAS 2012, 18th Intl. Conf. on Tools & Algorithms for Construction and Analysis of Systems
SSS 2012, 14th International Symposium on Stabilization, Safety, and Security of Distributed Systems
HSB 2012, First International Workshop on Hybrid Systems and Biology
RV 2011, 11th International Conference on Runtime Verification
CMSB 2010, 8th International Conference on Computational Methods in Systems Biology
RV 2010, 10th International Conference on Runtime Verification
SSS 09, 11th Symposium on Stabilization, Safety and Security in Distributed Systems
CONCUR 08, 19th International Conference on Concurrency Theory
NETTAB 2008, Bioinformatics Methods for Biomedical Complex System Applications
FMWS 2008, Formal Methods for Wireless Systems
FBTC 2008, From Biology to Concurrency
FBTC 2007, From Biology to Concurrency
FOSSACS 2007, Foundations of Software Science and Computation Structures
QEST 2006, Third International Conference on Quantitative Evaluation of SysTems
SRV 2006, Second International Conference on Intelligent Computer Communication and Processing
ATVA 2005, Automated Technology for Verification and Analysis
FINCO 2005, Foundations of Interactive Computation
2003 Monterey Workshop on Software Engineering for Embedded Systems
CONCUR 02, 13th International Conference on Concurrency Theory
FORTE 2002, International Conference on Formal Techniques for Networked and Distributed Systems
PAPM-PROBMIV 2002, 2nd Joint International Workshop on Process Algebra and Performance Modelling and Probabilistic Methods in Verification
FORTE/PSTV 2000, Joint International Conference on Formal Description Techniques for Distributed Systems and Communication Protocols (FORTE XIII) and Protocol Specification, Testing and Verification
PAPM 2000, 8th International Workshop on Process Algebra and Performance Modelling
POPL '99, 26th ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages
FST&TCS '99, 19th Conference on Foundations of Software Technology and Theoretical Computer Science
ASIAN '98, 4th Asian Computing Science Conference
TACAS '97, Intl. Conf. on Tools & Algorithms for Construction and Analysis of Systems
Second International Workshop on Applied Formal Methods in System Design, Zagreb, 1997.
CAV'96, 8th International Conference on Computer Aided Verification
TACAS '96, 2nd Intl. Conf. on Tools & Algorithms for Construction and Analysis of Systems
CONCUR '96, 7th International Conference on Concurrency Theory
CONCUR '94, 5th International Conference on Concurrency Theory
CONCUR '91, 2nd International Conference on Concurrency Theory
1991 International Conference for Young Computer Scientists
ICDCS '92, 12th International Conference on Distributed Computing Systems
READPAC '92, First Workshop on Reliable and Dependable Parallel Computing

Panel Member/Moderator for the following panels:

NSF CPS Safety Panel, June 2015.
NSF Expeditions in Computing Panel, January 2008.
NSF Computing Processes & Artifacts Panel, January 2007.
NSF ITR Review Panel, January 2002.
NSF SBIR Phase II Review Panel, February 1996.
NSF Software Engineering and Languages Review Panel, Arlington, VA, November 1996.

NSF Research Initiation Awards Review Panel, Washington, DC, May 1993.
"Formal Methods: Are they Practical for Security." Griffiss Inst. Univ.-Industry Conference, Nov 2003.
"Protocol Verification: The Past Ten Years and the Next Ten Years," 10th International Symposium on Protocol Specification, Testing, and Verification, June 1990.
Panel Member, *NSF/DARPA Joint Initiative on Formal Methods in Software Engineering*, May 1990.

Referee for NSF, DARPA, AFOSR, ARO, Science Foundation of Ireland and numerous journals and conferences, including ACM Transactions on Programming Languages and Systems, IEEE Transactions on Computers, IEEE Transactions on Software Engineering, IEEE Transactions on Parallel and Distributed Systems, IEEE Software, IEEE Computer Magazine, Distributed Computing, IBM Research and Development, Information and Computation, Journal of Parallel and Distributed Computing, Science of Computer Programming, Software: Practice and Experience, Acta Informatica, Theoretical Computer Science, Electronic Notes in Theoretical Computer Science, Formal Aspects of Computing, Journal of Computer Systems and Science, ICDCS, LICS, MASCOTS, MFCS, and PSTV.

Service to the University and the Community

Faculty Marshall for Main Commencement, 2017.

Chair of the following committees:

Co-Chair of Search Committee for new chair of Computer Science Department, 2017-2018.
Selection Committee for Chancellor's Award for Excellence in Scholarship and Creative Activity, 2011-2015.
SPAC Task Force on the Oracle Application System, 2002–2005.
Computer Science Department Faculty Recruiting Committee, 1999–2000.
Committee on Undergraduate Computer Science Curriculum Reform, 1992-1995. This committee implemented an extensive revision of the computer science undergraduate curriculum. The new curriculum, which featured a required two-course sequence in software engineering, took effect in Spring 1995.
Computer Science Qualifying Exam Subcommittee on Software Systems, 1992-1993.

Member of the following committees:

Research Advisory Committee, Office of Vice President for Research, 2015–.
Personnel Policy Committee (for Promotion and Tenure), College of Engineering and Applied Sciences, 2012–2014.
Discretionary Salary Increases Committee for F/T and P/T Faculty, and Discretionary Salary Increases Committee for Non-Teaching Professionals, Department of Computer Science, 2014.
Planning Committee for President Stanley's Inauguration, 2009.
President's Committee for the celebration of the 50th anniversary of Stony Brook University, 2006–2007.
President's Faculty Advisory Council on the future of the University, 2004–2009.
Provost's Selection Committee for USB/BNL Seed Grant Program, 2002.
Computer Science Department's Operations Committee, 2002–2005.
Research Foundation's Sponsored Programs Advisory Council (SPAC), 2001–2004.
University Senate Research Committee, 2001–2004.
Computer Science Department Faculty Recruiting Committee, 2001.
Five Year Plan Task Force on Outreach and Entrepreneurship, 1999–2000.
Computer Science Department Faculty Recruiting Committee member, 1996-1998.

Computer Science Department Executive Committee member, 1993-1997.
Ad-Hoc Committee on Joint CEAS/Harriman Programs, 1995.
CEAS Curriculum and Teaching Policy Committee, 1994-1996.
Graduate Student Admissions Committee, Department of Computer Science, 1989-1991.
Mentoring Program, Office of Special Programs, 1989.
University Senate Committee on Computing and Communications, 1987-1990.
Committee on Academic Services, 1986-1987.
Computer Science Library Committee, 1986-1990.
Ad-Hoc Committee for the Formation of the Computer Science Library, 1985.
Member of CEAS Committee on Academic Standing and Appeals, 1985.

Advisor for the following programs:

Faculty Advisor for Freshmen, 1994-1996.
Transfer Student Advising, Spring and Summer 1994-1996.
Project WISE (Women in Science and Engineering) E-Mail/Internet Workshop for 30 high-achieving high school girls, Fall 1994.
URECA (Undergraduate Research and Creative Activities) advisor, 1991-1992.
University Undergraduate Admissions Recruiting Phone-a-thon participant, 1987, 1992, and 1997.
Academic Information Booth participant, 1987 and 1988.
SIP (Scholar Incentives Program) advisor, 1985-1986.

Faculty Instructor for College of Leadership & Service Freshman Seminar on Organ and Tissue Donation, and Faculty Advisor to Undergraduate Student Club on Organ Donation Awareness. From 2006-2012, students in the Seminar and Club organized and participated in the *Annual Donate Life Walk* around the campus mall to raise awareness for the need for organ donation.

Co-organizer, with Prof. Arie Kaufman, of the day-long event/fundraiser to celebrate Computer Science Department's 35th anniversary, May 2005. `http://www.cs.sunysb.edu/cs@35/`

Invited participant in 21st Annual Student-Faculty-Staff Retreat, Nov. 2005.

Spearheaded effort to enroll SBU in Sec. of Health Tommy Thompson's Workplace Partnership for Life program, which offers the employees of participating organizations the opportunity to learn about, discuss, and make decisions concerning the donation of organs, tissue, marrow and blood; 2004.

Volunteer for New York Organ Donor Network, 2004–

Volunteer scorekeeper, ACUI College Bowl and Recreation Tournament, 2002.

Volunteer, Scooping Out Success Ice Cream Information Fair, 2002.

Organized WTC Memorial Lecture Series on Information Technology at Stony Brook Manhattan, 2002.

Founded, in Spring 2000, Automated Verification Laboratory with an equipment grant from Sun Microsystems in the amount of $21,423.

Judge representing the Computer Science Department, USB's First Celebration of Undergraduate Achievements, April 1999.

Computer Science Undergraduate Program Director, 1994-1996.

University Admissions Open House participant, Fall 1994.

Guest lecturer, BSE 102: Opportunities in Science and Engineering, Baruch College Dormitory for Science and Engineering, Spring 1994.

Faculty Marshal, CEAS graduation ceremony, 1994 and 1995.

Stony Brook University Percussion Ensemble, Prof. Raymond Des Roche, Director, 1985-1989.

Timpanist, Stony Brook University Concert Band and Undergraduate Orchestra, 1986-1989.

Invited Presentations (since 1990)

"Planning, Control, and Verification of Multi-Agent Autonomous Systems", Engineering Serendipity Seminar, March 2018.

"On the Resiliency of Adaptive-Horizon MPC: Resiliency in the CPS World." Security and Privacy Day, SUNY Global Center in NYC, Oct. 2017.

"V-Formation as Optimal Control." CONCUR-QEST-FORMATS Invited Presentation, Québec City, Canada, Aug. 2016.

"A Component-based Simplex Architecture for Mission-Critical Software." AFOSR Systems & Software Program Review, Arlington, VA, July 2016.

"Compositional, Approximate and Quantitative Reasoning for Medical Cyber-Physical Systems." NSF CPS PI Meeting, Arlington, VA, November 2015.

"Adaptive Runtime Verification and Recovery for Mission-Critical Software (ARRIVE)." AFOSR Systems & Software Program Review, Arlington, VA, July 2015.

"Linear Model Measurements with Application to Bird Flocking." Clarke Symposium 2014: Celebrating 2^5 Years of Model Checking, Pittsburgh, PA, September 2014.

"Adaptive Runtime Verification." AFOSR Software and Systems Program Review Meeting, Washington, DC, November 2012.

"Runtime Verification with State Estimation." AFOSR Software and Systems Program Review Meeting, Arlington, VA, October 2011.

"Aspect-Oriented Program Instrumentation for GCC." AFOSR Software and Systems Program Review Meeting, Arlington, VA, May 2010.

"Software Monitoring with Controllable Overhead." Safe & Secure Systems & Software Symposium – S5, Beaverton, OH, June 2010.

"Learning and Detecting Emergent Behavior in Networks of Cardiac Myocytes." Kickoff Meeting, NSF Expedition on Computational Modeling and Analysis for Complex Systems, Pittsburgh, PA, October 2009.

"Survivable Software." AFOSR Systems and Software Program Review Meeting, Arlington, VA,

May 2009.

"Approximate Behavioral Equivalences: A Historical Perspective" (with Franck van Breugel). Workshop on Approximate Behavioural Equivalences, Toronto, Canada, August 2008.

"Uppaal-Based Model Checking of Timed Input/Output Automata." MIT, Cambridge, MA, April 2007.

"Efficient Modeling of Excitable Cells Using Hybrid Automata." UCLA, Los Angeles, CA, Sept. 2005.

"Monte Carlo Model Checking of Timed Automata." MIT, Cambridge, MA, Feb. 2005.

"Quantitative Model Checking." University of Minnesota, Minneapolis, MN, July 2004.

"Testing and Verification of Embedded Control Software." Guidant Corporation, St. Paul, MN, July 2004.

"Randomized Model Checking." UCLA, Los Angeles, CA, July 2004.

"Monte Carlo Model Checking." Army Research Office Conference on High-Confidence Embedded Systems (HCES 2004). Philadelphia, PA, April 2004.

"Formal Methods: Are They Practical for Security?" Griffiss Institute Fall Conference, Panel Moderator. New Paltz, NY, Nov. 2003.

"Specification and Verification of the CARA Infusion Pump Control Software." Army Research Office Conference on High-Confidence Embedded Systems. Atlanta, GA, May 2002.

"Probabilistic Process Algebra." First International School on Formal Methods for the Design of Computer, Communication and Software Systems, Bertinoro, Italy, July 2001.

"Turing Machines, Transition Systems, and Interaction," U. Mass./Boston, March 2001.

"Probabilistic Methods in Specification and Verification," Brown University, Providence, RI, Dec. 1999.

"Recent Developments in the Concurrency Factory," Oregon Graduate Institute, Portland, OR, March 1998.

"Faster Model Checking in the Modal Mu-Calculus," Second NSF/CNPq Workshop on Formal Foundations of Software Systems, New Orleans, November 1997.

"Partial-Order Reduction in the Weak Modal Mu-Calculus," Eighth International Conference on Concurrency Theory (CONCUR '97), Warsaw, Poland, July 1997.

"Specification and Verification of Probabilistic and Real-Time Concurrent Systems," ARPA PI meeting, San Diego, CA, Jan. 1996.

"Probabilistic I/O Automata: Theory and Practice," Department of Computer Science, Brown University, Dec. 1994.

"Parallel Algorithms for the Verification of Concurrent Systems," Department of Computer Science, New York University, Oct. 1994.

"Semantic Theories and Automated Tools for Real-Time and Probabilistic Concurrent Systems," AFOSR Contractors Meeting, Bolling Air Force Base, Washington, DC, Sept. 1994.

"The Parallel Complexity of Bisimulation and Model Checking," IFIP Working Group 2.2, *Formal Description of Programming Concepts*, San Miniato, Italy, June 1994.

"The Concurrency Factory — Practical Tools for Specification, Simulation, Verification, and Implementation of Concurrent Systems," *DIMACS Workshop on Specification of Parallel Algorithms*, Princeton, NJ, May 1994.

"The Parallel Complexity of Bisimulation and Model Checking," *Three Days of Bisimulation*, Amsterdam, the Netherlands, April 1994.

"Incremental Model Checking in the Modal Mu-Calculus," Dagstuhl Seminar on Algorithms in Automata Theory, Saurbrucken, Germany, Feb. 1994.

"Specifying and Debugging Concurrent Systems Graphically," Department of Philosophy, University of Utrecht, the Netherlands, Feb. 1994.

"A Comprehensive Study of the Complexity of Multiparty Interaction," IFIP Working Group 2.2, *Formal Description of Programming Concepts*, Hamilton, Ontario, Canada, June 1993.

"Axiomatizing Probabilistic Processes: ACP with Generative Probabilities," CUNY Graduate Center, New York, NY, Nov. 1992.

"Parallel Programming with Process Algebra," *ONR Workshop on Domain-Specific Massive Parallelism*, Los Angeles, CA, May 1992.

"Probabilistic Process Algebra," *CONCUR Review Meeting*, Edinburgh, U.K., September, 1991.

"Axioms for Generative and Stratified Processes," Department of Informatics, RWTH Aachen, Germany, Aug. 1991.

"The Concurrency Factory — Practical Tools for the Specification and Verification of Concurrent Systems," *SICS Workshop on Methodologies and Tools for Design of Distributed Systems*, Naesslingen, Sweden, August 1990.

External Funding

Title: NSF CCF-1918225, "FMitF: Track I: NLP-Assisted Formal Verification of the NFS Distributed File System Protocol", Co-Principal Investigator with Erez Zadok (PI) and Niranjan Balasubramanian, $748,300, from 10-1-19 to 9-30-22.

NSF CPS-1446832, "CPS: Frontiers: Collaborative Research: Compositional, Approximate, and Quantitative Reasoning for Medical Cyber-Physical Systems", Lead Investigator (Radu Grosu and James Glimm, Co-Principal Investigators), $1,222,305, from 5-1-15 to 4-30-20.

NSF IIS-1447549, "Big Data Modeling and Analysis with Depth and Scale", Co-Principal Investigator with C.R. Ramakrishnan (PI), I.V. Ramakrishnan, Maureen O'Leary, Annie Liu, and David S. Warren, $1,704,084, from 8-1-14 to 7-31-18.

AFOSR FA9550-14-1-0261, "Adaptive Runtime Verification and Recovery for Mission-Critical

Software", Principal Investigator (Scott D. Stoller and Erez Zadok, Co-Principal Investigators), $620,861, from 8-1-14 to 7-31-17.

NSF CNS-1445770 Scholar-in-Residence at FDA, "Closed-Loop Formal Verification of ICDs Using Cardiac Electrophysiological Models", Principal Investigator, $162,122, from 10-15-14 to 10-14-17.

NSF CNS-1430010, "2014 CPS Medical Devices Workshop Travel Subsidies", Principal Investigator, $62,874, from 3-15-14 to 2-28-15.

AFRL, "Formal Verification of Quasi-Synchronous Systems", Principal Investigator, $100,000, from 1-1-13 to 9-30-14.

NASA NNX12AN15H, "GPGPU Parallel SPIN Model Checker", Principal Investigator, NASA Space Technology Research Fellowship (Student: Richard DeFrancisco), $127,617, from 8-1-12 to 7-31-16.

NSF CCF-1018459, "Probabilistic Tabled Logic Programming", Co-Principal Investigator with C.R. Ramakrishnan (PI), I.V. Ramakrishnan, and David S. Warren, $500,000, from 9-1-10 to 8-31-13.

NSF CCF-0926190, "NSF Expedition in Computing: Next-Generation Model Checking and Abstract Interpretation With a Focus on Embedded Control and Systems Biology", Principal Investigator (James Glimm and Radu Grosu, Co-Principal Investigators), $1,900,000, from 9-2-09 to 8-31-14.

AFOSR FA0550-09-1-0481, "Survivable Software", Principal Investigator (Radu Grosu, Scott Stoller and Erez Zadok, Co-Principal Investigators), $881,690, from 6-1-09 to 11-30-12.

AFRL SBIR Phase III Award, "Run Time Assurance Framework Development for Highly Adaptive Flight Control Systems", Principal Investigator (Scott Stoller, Co-Principle Investigator), $400,000 subcontract to Barron Associates Inc., from 9-18-12 to 9-30-14.

CEWIT Seed Grant, "Model-Based Learning, Analysis and Control of Excitable Cells", Co-Principal Investigator with Emilia Entcheva (PI), Radu Grosu, and I.V. Ramakrishnan, $9,000, from 7-15-07 to 7-14-08.

NSF CNS-0509230, "Runtime Monitoring and Model Checking for High-Confidence System Software", Co-Principal Investigator with Radu Grosu (PI), Annie Liu, Scott Stoller and Erez Zadok, $830,000, from 7-1-05 to 6-30-09.

NSF CCF-0523863, "Efficient Modeling of Excitable Cells Using Hybrid Automata", Co-Principal Investigator with Emilia Entcheva (PI) and Radu Grosu, $300,000, from 7-15-05 to 7-14-09.

Navy STTR Phase II Contract No. FA9550-04-C-0084, "A Framework for Modeling and Analyzing Complex Distributed Systems", Co-Principal Investigator with Radu Grosu, PI: Nancy Lynch (MIT), and Alex Shvartsman (UConn), $750,000, from 9-1-05 to 8-31-08.

NSF ITR (Information Technology Research), CCR-0205376, "Model Checking for Detecting Computer System Vulnerabilities", Co-Principal Investigator with C.R. Ramakrishnan (PI), I.V. Ramakrishnan, R. Sekar, and Scott Stoller, $925,000, from 9-1-02 to 8-31-05.

ONR N000140110967, DOD University Research Initiative (URI) award in the area of Critical Infrastructure Protection (CIP), "Model-Carrying Code: A New Paradigm for Mobile Code Security", Co-Principal Investigator with C.R. Ramakrishnan (PI), I.V. Ramakrishnan and R. Sekar, $1,548,926, from 7-9-01 to 7-8-04.

ARO DAAD190110003, "An Integrated Environment for Control Software Engineering", Principal Investigator with Co-PIs Rance Cleaveland and Eugene Stark, $365,000, from 11-20-00 to 11-19-04.

ARO DAAD190110019, "Advanced Formal Methods for Reactive Systems Engineering" Co-Principal Investigator with Rance Cleaveland (PI) and Eugene Stark, $408,000, from 2-1-01 to 1-31-05.

NSF CCR-9988155, "Compositional Techniques for Verification and Performance Analysis of Reactive Probabilistic Systems", Co-Principal Investigator with Eugene Stark (PI), $248,495, from 7-1-00 to 6-30-03.

NSF DMI-0091499 (SBIR Phase II Award), "Advanced Formal Techniques for Dependable Reactive Systems", Co-Principal Investigator with Rance Cleaveland (PI) and Steven Sims, $499,890, from 3-15-01 to 2-28-03. NSF SBIR Phase II funding awarded to Reactive Systems, Inc.

NSF DMI-9961012 (SBIR Phase I Award), "Advanced Formal Methods for Dependable Reactive Systems", Co-Principal Investigator with Rance Cleaveland (PI) and Steven Sims, $99,726, from 1-1-00 to 6-30-00. NSF SBIR Phase I funding awarded to Reactive Systems, Inc.

NSF EIA-9818342, "A Cluster-Based Network Memory Server" (one of eight co-PIs), $140,000, from 1-1-99 to 12-31-01.

NSF EIA-9805735, "CISE PostDoc: Beyond Finite State Model Checking in LMC", Co-Principal Investigator with C.R. Ramakrishnan (PI), I.V. Ramakrishnan, and David S. Warren, $66,000, from 9-1-98 to 8-31-01.

NSF CCR-9705998, "LMC: A System for the Specification and Evaluation of Logic-Based Model Checking", Co-Principal Investigator with C.R. Ramakrishnan (PI), I.V. Ramakrishnan, and David S. Warren, $1,224,112, from 7-1-97 to 6-30-01.

AFOSR F49620-96-1-0087, "Compositional Analysis of Expected Delay in Networks of Automata", Co-Principal Investigator with Eugene Stark (PI) and Stephanie White of Northrop Grumman, $296,689, from 3-15-96 to 3-14-99.

NSF CCR-9505562, "Practical Techniques for the Design, Specification, Verification, and Implementation of Concurrent Systems", Co-Principal Investigator with Rance Cleaveland (PI) and Philip M. Lewis, $308,703, from 3-1-96 to 2-28-99.

NSF CCR-9529068, "CONCUR '95 — Sixth International Conference on Concurrency Theory", Co-Principal Investigator with Insup Lee (PI) of U. Penn), $7,500, from 9-1-95 to 2-29-96.

AFOSR F49620-95-1-0508, "Advanced Formal Methods for Critical Systems Software" Co-Principal Investigator with Rance Cleaveland of N.C. State (PI), Insup Lee of U. Penn, and Philip M. Lewis, $1,220,000, from 8-15-95 to 8-14-98.

NSF CDA-9303181, "PROUD — Parallel Resources On Users Desks" (one of ten PIs), $2M (includes university matching), 8-1-93 to 7-31-98.

Commission of the European Communities, Human Capital and Mobility project No. ERB4050PL930392, "EXPRESS — Expressiveness of Languages for Concurrency" (one of four external PIs, along with six PIs and four associate PIs), 470,000 ECU, from 10-1-93 to 9-30-96.

NSF CCR-9311650, "CONCUR '93 — Fourth International Conference on Concurrency Theory," Principal Investigator, $12,577, from 8-15-93 to 7-31-94.

AFOSR F49620-93-1-0250, "Semantic Theories and Automated Tools for Real-Time and Probabilistic Concurrent Systems," Principal Investigator, $164,554, from 4-1-93 to 3-31-96.

Brookhaven National Lab, Graduate Student Research Program, Principal Investigator, $16,200, from 8-1-92 to 5-31-93.

NSF CCR-9120995, "OSP++: Object-Oriented Courseware for Operating System Projects," REU supplement with Michael Kifer, $10,000, from 8-16-93 to 2-28-95.

NSF CCR-9208585, "Algebraic Reasoning for Probabilistic and Real-Time Concurrent Systems," Principal Investigator, $275,691, from 6-1-92 to 5-31-95.

NSF CCR-9120995, "The Concurrency Factory — Practical Tools for the Design and Verification of Concurrent Systems", Co-Principal Investigator with Rance Cleaveland (PI) and Philip M. Lewis, $518,893, from 3-1-92 to 2-28-95.

NSF CCR-9201450, "CONCUR '92 — Third International Conference on Concurrency Theory", Co-Principal Investigator with Rance Cleaveland (PI), $11,660, from 1-15-92 to 12-31-92.

NSF CCR-9102159, "OSP: An Environment for Operating System Projects" REU (Research Experience for Undergraduates) supplement with Michael Kifer, $15,000, 1-1-91 to 12-31-92.

NSF Institutional Infrastructure grant CDA-8822721, "ACTIVE: Animated Color Three-D Interactive Visualization Environments" (one of 14 PIs), $1,000,000, 1-1-89 to 12-31-92.

Addison-Wesley Publishing Company, "OSP: An Operating Systems Project" (Co-Principal Investigator with Michael Kifer), $10,551, 1988.

Meta Software Corporation, "Graduate Student Research Program," Principal Investigator, $5,561, 1988.

NSF CCR-8704309, "Integrated Environments for Formally Based Design and Simulation of Concurrent Systems: A Non-Procedural Approach", Co-Principal Investigator with Alessandro Giacalone (PI), $268,980 (includes 1988-1989 supplement of $32,984), 1987-1990.

NSF CCR-8705079, "Engineering Research Equipment Grant: Multiprocessor Vision System" (Co-Principal Investigator), $100,000, 1987-1988.

NSF DCR-8505873, "Livelock, Lockout and Liveness in Networks of Communicating Processes" (Principal Investigator), $80,913, 1985-1987.

NSF DCR-8504838, "Equipment for Computer Research – Lisp Machines Acquisition"

(Co-Principal Investigator), $121,796, 1985-1986.

Ph.D. Students Advised

Student	Date	Dissertation Title	Current Affiliation
Shaji Bhaskar	9/91	*Computations in Anonymous Networks*	Bell Northern Research, Research Triangle Park, NC
Yuh-Jzer Joung	2/92	*On the Design and Implementation of Multiparty Interaction*	Professor & Assoc. Dean, National Taiwan University
Chi-Chang Jou	12/92	*Aspects of Probabilistic Process Algebra*	AT&T Bell Labs, Middletown, NJ
Shipei Fred Zhang	5/95	*Topics in the Specification and Verification of Concurrent Systems*	Morgan Stanley, New York, NY
Sue-Hwey Wu	5/96	*Probabilistic I/O Automata and Performance Evaluation*	AT&T
Oleg Sokolsky	5/96	*Efficient Graph-Based Algorithms for Model Checking in the Modal Mu-Calculus*	Research Professor, University of Pennsylvania
Xiaoqun Du	8/00	*Tabled Resolution and Constraints for Model Checking Real-Time and Infinite-State Systems*	Cadence Design Systems/Bell Labs
Yifei Dong	5/03	*Practical Tools for the Specification and Verification of Concurrent Systems*	Professor, University of Oklahoma
Samik Basu	12/03	*Constraint-Based Abstraction Techniques for Software Verification*	Professor, Iowa State University
Ping Yang	12/04	*Logic Programming for Mobile Processes*	Associate Professor, SUNY Binghamton
Pei Ye	8/08	*Efficient Modeling and Analysis of Excitable Cells Using Hybrid Automata*	Electro-Optical Sciences
Anu Singh	5/09	*Modeling and Verification Techniques for Ad Hoc Network Protocols*	Google
Xiaowan Huang	5/10	*Compiler-Assisted Software Model Checking and Monitoring*	Ask.com
Tushar Deshpande	8/13	*Formal Analysis of DNS Attacks and Their Countermeasures Using Probabilistic Model Checking*	CA Technologies
Abhishek Murthy	8/14	*Computational Modeling and Analysis of Cardiac Excitation*	Philips Research
Md Ariful Islam	5/16	*Formal Verification of Nonlinear Biological Systems*	Assistant Professor, Texas Tech
Junxing Yang	8/17	*Optimal Safe Planning and Control for Collective Autonomous Systems*	NIO

Dung Phan	8/18	*Advances in Safety Assurances for Cyber-Physical Systems*	Aramco Research Center, Houston, TX
Richard Defrancisco	5/19	*Swarm Model Checking on the GPU*	TBD

Post-Doctoral Students

Nicola Paoletti, Ph.D., University of Camerino, Italy, 2016–2018.

Greg Byrne, Ph.D., George Mason University, 2015–2016.

Ezio Bartocci, Ph.D., University of Camerino, Italy, 2010-2012.

Steven Sims, Ph.D., North Carolina State University, 1999.

Denis Roegel, Ph.D., University of Nancy, France, 1997.

K. Narayan Kumar, Ph.D., TIFR – University of Bombay, India, 1997.

Xinxin Liu, Ph.D., Aalborg University, Denmark, 1996-1997.

Y.S. Ramakrishna, Ph.D., University of California at Santa Barbara, 1995-1997.

Shoji Yuen, Ph.D., Nagoya University, 1993-1994.

Books

1. Michael Kifer and Scott A. Smolka, *Introduction to Operating System Design and Implementation: The OSP 2 Approach*, Springer-Verlag, Series: Undergraduate Topics in Computer Science (2007). Reprinted in Chinese in 2009.

2. Nir Piterman and Scott A. Smolka (Eds.), *Tools and Algorithms for the Construction and Analysis of Systems, Proceedings of 19th International Conference, TACAS 2013*, Held as Part of European Joint Conferences on Theory and Practice of Software, ETAPS 2013, Lecture Notes in Computer Science, Volume 7795, Springer, Rome, Italy (March 2013).

3. Dina Q. Goldin, Scott A. Smolka, and Peter Wegner (Eds.), *Interactive Computation: The New Paradigm*, Springer-Verlag, 2006.

4. Scott A. Smolka and Jiří Srba (Eds.), *Proceedings of the Seventh International Workshop on Verification of Infinite-State Systems (INFINITY '05)*, Electronic Notes in Theoretical Computer Science, Volume 149, Number 1 (Feb. 2006).

5. Dina Q. Goldin, Alex A. Shvartsman, Scott A. Smolka, Jeffrey S. Vitter, and Stan B. Zdonik (Eds.), *Proceedings of the Paris C. Kanellakis Memorial Workshop on Principles of Computing & Knowledge*, ACM Press, New York (2003).

6. Jan Bergstra, Alban Ponse, and Scott A. Smolka (Eds.), *The Handbook of Process Algebra*, Elsevier Science B.V., Amsterdam, 1,342 pp. (2001).

7. Michael Kifer and Scott A. Smolka, *OSP: An Environment for Operating System Projects*, Addison-Wesley, Reading, MA (1991). A separate *Instructor's Version* has also been published by Addison-Wesley.

8. Scott A. Smolka and Insup Lee (Eds.), *CONCUR '95: Concurrency Theory, 6th International Conference*, Lecture Notes in Computer Science, Volume 962, Springer-Verlag, Berlin (1995).

Journal Publications

1. N. Paoletti, K. S. Liu, H. Chen, S. A. Smolka, and S. Lin, "Data-Driven Robust Control for a Closed-Loop Artificial Pancreas." *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, pp. 1-13, 2019.

2. H. Abbas, A. Rodionova, K. Mamouras, E. Bartocci, S. A. Smolka, and R. Grosu, "Quantitative Regular Expressions for Arrhythmia Detection." *IEEE Transactions on Computational Biology and Bioinformatics*. To appear 2019.

3. Md. A. Islam, R. Cleaveland, F. H. Fenton, R. Grosu, P. L. Jones, and S. A. Smolka, "Probabilistic Reachability for Multi-Parameter Bifurcation Analysis of Cardiac Alternans." *Theoretical Computer Science*. Available online 12 Feb 2018.

4. D. Phan, J. Yang, R. Grosu, S. A. Smolka, and S. D. Stoller, "Collision Avoidance for Mobile Robots with Limited Sensing and Limited Information about Moving Obstacles." *Formal Methods in System Design*, Springer (Jan. 2017).

5. A. Murthy, Md. A. Islam, S. A. Smolka, and R. Grosu, "Computing Compositional Proofs of Input-to-Output Stability Using SOS Optimization and δ-Decidability." *Nonlinear Analysis: Hybrid Systems*, Elsevier. Available online 14 May 2016.

6. G. Chatzieleftheriou, B. Bonakdarpour, P. Katsaros, and S. A. Smolka, "Abstract Model Repair." *Logical Methods in Computer Science*, Vol. 3:11 (2015).

7. Md. A. Islam, A. Murthy, E. Bartocci, E. M. Cherry, F. H. Fenton, J. Glimm, S. A. Smolka, and R. Grosu, "Model-Order Reduction of Ion Channel Dynamics Using Approximate Bisimulation." *Theoretical Computer Science*, Vol. 599C, pp. 34-46, (Sept. 2015).

8. A. Murthy, E. Bartocci, F. Fenton, J. Glimm, R. Gray, E. M. Cherry, S. A. Smolka, and R. Grosu, "Curvature Analysis of Cardiac Excitation Wavefronts." *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, Vol. 10, No. 2, pp. 323-336 (March-April 2013).

9. A. Gorlin, C. R. Ramakrishnan, and S. A. Smolka, "Model Checking with Probabilistic Tabled Logic Programming." *Theory and Practice of Logic Programming*, Vol. 12, No. 4-5, pp. 681-700, Cambridge University Press (Sept. 2012).

10. X. Huang, J. Seyster, S. Callanan, K. Dixit, R. Grosu, S. A. Smolka, S. D. Stoller, and E. Zadok. "Software Monitoring with Controllable Overhead." *International Journal on Software Tools for Technology Transfer*, Vol. 14, Issue 3, pp. 327-347, Springer-Verlag (June 2012).

11. J. Seyster, K. Dixit, X. Huang, R. Grosu, K. Havelund, S. A. Smolka, S. D. Stoller, and E. Zadok, "InterAspect: Aspect-Oriented Instrumentation with GCC." *Formal Methods in System Design*, Vol. 41, No. 3, pp. 295-320, Springer (Dec. 2012).

12. E. Bartocci, R. Singh, F. von Stein, A. Amedome, A.-J. Caceres, J. Castillo, E. Closser, G. Deards, A. Goltsev, R. Sta. Ines, C. Isbilir, J. Marc, D. Moore, D. Pardi, S. Sadhu, S. Sanchez, P. Sharma, A. Singh, J. Rogers, A. Wolinetz, T. Grosso-Applewhite, K. Zhao, A. Filipski, R. F. Gilmour Jr, R. Grosu, J. Glimm, S. A. Smolka, E. M. Cherry, E. M. Clarke, N. Griffeth, and F. H. Fenton, "Teaching Cardiac Electrophysiology Modeling to Undergraduate Students: Using Java Applets and GPU Programming to Study Arrhythmias and Spiral-Wave Dynamics." *American Journal of Advances in Physiology Education*, Vol. 35, pp. 427-437, American Physiological Society (Dec. 2011).

13. X. Huang, A. Singh, and S. A. Smolka, "Using Integer Clocks to Verify Clock-Synchronization Protocols." *Innovations in Systems and Software Engineering*, Special Issue on NASA Formal Methods Symposium 2010, Vol. 7, Issue 2, pp. 119-130 (June 2011).

14. A. Singh, C. R. Ramakrishnan and S. A. Smolka. "A Process Calculus for Mobile Ad Hoc Networks." *Science of Computer Programming*, Vol. 75, Issue 6, pp. 440-469 (June 2010).

15. E. Bartocci, F. Corradini, M. R. Di Berardini, E. Entcheva, S. A. Smolka and R. Grosu. "Modeling and Simulation of Cardiac Tissue using Hybrid I/O Automata." *Theoretical Computer Science*. Vol. 410, No. 33, pp. 3149-3165 (August 2009).

16. R. Grosu, S.A. Smolka, F. Corradini, A. Wasilewska, E. Entcheva, and E. Bartocci, "Learning and Detecting Emergent Behavior in Networks of Cardiac Myocytes." *Communications of the ACM*, Vol. 53, No. 3, pp. 97-105 (March 2009).

17. P. Ye, E. Entcheva, S.A. Smolka and R. Grosu. "Modeling Excitable Cells Using Cycle-Linear Hybrid Automata." *Journal of IET Systems Biology*, Vol. 2, Issue 1, pp. 24-32 (January 2008).

18. E. Bartocci, F. Corradini, E. Entcheva, R. Grosu and S.A. Smolka. "CellExcite: An Efficient Simulation Environment for Excitable Cells." *BMC Bioinformatics*, **9**(Suppl 2):53 (March 2008).

19. S. Basu and S.A. Smolka, "Model Checking the Java Meta-Locking Algorithm." *ACM Transactions on Software Engineering and Methodology*. Vol. 16, Issue 3 (July 2007).

20. F. Moller, S.A. Smolka, and J. Srba, "On the Computational Complexity of Bisimulation, Redux." *Information and Computation*, Vol. 194, Issue 2, pp. 129-143 (November 2004).

21. D.Q. Goldin, S.A. Smolka, P.C. Attie, and E.L. Sonderegger, "Turing Machines, Transition Systems, and Interaction." *Information and Computation*, Vol. 194, Issue 2, pp. 101-128 (November 2004).

22. P. Yang, C.R. Ramakrishnan, and S.A. Smolka, "A Logical Encoding of the π-Calculus: Model Checking Mobile Processes Using Tabled Resolution." *International Journal on Software Tools for Technology Transfer* (STTT), Vol. 6, No. 1, pp. 38-66, Springer-Verlag (July 2004).

23. D. Hansel, R. Cleaveland, and S.A. Smolka, "Distributed Prototyping from Validated Specifications." *Journal of Systems and Software*, Vol. 70, Issue 3, pp. 275–298 (March 2004).

24. Y. Dong, X. Du, G.J. Holzmann and S.A. Smolka. "Fighting Livelock in the GNU i-Protocol: A Case Study in Explicit-State Model Checking." *International Journal on Software Tools for Technology Transfer (STTT)*, Vol. 4, No. 4, pp. 505–528, Springer-Verlag (August 2003).

25. A. Philippou, O. Sokolsky, R. Cleaveland, I. Lee, and S.A. Smolka, "Hiding Resources that Can Fail: An Axiomatic Perspective." *Information Processing Letters*, Special Issue on Process Algebra, Vol. 80, Issue 1, pp. 3-13 (October 2001).

26. X. Du, S.A. Smolka, and R. Cleaveland, "Local Model Checking and Protocol Analysis." *International Journal on Software Tools for Technology Transfer (STTT)*, Vol. 2, No. 3, pp. 219-241, Springer-Verlag (November 1999).

27. R. Cleaveland, Z. Dayar, S.A. Smolka, S. Yuen and A. Zwarico, "Testing Preorders for Probabilistic Processes." *Information and Computation*, Vol. 154, No. 2, pp. 93-148 (November 1999).

28. Y.-J. Joung and S.A. Smolka, "Strong Interaction Fairness via Randomization." *IEEE Trans. on Parallel and Distributed Systems*, Vol. 9, No. 2 (February 1998).

29. S.-H. Wu, S.A. Smolka and E. Stark, "Composition and Behaviors of Probabilistic I/O Automata." *Theoretical Computer Science*, Vol. 176, No. 1-2, pp. 1-38 (1997).

30. Y.-J. Joung and S.A. Smolka, "A Comprehensive Study of the Complexity of Multiparty Interaction." *Journal of the ACM*, Vol. 43, No. 1, pp. 75-115 (January 1996).

31. S.A. Smolka and B. Steffen, "Priority as Extremal Probability." *Formal Aspects of Computing*, Vol. 8, pp. 585-606 (1996).

32. R. Cleaveland and S.A. Smolka, "Strategic Directions in Concurrency Research." *ACM Computing Surveys*, Vol. 28, No. 4, pp. 607-625 (December 1996).

33. R. De Nicola and S.A. Smolka, "Concurrency: Theory and Practice." *ACM Computing Surveys*, Vol. 28, No. 4es, Article 52 (December 1996).
`http://www.acm.org./surveys/1996/DeNicolaPractice/`

34. R. van Glabbeek, S.A. Smolka, and B.U. Steffen, "Reactive, Generative, and Stratified Models of Probabilistic Processes." *Information and Computation*, Vol. 121, No. 1, pp. 59-80 (August 1995).

35. J.C.M. Baeten, J.A. Bergstra, and S.A. Smolka, "Axiomatizing Probabilistic Processes: ACP with Generative Probabilities." *Information and Computation*, Vol. 121, No. 2, pp. 234-255 (September 1995).

36. F. Moller and S.A. Smolka, "On the Complexity of Bisimulation." *ACM Computing Surveys*, Vol. 27, No. 2, pp. 287-289 (June 1995).

37. R. Gupta, S. Bhaskar, and S.A. Smolka, "On Randomization in Sequential and Distributed Algorithms," *ACM Computing Surveys*, Vol. 26, No. 1, pp. 7-86 (March 1994).

38. Y.-J. Joung and S.A. Smolka, "Coordinating First-Order Multiparty Interactions." *ACM TOPLAS*, Vol. 16, No. 3, pp. 954-985 (May 1994).

39. P.C. Kanellakis and S.A. Smolka, "CCS Expressions, Finite State Processes, and Three Problems of Equivalence," *Information and Computation*, Vol. 86, No. 1, pp. 43-68 (May 1990).

40. J. Reif and S.A. Smolka, "Data Flow Analysis of Distributed Communicating Processes," *International Journal on Parallel Programming* (Gary Lindstrom, Editor), Vol. 19, No. 1 (Feb. 1990).

41. J. Reif and S.A. Smolka, "The Complexity of Reachability in Distributed Communicating Processes," *Acta Informatica*, Vol. 25, pp. 333-354 (1988).

42. A. Giacalone and S.A. Smolka, "Integrated Environments for Formally Based Design and Simulation of Concurrent Systems: A Non-Procedural Approach," Special Issue on Integrated Software Engineering Environments, *IEEE Transactions on Software Engineering*, Vol. 14, No. 6, pp. 787-802 (June 1988).

43. P.C. Kanellakis and S.A. Smolka, "On the Analysis of Cooperation and Antagonism in Networks of Communicating Processes," Special Issue on Parallel and Distributed Computing, *Algorithmica*, Vol. 3, pp. 421-450 (1988).

44. S.A. Smolka and R.E. Strom, "A CCS Semantics for NIL," Special Issue on Formal Definition/Design of Computer Systems, *IBM Journal of Research and Development*, Vol. 31, No. 5, pp. 556-571 (Sept. 1987).

45. P. Wegner and S.A. Smolka, "Processes, Tasks, and Monitors: A Comparative Study of Concurrent Programming Primitives," *IEEE Transactions on Software Engineering*, Vol. 9, No. 4, pp. 446-462 (July 1983).

Refereed Conference Publications

1. L. Bortolussi, F. Cairoli, N. Paoletti, S. A. Smolka, and S. D. Stoller,"Neural Predictive Monitoring." *Proceedings of RV 2019, 19th International Conference on Runtime Verification*, Porto, Portugal. Vol. 11757, LNCS, Springer (Oct. 2019).

2. R. Defrancisco, S. Cho, M. Ferdman, and S. A. Smolka, "Swarm Model Checking on the GPU." *Proceedings of SPIN 2019: 24th International Symposium on Model Checking of Software*, Beijing, China (July 2019).

3. S. Gruenbacher, J. Cyranka, Md A. Islam, M. Tschaikowski, S. A. Smolka, and R. Grosu, "Under the Hood of a Stand-Alone Lagrangian Reachability Tool." *Proceedings of ARCH19, Sixth International Workshop on Applied Verification of Continuous and Hybrid Systems*, EPiC Series in Computing, volume 61, pp. 211–219 (July 2019).

4. H. Chen, N. Paoletti, S.A. Smolka, and S. Lin, "Committed Moving-Horizon Estimation for Meal Detection and Estimation in Type 1 Diabetes." *Proceedings of ACC 2019: American Control Conference*, Philadelphia, PA (July 2019).

5. N. Paoletti, Z. Jiang, Md A. Islam, H. Abbas, R. Mangharam, S. Lin, Z. Gruber, and S. A. Smolka,"Synthesizing Stealthy Reprogramming Attacks on Cardiac Devices." *Proceedings of ICCPS 2019, 10th ACM/IEEE International Conference on Cyber-Physical Systems*, Montreal, CA (April 2019).

6. A. Lukina, A. Tiwari, S. A. Smolka, and R. Grosu, "Distributed Adaptive-Neighborhood Control for Stochastic Reachability in Multi-Agent Systems." *Proceedings of SAC 2019, 34th ACM/SIGAPP Symposium On Applied Computing*, Intelligent Robotics and Multi-Agent Systems (IRMAS) track, Limassol, Cyprus (April 2019).

7. J. Cyranka, Md. A. Islam, S. A. Smolka, S. Gao, and R. Grosu, "Tight Continuous-Time Reachtubes for Lagrangian Reachability." *Proceedings of CDC 2018, 57th IEEE Conference on Decision and Control*, Miami Beach, FL (Dec. 2018).

8. D. Phan, N. Paoletti, T. Zhang, R. Grosu, S. D. Stoller, and S. A. Smolka, "Neural State Classification for Hybrid Systems." *Proceedings of ATVA 2018, 16th International Symposium on Automated Technology for Verification and Analysis*, Los Angeles, CA, US (Oct. 2018).

9. U. Mehmood, N. Paoletti, D. Phan, R. Grosu, S. Lin, S. D. Stoller, A. Tiwari, J. Yang, and S. A. Smolka, "Declarative vs Rule-based Control for Flocking Dynamics." *Proceedings of SAC 2018, 33rd ACM/SIGAPP Symposium On Applied Computing*, Pau, France (April 2018).

10. A. Tiwari, S. A. Smolka, L. Esterle, A. Lukina, J. Yang, and R. Grosu, "Resilient Control for Cyber-Physical Systems." *Proceedings of MT-CPS 2018, Third Workshop on Monitoring and Testing of Cyber-Physical Systems*, Porto, Portugal (April 2018).

11. F. Shmarov, N. Paoletti, E. Bartocci, S. Lin, S. A. Smolka, and P. Zuliani, "SMT-based Synthesis of Safe and Robust PID Controllers for Stochastic Hybrid Systems." *Proceedings of HVC 2017, 13th Haifa Verification Conference*, Haifa, Israel (Nov. 2017).

12. A. Tiwari, S. A. Smolka, L. Esterle, A. Lukina, J. Yang, and R. Grosu, "Attacking the V: On the Resiliency of Adaptive-Horizon MPC." *Proceedings of ATVA 2017, 15th International Symposium on Automated Technology for Verification and Analysis*, Pune, India (Oct. 2017). http://www.public.asu.edu/ cbaral/papers/sum11.pdf11-17

13. H. Abbas, A. Rodionova, E. Bartocci, S. A. Smolka, and R. Grosu, "Quantitative Regular Expressions for Arrhythmia Detection Algorithms." *Proceedings of* CMSB 2017, 16th International Conference on Computational Methods in Systems Biology, Darmstadt, Germany (Sept. 2017).

14. N. Paoletti, K. S. Liu, S. A. Smolka, and S. Lin, "Data-Driven Robust Control for Type 1 Diabetes Under Meal and Exercise Uncertainties." *Proceedings of* CMSB 2017, 16th International Conference on Computational Methods in Systems Biology, Darmstadt, Germany (Sept. 2017).

15. J. Cyranka, Md. A. Islam, G. Byrne, P. L. Jones , S. A. Smolka, and R. Grosu, "Lagrangian Reachability." *Proceedings of CAV 2017, 29th International Conference on Computer-Aided Verification*, Heidelberg, Germany (July 2017).

16. J. Yang, Md. A. Islam, A. Murthy, S. A. Smolka, and S. D. Stoller, "Simplex Architecture for Hybrid Systems using Barrier Certificates." *Proceedings of SAFECOMP 2017, 36th International Conference on Computer Safety, Reliability and Security*, Trento, Italy (Sept. 2017).

17. A. Lukina, L. Esterle, C. Hirsch, E. Bartocci, J. Yang, A. Tiwari, S. A. Smolka, and R. Grosu, "ARES: Adaptive Receding-Horizon Synthesis of Optimal Plans." *Proceedings of TACAS 2017: 23rd International Conference on Tools and Algorithms for the Construction and Analysis of Systems*, Uppsala, Sweden (Apr. 2017).

18. D. Phan, J. Yang, M. Clark, R. Grosu, J. D. Schierman, S. A. Smolka, and S. D. Stoller, "A Component-Based Simplex Architecture for High-Assurance Cyber-Physical Systems." *Proceedings of ACSD 2017: 17th International Conference on Application of Concurrency to System Design*, Zaragoza, Spain (June 2017).

19. Md. A. Islam, Q. Wang, E. M. Clarke, S. A. Smolka, R. Hsani, Radu Grosu, and O. Balun, "Probabilistic Reachability Analysis of the Tap Withdrawal Circuit in Caenorhabditis elegans." *Proceedings of HLDVT 2016: 18th IEEE International High-Level Design Validation and Test Workshop*, Santa Cruz, CA, IEEE Press (Oct. 2016).

20. Md. A. Islam, H. Lim, N. Paoletti, H. Abbas, Z. Jiang, J. Cyranka, W. R. Cleaveland, S. Gao, E. M. Clarke, R. Grosu, R. Mangharam, E. Cherry, F. H. Fenton, R. A. Gray, J. Glimm, S. Lin, Q. Wang, and S. A. Smolka, "The CyberCardia Project: Modeling, Verification and Validation of Implantable Cardiac Devices." *Proceedings of FMBBS 2016, Workshop on Formal Methods for Biological and Biomedical Systems*, in conjunction with *2016 IEEE Conference on Bioinformatics and Biomedicine*, Shenzhen, China (Dec. 2016).

21. C. Jegourel, A. Lukina, A. Legay, S. A. Smolka, R. Grosu, and E. Bartocci, "Feedback Control for Statistical Model Checking of Cyber-Physical Systems." *Proceedings of ISoLA*

2016, Eighth International Symposium on Leveraging Applications, Corfu, Greece, Lecture Notes in Computer Science, Springer (Oct. 2016).

22. Md. A. Islam, G. Byrne, S. Kong, E. M. Clarke, R Cleaveland, F. H. Fenton, R. Grosu, and S. A. Smolka, "Bifurcation Analysis of Cardiac Alternans using δ-Decidability." *Proceedings of CMSB 2016, 14th Conference on Computational Methods in Systems Biology*, Cambridge, UK (Sept. 2016).

23. J. Yang, R. Grosu, S. A. Smolka, and A. Tiwari, "Love Thy Neighbor: V-Formation as a Problem of Model Predictive Control (Extended Abstract)." *Proceedings of CONCUR 2016, 27th International Conference on Concurrency Theory*, Québec City, Canada (Aug. 2016).

24. D. Phan, J. Yang, D. Ratasich, R. Grosu, S. A. Smolka and S. D. Stoller, "Collision Avoidance for Mobile Robots with Limited Sensing and Limited Information about the Environment." *Proceedings of RV 2015, 15th International Conference on Runtime Verification*, Vienna, Austria (Sept. 2015).

25. K. Selyunin, D. Ratasich, E. Bartocci, Md. A. Islam, S. A. Smolka, and R. Grosu, "Neural Programming: Towards Adaptive Control in Cyber-Physical Systems." *Proceedings of CDC 2015, 54th IEEE Conference on Decision and Control*, Osaka, Japan (Dec. 2015).

26. Md. A. Islam, R. Defrancisco, C. Fan, R. Grosu, S. Mitra, and S. A. Smolka, "Model Checking Tap Withdrawal in C. Elegans." *Proceeding of HSB 2015, Fourth International Workshop on Hybrid Systems Biology*, Madrid, Spain (Sept. 2015).

27. A. Murthy, Md. A. Islam, S. A. Smolka, and R. Grosu, "Computing Bisimulation Functions using SOS Optimization and SMT: Opportunities and Pitfalls." *Proceeding of HSCC 2015, 18th International Conference on Hybrid Systems: Computation and Control*, Seattle, Washington, USA, ACM Press (April 2015).

28. Md. A. Islam, A. Murthy, A. Girard, S. A. Smolka, and R. Grosu, "Compositionality Results for Cardiac Cell Dynamics." *Proceeding of HSCC 2014, 17th International Conference on Hybrid Systems: Computation and Control*, Berlin, Germany, ACM Press (April 2014).

29. E. Bartocci, R. DeFrancisco, and S. A. Smolka, "Towards a GPGPU-Parallel SPIN Model Checker." *Proceedings of SPIN 2014, Third International SPIN Symposium on Model Checking of Software*, San Jose, CA, ACM Press (July 2014).

30. S. Bhattacharyya, S. P. Miller, J. Yang, S. A. Smolka, B. Meng, C. Sticksel, and C. Tinelli, "Verification of Quasi-Synchronous Systems with Uppaal." *Proceedings of DASC 2014, IEEE/AIAA 33rd Digital Avionics Systems Conference*, Colorado Springs, CO (Oct. 2014).

31. D. Peled, R. Grosu, C. R. Ramakrishnan, S. A. Smolka, S. D. Stoller, and J. Yang, "Using Statistical Model Checking for Measuring Systems." *Proceedings of ISoLA 2014, Sixth International Symposium on Leveraging Applications*, Corfu, Greece, Lecture Notes in Computer Science, Springer (Oct. 2014).

32. T. Deshpande, P. Katsaros, S. A. Smolka, and S. D. Stoller, "Stochastic Game-Based Analysis of the DNS Bandwidth Amplification Attack Using Probabilistic Model Checking."

Proceedings of EDCC 2014, 10th European Dependable Computing Conference, Newcastle upon Tyne, UK, IEEE Press (May 2014).

33. Md. A. Islam, T. Deshpande, A. Murthy, E. Bartocci, S. D. Stoller, S. A. Smolka, and R. Grosu, "Tracking Action Potentials of Nonlinear Excitable Cells using Model Predictive Control." *Proceedings of BIOTECHNO 2014, Sixth International Conference on Bioinformatics, Biocomputational Systems and Biotechnologies*, Chamonix, France, IARIA XPS Press (April 2014).

34. Md. A. Islam, A. Murthy, A. Girard, S. A. Smolka, and R. Grosu, "Compositionality Results for Cardiac Cell Dynamics." *Proceeding of HSCC 2014, 17th International Conference on Hybrid Systems: Computation and Control*, Berlin, Germany, ACM Press (April 2014).

35. K. Kalajdzic, E. Bartocci, S. A. Smolka, S. D. Stoller and R. Grosu, "Runtime Verification with Particle Filtering." *Proceedings of RV 2013, Fourth International Conference on Runtime Verification*, INRIA Rennes, France, Springer-Verlag, Lecture Notes in Computer Science (Sept. 2013).

36. A. Islam, A. Murthy, E. Bartocci, A. Girard, S. A. Smolka, and R. Grosu, "Compositionality Results for Cardiac Cell Dynamics." *Proceedings of CMSB'13, 11th Conference on Computational Methods in Systems Biology*, Klosterneuburg, Austria, Springer-Verlag, Lecture Notes in Computer Science, Sept. 2013 (Short paper).

37. E. Bartocci, R. Grosu, A. Karmarkar, S. A. Smolka, S. D. Stoller, E. Zadok and J. Seyster, "Adaptive Runtime Verification." *Proceedings of RV 2012, Third International Conference on Runtime Verification*, Istanbul, Turkey, Springer-Verlag, Lecture Notes in Computer Science (Sept. 2012).

38. A. Gorlin, C. R. Ramakrishnan, and S. A. Smolka, "Model Checking with Probabilistic Tabled Logic Programming." *Proceedings of ICLP 2012, 28th International Conference on Logic Programming*, Budapest, Hungary (Sep. 2012).

39. A. Murthy, A. Islam, E. Bartocci, E. Cherry, F. H. Fenton, J. Glimm, S. A. Smolka, and R. Grosu, "Approximate Bisimulations for Sodium Channel Dynamics." *Proceedings of CMSB 2012, 10th Conference on Computational Methods in Systems Biology*, London, UK, Springer, Lecture Notes in Computer Science (Oct. 2012).

40. A. Donzé, O. Maler, E. Bartocci, D. Nickovic, R. Grosu, and S. A. Smolka, "On Temporal Logic and Signal Processing." *Proceedings of ATVA 2012, 10th International Symposium on Automated Technology for Verification and Analysis*, Trivandrum, Kerala, Springer, Lecture Notes in Computer Science (Oct. 2012).

41. G. Chatzieleftheriou, B. Bonakdarpour, S. A. Smolka and P. Katsaros, "Abstract Model Repair." *Proceedings of NFM 2012, Fourth NASA Formal Methods Symposium*, pp. 341-355, Springer-Verlag, Lecture Notes in Computer Science, Vol. 7226, Norfolk, VA, (April 2012).

42. T. Deshpande, S. Basagiannis, P. Katsaros, and S. A. Smolka, "Formal Analysis of the DNS Bandwidth Amplification Attack and its Countermeasures Using Probabilistic Model

Checking." *Proceedings of HASE 2011, 13th IEEE International High Assurance Systems Engineering Symposium*, Boca Raton, FL, IEEE Computer Society (Nov. 2011).

43. S. D. Stoller, E. Bartocci, J. Seyster, R. Grosu, K. Havelund, S. A. Smolka and E. Zadok, "Runtime Verification with State Estimation." *Proceedings of RV 2011, Second International Conference on Runtime Verification*, San Francisco, US, Springer-Verlag, Lecture Notes in Computer Science (Sept. 2011).

44. E. Bartocci, E. M. Cherry, J. Glimm, R. Grosu, S. A. Smolka, and F.H. Fenton, "Toward Real-time Simulation of Cardiac Dynamics." *Proceedings of CMSB 2011, 9th International Conference on Computational Methods in Systems Biology*, Paris, France, ACM Press (Sept. 2011).

45. A. Murthy, E. Bartocci, F. Fenton, J. Glimm, R. Gray, S. A. Smolka, and R. Grosu, "Curvature Analysis of Cardiac Excitation Wavefronts." *Proceedings of CMSB 2011, 9th International Conference on Computational Methods in Systems Biology*, Paris, France, ACM Press (Sept. 2011).

46. R. Grosu, G. Batt, F. H. Fenton, J. Glimm, C. Leguernic, S. A. Smolka, and E. Bartocci, "From Cardiac Cells to Genetic Regulatory Networks." *Proceedings of CAV 2011, 23rd International Conference on Computer Aided Verification*, Snowbird, Utah, Springer-Verlag, Lecture Notes in Computer Science (July 2011).

47. Z. Li, R. Grosu, K. Muppalla, S. A. Smolka, S. D. Stoller, and E. Zadok, "Model Discovery for Energy-Aware Computing Systems." *Proceedings of ERSS 2011, First International Workshop on Energy Consumption and Reliability of Storage Systems*, Orlando, FL, IEEE Press (July 2011).

48. Z. Li, R. Grosu, P. Sehgal, S. A. Smolka, S. D. Stoller, and E. Zadok, "On the Energy Consumption and Performance of Systems Software." *Proceedings of SYSTOR 2011, Fourth Annual International Systems and Storage Conference*, Haifa, Israel, ACM Press (May 2011).

49. E. Bartocci, R. Grosu, P. Katsaros, C. R. Ramakrishnan, and S. A. Smolka, "Model Repair for Probabilistic Systems." *Proceedings of TACAS 2011, 17th International Conference on Tools and Algorithms for the Construction and Analysis of Systems*, Saarbrucken, Germany, Sprunger-Verlag, Lecture Notes in Computer Science, Vol. 6605, pp. 326-340 (March-April 2011).

50. N. Alexiou, T. Deshpande, S. Basagiannis, S. A. Smolka and P. Katsaros, "Formal Analysis of the Kaminsky DNS Cache-Poisoning Attack Using Probabilistic Model Checking." *Proceedings of HASE 2010, 12th IEEE International High Assurance Systems Engineering Symposium*, San Jose, CA, IEEE Computer Society (Nov. 2010).

51. J. Seyster, K. Dixit, X. Huang, R. Grosu, K. Havelund, S. A. Smolka, S. D. Stoller and E. Zadok, "Aspect-Oriented Instrumentation with GCC." *Proceedings of RV 2010, First International Conference on Runtime Verification*, Sliema, Malta, Springer-Verlag, Lecture Notes in Computer Science, Vol. 6418, pp. 405-420 (Nov. 2010).

52. X. Huang, A. Singh and S. A. Smolka, "Using Integer Clocks to Verify the Timing-Sync Sensor Network Protocol." *Proceedings of NFM 2010, Second NASA Formal Methods Symposium*, Washington D.C., NASA Conference Publication (April 2010).

53. A. Singh, C. R. Ramakrishnan and S. A. Smolka, "Query-Based Model Checking of Ad Hoc Network Protocols." *Proceedings of CONCUR 2009, the 20th International Conference on Concurrency Theory*, Pisa, Italy, Springer-Verlag, Lecture Notes in Computer Science, Vol. 5710, pp. 603-619 (Sep. 2009).

54. Z. Yang, B. Al-Rawi, K. Sakallah, X. Huang, S. A. Smolka and R. Grosu, "Dynamic Path Reduction for Software Model Checking." *Proceedings of iFM'09, the Seventh International Conference on Integrated Formal Methods*, Duesseldorf, Germany, Springer-Verlag, Lecture Notes in Computer Science, Vol. 5423, pp. 322-336 (Feb. 2009).

55. O. Riganelli, R. Grosu, S. R. Das, C. R. Ramakrishnan and S. A. Smolka, "Power Optimization in Fault-Tolerant Mobile Ad Hoc Networks." *Proceedings of the 11th IEEE High Assurance Systems Engineering Symposium (HASE'08)*, Nanjing, China, IEEE Press (Dec. 2008).

56. P. Ye, R. Grosu, S. A. Smolka and E. Entcheva. "Formal Analysis of Abnormal Excitation in Cardiac Tissue." *Proceedings of CMSB'08, the 6th International Conference on Computational Methods in Systems Biology*, Rostock, Germany, Springer, Lecture Notes in Bioinformatics (Oct. 2008).

57. R. Cleaveland, S. A. Smolka and S. T. Sims, "An Instrumentation-Based Approach to Controller Model Validation." *Model-Driven Development of Reliable Automotive Services*, Springer, LNCS 4922, pp. 84-97, (July 2008).

58. A. Singh, C. R. Ramakrishnan and S. A. Smolka, "A Process Algebra for Mobile Ad Hoc Networks." *Proceedings of Coordination 2008, the 10th International Conference on Coordination Models and Languages*, Oslo, Norway, Springer, LNCS Vol. 5052, pp. 296-314 (June 2008).

59. E. Bartocci, F. Corradini, R. Grosu, E. Merelli, O. Riganelli and S. A. Smolka. "StonyCam: A Formal Framework for Modeling, Analyzing and Regulating Cardiac Myocytes." *Concurrency, Graphs and Models*, Lecture Notes in Computer Science, Vol. 5065, Springer-Verlag, pp. 493-502 (June 2008).

60. P. Ye, E. Entcheva, S. A. Smolka and R. Grosu. "Symbolic Analysis of the Neuron." *Proceedings of ICBBE'08, the 2nd International Conference on Bioinformatics and Biomedical Engineering*, Shanghai, China, IEEE Press (May 2008).

61. R. Grosu, E. Bartocci, F. Corradini, E. Entcheva, S. A. Smolka and A. Wasilewska, "Learning and Detecting Emergent Behavior in Networks of Cardiac Myocytes." *Proceedings of HSCC'08, the 11th International Conference on Hybrid Systems: Computation and Control*, St. Louis, MO, Springer, LNCS Vol. 4981, pp. 229-243 (April 2008).

62. E. Bartocci, F. Corradini, M. R. Di Berardini, E. Entcheva, R. Grosu and S. A. Smolka. "Spatial Networks of Hybrid I/O Automata for Modeling Excitable Tissue." *Proceedings of*

FBTC'07, the International Workshop From Biology to Concurrency and Back, Lisbon, Springer, ENTCS Vol. 194(3), pp. 51-67 (September, 2007).

63. R. Grosu, S. Mitra, P. Ye, E. Entcheva, IV Ramakrishnan and S. A. Smolka, "Learning Cycle-Linear Hybrid Automata for Excitable Cells." *Proceedings of HSCC'07, the 10th International Conference on Hybrid Systems: Computation and Control*, Pisa, Italy, pp. 245-258, Springer, LNCS Vol. 4416 (April 2007).

64. S. Callanan, R. Grosu, J. Seyster, S. A. Smolka and E. Zadok. "Model Predictive Control for Memory Profiling." Proceedings of NSF NGS'07, Next Generation Software Workshop at IPDPS, Long Beach, California, pp. 1-7, IEEE Press (March 2007).

65. R. Grosu, X. Huang, S. A. Smolka, W. Tan and S. Tripakis. "Deep Random Search for Efficient Model Checking of Timed Automata." Proceedings of MW'06, 7th Monterey Workshop on Composition of Embedded Systems, Paris, France, pp. 37-48 (Oct. 2006).

66. E. W. Stark, R. Cleaveland, and S. A. Smolka. "Probabilistic I/O Automata: Theories of Two Equivalences." *Proceedings of 17th International Conference on Concurrency Theory (CONCUR 2006)*, Lecture Notes in Computer Science, Vol. 4137, pp. 343-357, Spring Verlag (Aug. 2006).

67. M. R. True, E. Entcheva, S. A. Smolka, P. Ye and R. Grosu. "Efficient Event-Driven Simulation of Excitable Hybrid Automata." *Proceedings of 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS 2006)*, IEEE Press (Aug. 2006).

68. P. Ye, E. Entcheva, S. A. Smolka, M. R. True and R. Grosu. "Hybrid Automata as a Unifying Framework for Modeling Cardiac Cells." *Proceedings of 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS 2006)*, IEEE Press (Aug. 2006).

69. P. Ye, E. Entcheva, S. A. Smolka, M. R. True and R. Grosu. "A Cycle-Linear Approach to Modeling Action Potentials." *Proceedings of 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS 2006)*, IEEE Press (Aug. 2006).

70. S. Callanan, R. Grosu, A. Rai, S. A. Smolka, M. R. True and E. Zadok. "Runtime Verification for High-Confidence Systems: A Monte Carlo Approach." *Proceedings of Second International Workshop on Model Based Testing (MBT 2006)*, (March 2006).

71. S. Callanan, R. Grosu, X. Huang, S. A. Smolka and E. Zadok. "Compiler-Assisted Software Verification Using Plug-Ins." Proceedings of NGS'06, Next Generation Software Workshop at IPDPS, Rhodes Island, Greece, pp. 8-15, IEEE Press (April 2006).

72. R. Grosu and S. A. Smolka. "Monte Carlo Methods for Process Algebra." Proceedings of International Workshop on Algebraic Process Calculi: The First Twenty Five Years and Beyond, Bertinoro, Italy, ENTCS Vol. 162, pp. 203-207 (Sep. 2006).

73. R. Grosu, X. Huang, S. Jain, and S. A. Smolka. "Open-Source Model Checking." *Proceedings of SoftMC 2005: Workshop on Software Model Checking*, Electronic Notes in Theoretical Computer Science (July 2005).

74. R. Grosu and S. A. Smolka. "Safety-Liveness Semantics for UML 2.0." *Proceedings of ACSD 2005: Fifth International Conference on Application of Concurrency to System Design*, IEEE Computer Society Press, Los Alamitos, CA, USA (June 2005).

75. P. Ye, E. Entcheva, R. Grosu, and S. A. Smolka. "Efficient Modeling of Excitable Cells Using Hybrid Automata." *Proceedings of Computational Methods in Systems Biology*, Lecture Notes in Computer Science, Springer-Verlag (April 2005).

76. R. Grosu and S. A. Smolka. "Monte Carlo Model Checking." *Proceedings of TACAS 2005: Eleventh International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2005)*, Lecture Notes in Computer Science, Vol. 3440, pp. 271-286, Springer-Verlag (April 2005).

77. C.W. Keller, D. Saha, S. Basu, and S.A. Smolka. "FocusCheck: A Tool for Model Checking and Debugging Sequential C Programs." *Proceedings of TACAS 2005: Eleventh International Conference on Tools and Algorithms for the Construction and Analysis of Systems*, Lecture Notes in Computer Science, Springer-Verlag (April 2005).

78. P. Yang, Y. Dong, C.R. Ramakrishnan, and S.A. Smolka. "Compiling Mobile Processes for Efficient Model Checking" (Winner of Most Practical Paper Award). *Proceedings of Seventh International Symposium on Practical Aspects of Declarative Languages (PADL 05)*, Lecture Notes in Computer Science, Springer-Verlag (Jan. 2005).

79. R. Grosu and S.A. Smolka. "Quantitative Model Checking." *Proceedings of First International Symposium on Leveraging Applications of Formal Methods (ISoLA 2004)*, Paphos, Cyprus (Nov. 2004).

80. S. Basu, D. Saha, and S.A. Smolka. "Localizing Program Errors for Cimple Debugging." *Proceedings of 24th IFIP International Conference on Formal Techniques for Networked and Distributed Systems (FORTE 2004)*, Lecture Notes in Computer Science, Springer-Verlag (Sep. 2004).

81. S. Basu, D. Saha, Y.-J. Lin, and S.A. Smolka. "Counter-Example Generation for Push-Down Systems." *Proceedings of 23rd IFIP International Conference on Formal Techniques for Networked and Distributed Systems (FORTE 2003)*, Lecture Notes in Computer Science, Springer-Verlag (Sep. 2003).

82. E.W. Stark, S.A. Smolka, and R. Cleaveland. "A Process-Algebraic Language for Probabilistic I/O Automata." *Proceedings of 14th International Conference on Concurrency Theory (CONCUR 2003)*, Lecture Notes in Computer Science, Vol. 2761, pp. 193-207, Springer-Verlag (Aug. 2003).

83. Y. Dong, C.R. Ramakrishnan, and S.A. Smolka. "Evidence Explorer: A Tool for Exploring Model-Checking Proofs." *Proceedings of 15th Conference on Computer-Aided Verification (CAV 2003)*, Lecture Notes in Computer Science, Springer-Verlag (July 2003).

84. F. Moller and S.A. Smolka. "On the Computational Complexity of Bisimulation, Redux." *Proceedings of the ACM Paris Kanellakis Memorial Workshop (PCK50)*, in affiliation with

the ACM 2003 Federated Computing Research Conference (FCRC 2003), ACM Press (June 2003).

85. Y. Dong, C.R. Ramakrishnan, and S.A. Smolka. "Model Checking and Evidence Exploration." *Proceedings of Tenth IEEE International Conference on Engineering of Computer Based Systems (ECBS 2003)*, IEEE Computer Society Press (April 2003).

86. P. Yang, C.R. Ramakrishnan, and S.A. Smolka. "A Logical Encoding of the π-Calculus: Model Checking Mobile Processes Using Tabled Resolution." *Proceedings of Fourth International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI 2003)*, Lecture Notes in Computer Science, Springer-Verlag (Jan. 2003).

87. Y. Dong, B. Sarna-Starosta, C.R. Ramakrishnan, and S.A. Smolka. "Vacuity Checking in the Modal Mu-Calculus." *Proceedings of Ninth International Conference on Algebraic Methodology and Software Technology (AMAST 2002)*, Lecture Notes in Computer Science, Springer-Verlag (Sept. 2002).

88. R. Grosu, E. Zadok, S. A. Smolka, R. Cleaveland, and Y. A. Liu. "High-Confidence Operating Systems." *Proceedings of the Tenth SIGOPS European Workshop: "Can we really depend on an OS?"*, Saint-Emilion, France (Sept. 2002).

89. R. Grosu, Y.A. Liu, S.A. Smolka, S.D. Stoller, and J. Yan. "Automated Software Engineering Using Concurrent Class Machines." *Proceedings of 16th IEEE International Conference on Automated Software Engineering (ASE 2001)*, IEEE Press, San Diego, CA (Nov. 2001).

90. M. van Osch and S.A. Smolka, "Finite-State Analysis of the CAN Bus Protocol." *Proceedings of Sixth IEEE International Symposium on High Assurance Systems Engineering (HASE 2001)*, IEEE Press, Boca Raton, Florida (Oct. 2001).

91. K. Narayan Kumar, C.R. Ramakrishnan, S.A. Smolka, "Alternating Fixed Points in Boolean Equation Systems as Preferred Stable Models." *Proceedings of 17th International Conference on Logic Programming (ICLP'01)*, Lecture Notes in Computer Science, Springer-Verlag (Nov. 2001).

92. R. Sekar, C.R. Ramakrishnan, I.V. Ramakrishnan, S.A. Smolka, "Model-Carrying Code (MCC): A New Paradigm for Mobile-Code Security." *Proceedings of the New Security Paradigms Workshop (NSPW 2001)*, ACM Press, Cloudcroft, New Mexico (Sept. 2001).

93. D. Hansel, R. Cleaveland, S.A. Smolka, "Distributed Prototyping from Validated Specifications." *Proceedings of 12th IEEE International Workshop on Rapid System Prototyping (RSP 2001)*, IEEE Press, Monterey, CA (June 2001).

94. D.Q. Goldin, S.A. Smolka, P. Wegner, "Turing Machines, Transition Systems, and Interaction." *Proceedings of Eighth International Workshop on Expressiveness in Concurrency (EXPRESS 2001)*, Electronic Notes in Theoretical Computer Science, Springer-Verlag (Aug. 2001).

95. X. Du, C.R. Ramakrishnan, S.A. Smolka, "Tabled Resolution + Constraints: A Recipe for Model Checking Real-Time Systems." *Proceedings of the 21st IEEE Real-Time Systems Symposium (RTSS 2000)*, IEEE Press (Nov. 2000).

96. R. Cleaveland, X. Du, S.A. Smolka, "GCCS: A Graphical Coordination Language for System Specification." *Proceedings of Fourth International Conference on Coordination Models and Languages (COORDINATION 2000)*, Lecture Notes in Computer Science, Springer-Verlag (Sept. 2000).

97. X. Du, C.R. Ramakrishnan, S.A. Smolka, "Real-Time Verification Techniques for Untimed Systems." *Proceedings of the 1st Workshop on Model Checking for Time-Critical Systems (MTCS 2000)*, Electronic Notes in Theoretical Computer Science, Springer-Verlag (Aug. 2000).

98. A. Roychoudhury, K. Narayan Kumar, C.R. Ramakrishnan, I.V. Ramakrishnan, and S.A. Smolka, "Verification of Parameterized Systems Using Logic-Program Transformations." *Proceedings of the Sixth International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2000)*, Lecture Notes in Computer Science, Springer-Verlag (March 2000).

99. S. Basu, S.A. Smolka, O.R. Ward, "Model Checking the Java Meta-Locking Algorithm." *Proceedings of 7th IEEE International Conference and Workshop on the Engineering of Computer Based Systems (ECBS 2000)*, Edinburgh, Scotland (April 2000).

100. C.R. Ramakrishnan, I.V. Ramakrishnan, S.A. Smolka, et al. "XMC: A Logic-Programming-Based Verification Toolset." *Proceedings of the 12th International Conference on Computer Aided Verification (CAV '00)*, Springer-Verlag (June 2000).

101. S. Lu and S.A. Smolka, "Model Checking the Secure Electronic Transactions (SET) Protocol." *Proceedings of Seventh International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS'99)*, ACM Press (Oct. 1999).

102. M. Mukund, K N. Kumar, S.A. Smolka, "Faster Model Checking for Open Systems." *Proceedings of ASIAN'99*, Lecture Notes in Computer Science, Springer-Verlag (Dec. 1999).

103. Y. Dong, S.A. Smolka, E.W. Stark, S. White, "Practical Considerations in Protocol Verification: The E-2C Case Study," *Proceedings of Fifth IEEE International Conference on Engineering of Complex Computer Systems (ICECCS '99)*, IEEE Press (Oct. 1999).

104. Y. Dong., X. Du, Y.S. Ramakrishna, C.R. Ramakrishnan, I.V. Ramakrishnan, S.A. Smolka, O. Sokolsky, E.W. Stark, and D.S. Warren, "Fighting Livelock in the i-Protocol: A Comparative Study of Verification Tools," *Proceedings of the Fifth International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS '99)*, Lecture Notes in Computer Science, Springer-Verlag (March 1999).

105. K. Narayan Kumar, R. Cleaveland, and S.A. Smolka, "Infinite Probabilistic and Non-Probabilistic Testing," *Proceedings of the 18th Conference on the Foundations of*

Software Technology and Theoretical Computer Science (FST&TCS '98), Lecture Notes in Computer Science, Springer-Verlag (Dec. 1998).

106. X. Liu and S.A. Smolka, "Simple Linear-Time Algorithms for Minimal Fixed Points," *Proceedings of the 26th International Conference on Automata, Languages, and Programming (ICALP '98)*, Lecture Notes in Computer Science, Springer-Verlag (July 1998).

107. X. Liu, C.R. Ramakrishnan, and S.A. Smolka, "Fully Local and Efficient Evaluation of Alternating Fixed Points," *Proceedings of the Fourth International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS '98)*, Lecture Notes in Computer Science, Springer-Verlag (April 1998).

108. E.W. Stark and S.A. Smolka, "Compositional Analysis of Expected Delays in Networks of Probabilistic I/O Automata," *Proceedings of the 13th Annual IEEE Symposium on Logic in Computer Science (LICS '98)*, Indianapolis, IN, IEEE Computer Society Press (June 1998).

109. S.A. Smolka, B. Cui, Y. Dong, X. Du, K. Narayan Kumar, C.R. Ramakrishnan, I.V. Ramakrishnan, A. Roychoudhury, and D.S. Warren. "Logic Programming and Model Checking" (Invited Paper), *Proceedings of PLILP/ALP'98*, Pisa, Italy, Lecture Notes in Computer Science, Vol. 1490, Springer-Verlag (Sept. 1998).

110. A. Roychoudhury, C.R. Ramakrishnan, I.V. Ramakrishnan, and S.A. Smolka, "Tabulation-based Induction Proofs with Application to Automated Verification," *Proceedings of the International Workshop on Tabulation in Parsing and Deduction (TAPD'98)*, Paris, France (April 1998).

111. A. Philippou, O. Sokolsky, I. Lee, R. Cleaveland, and S.A. Smolka, "Probabilistic Resource Failure in Real-Time Process Algebra," *Proceedings of the Ninth International Conference on Concurrency Theory (CONCUR '98)*, Nice, France, Lecture Notes in Computer Science, Springer-Verlag (Aug. 1998).

112. X. Du, K.T. McDonnell, E. Nanos, Y.S. Ramakrishna, and S.A. Smolka, "Software Design, Specification, and Verification: Lessons Learned from the Rether Case Study," *Proceedings of the Sixth International Conference on Algebraic Methodology and Software Technology (AMAST'97)*, Sydney, Australia, Lecture Notes in Computer Science, Springer-Verlag (Dec. 1997).

113. Y.S. Ramakrishna and S.A. Smolka, "Partial-Order Reduction in the Weak Modal Mu-Calculus," *Proceedings of the Eighth International Conference on Concurrency Theory (CONCUR '97)*, Warsaw, Poland, Lecture Notes in Computer Science, Springer-Verlag (July 1997).

114. Y.S. Ramakrishna, C.R. Ramakrishnan, I.V. Ramakrishnan, S.A. Smolka, T. Swift, and D.S. Warren, "Efficient Model Checking Using Tabled Resolution," *Proceedings of the Ninth International Conference on Computer Aided Verification (CAV '97)*, Haifa, Israel, Lecture Notes in Computer Science, Vol. 1243, Springer-Verlag (July 1997).

115. R. Cleaveland, I. Lee, P.M. Lewis, and S.A. Smolka, "A Theory of Testing for Soft Real-time Processes," *Proceedings of the Eighth International Conference on Software Engineering and Knowledge Engineering*, Lake Tahoe, Nevada, pp. 474-479. Published by Knowledge Systems Institute, Skokie, Illinois, ISBN 0-9641699-3-2 (May 1996).

116. Y.-J. Joung and S.A. Smolka, "Strong Interaction Fairness via Randomization," *16th IEEE International Conference on Distributed Computing Systems*, Hong Kong, pp. 475-483 (May 1996).

117. R. Cleaveland, P.M. Lewis, S.A. Smolka, and O. Sokolsky, "The Concurrency Factory: A Development Environment for Concurrent Systems," *Computer Aided Verification '96*, Springer-Verlag (1996).

118. R. Cleaveland, P.M. Lewis, S.A. Smolka, and O. Sokolsky, "The Concurrency Factory Software Development Environment," *TACAS '96*, Springer-Verlag (1996).

119. O. Sokolsky and S.A. Smolka, "Local Model Checking for Real-Time Systems," *Computer-Aided Verification '95*, American Mathematical Society (July 1995).

120. S. Zhang, S.A. Smolka, and O. Sokolsky, "On the Parallel Complexity of Bisimulation and Model Checking," in *Modal Logic and Process Algebra: A Bisimulation Perspective*, CSLI Lecture Notes No. 53, pp. 257-288 (1995).

121. S. Zhang, S.A. Smolka, and O. Sokolsky, "On the Parallel Complexity of Model Checking in the Modal Mu-Calculus," *Proceedings of Ninth Annual IEEE Symposium on Logic in Computer Science*, pp. 154-163, London, England (July 1994).

122. R. Cleaveland, J.N. Gada, P.M. Lewis, S.A. Smolka, O. Sokolsky, and S. Zhang, "The Concurrency Factory — Practical Tools for Specification, Simulation, Verification, and Implementation of Concurrent Systems," *Proceedings of DIMACS Workshop on Specification of Parallel Algorithms*, Princeton, NJ (May 1994).

123. A. Uselton and S.A. Smolka, "A Compositional Semantics for Statecharts using Labeled Transition Systems," *Proceedings of CONCUR '94 — Fifth International Conference on Concurrency Theory*, Uppsala, Sweden (Aug. 1994).

124. S.-H. Wu, S. A. Smolka and E. Stark, "Compositionality and Full Abstraction for Probabilistic I/O Automata," *Proceedings of CONCUR '94 — Fifth International Conference on Concurrency Theory*, Uppsala, Sweden (Aug. 1994).

125. S. Yuen, R. Cleaveland, Z. Dayar, and S.A. Smolka, "Fully Abstract Characterizations of Testing Preorders for Probabilistic Processes," *Proceedings of CONCUR '94 — Fifth International Conference on Concurrency Theory*, Uppsala, Sweden (Aug. 1994).

126. A. Uselton and S.A. Smolka, "A Process-Algebraic Semantics for Statecharts via State Refinement," *Proceedings of PROCOMET '94*, San Miniato, Italy. Proceedings published by Elsevier/North Holland (1994).

127. O. Sokolsky and S.A. Smolka, "Incremental Model Checking in the Modal Mu-Calculus," *Computer-Aided Verification '94*, American Mathematical Society (June 1994).

128. A. Uselton and S.A. Smolka, "State Refinement in Process Algebra," *Proceedings of NAPAW '93 – Second North American Workshop on Process Algebra*, Ithaca, NY (Aug. 1993).

129. Y.-J. Joung and S.A. Smolka, "Multiparty Interaction: An Abstraction Mechanism for Distributed Programming," *Proceedings of SOFSEM '92*, Prague, Czechoslovakia (Nov. 1992).

130. S. Zhang and S.A. Smolka, "Efficient Parallelization of Equivalence Checking Algorithms," *Proceedings of FORTE '92 – Fifth International Conference on Formal Description Techniques*, M. Diaz and R. Groz (eds.), pp. 133–146 (Oct. 1992).

131. J.C.M. Baeten, J.A. Bergstra, and S.A. Smolka, "Axiomatizing Probabilistic Processes: ACP with Generative Probabilities," *Proceedings of CONCUR '92 – Third International Conference on Concurrency Theory*, Stony Brook, NY (Aug. 1992). Proceedings published as *Lecture Notes in Computer Science*, Vol. 630, W.R. Cleaveland (ed.), Springer-Verlag (1992).

132. R. Cleaveland, S.A. Smolka, and A. Zwarico, "Testing Preorders for Probabilistic Processes," *Proceedings of 19th International Colloquium on Automata, Languages and Programming*, Vienna, Austria (July 1992). Proceedings published as *Lecture Notes in Computer Science*, Vol. 623, W. Kuich (ed.), Springer-Verlag (1992).

133. Y.-J. Joung and S.A. Smolka, "A Comprehensive Study of the Complexity of Multiparty Interaction," *Proceedings of 19th Annual ACM Symposium on Principles of Programming Languages*, Albuquerque, New Mexico (Jan. 1992).

134. Y.-J. Joung and S.A. Smolka, "Coordinating First-Order Multiparty Interactions," *Proceedings of 18th Annual ACM Symposium on Principles of Programming Languages*, Orlando, Florida (Jan. 1991).

135. C.-C. Jou and S.A. Smolka, "Equivalences, Congruences, and Complete Axiomatizations for Probabilistic Processes," *Proceedings of CONCUR '90 – First International Conference on Concurrency Theory*, Amsterdam, the Netherlands (Aug. 1990). Proceedings published as *Lecture Notes in Computer Science*, Vol. 458, J.C.M. Baeten and J.W. Klop (eds), Springer-Verlag (1990).

136. S.A. Smolka and B. Steffen, "Priority as Extremal Probability," *Proceedings of CONCUR '90 – First International Conference on Concurrency Theory*, Amsterdam, the Netherlands (Aug. 1990). Proceedings published as *Lecture Notes in Computer Science*, Vol. 458, J.C.M. Baeten and J.W. Klop (eds), Springer-Verlag (1990).

137. J. Malhotra, S.A. Smolka, A. Giacalone, and R. Shapiro, "Winston: A Tool for the Hierarchical Design and Simulation of Concurrent Systems," in *Specification and Verification of Concurrent Systems*, Springer-Verlag Series on Workshops in Computing, C.J. van Rijsbergen (ed.), ISBN 3-540-19625-0, Springer-Verlag, London (July 1990).

138. R. van Glabbeek, S.A. Smolka, B.U. Steffen, and C.M.N. Tofts, "Reactive, Generative, and Stratified Models of Probabilistic Processes," *Proceedings of Fifth Annual IEEE Symposium on Logic in Computer Science*, pp. 130-141, Philadelphia, PA (June 1990). Invited for

submission to Special Issue of *Information and Computation* on the Fifth Annual IEEE Symposium on Logic in Computer Science.

139. Y.-J. Joung and S.A. Smolka, "Efficient, Dynamically Structured Multiprocess Communication," *Proceedings of 28th Allerton Conference on Communication, Control and Computing*, Urbana, IL (Oct. 1990).

140. Y.-J. Joung and S.A. Smolka, "A Completely Distributed and Message-Efficient Implementation of Synchronous Multiprocess Communication," *Proceedings of the 19th Annual International Conference on Parallel Processing*, Chicago, IL (Aug. 1990).

141. A. Giacalone, C.-J. Jou, and S.A. Smolka, "Algebraic Reasoning for Probabilistic Processes," *Proceedings of IFIP WG 2.2/2.3 Working Conference on Programming Concepts and Methods*, Sea of Gallilee, Israel (April 1990). Proceedings published by North-Holland (1990).

142. A. Giacalone, J. Heller, A. Kaufman, M. Kifer, P.M. Lewis, P. Mishra, I.V. Ramakrishnan, S.A. Smolka, and D.S. Warren, "VERITAS: Visualization Environment Research In The Applied Sciences," *Proceedings of the SPIE/SPSE Symposium on Electronic Imaging* (1989).

143. A. Giacalone, A. Kaufman, S.A. Smolka, and D.S. Warren, "Visualization Tools for the Applied Sciences," *Proceedings of Third International Conference on Human-Computer Interaction*, Boston, MA (Sept. 1989).

144. G. Singh, S.A. Smolka, and I.V. Ramakrishnan, "Distributed Algorithms for Tree Pattern Matching," *Proceedings of Second International Workshop on Distributed Algorithms*, Amsterdam (July 1987). Proceedings published as *Lecture Notes in Computer Science*, Vol. 312, Springer-Verlag, J. van Leeuwen (1988).

145. T. Bolognesi and S.A. Smolka, "Fundamental Results for the Verification of Observational Equivalences: A Survey," *Proceedings of Seventh International Symposium on Protocol Specification, Testing and Verification*, Zurich, Switzerland (May 1987). Proceedings published as *Protocol Specification, Testing, and Verification, VII*, H. Rudin and C. H. West (eds.), North-Holland (1988).

146. S.A. Smolka and R.E. Strom, "A CCS Semantics for NIL," *Proceedings of the IFIP TC 2/WG 2.2 Working Conference on Formal Description of Programming Concepts*, Ebberup, Denmark, pp. 347–368 (Aug. 1986). Proceedings published as *Formal Description of Programming Concepts III* (M. Wirsing, ed.), North-Holland (1987).

147. S.A. Smolka, S.K. Debray, and A.J. Frank, "Testing Protocol Robustness the CCS Way," *Proceedings of Fourth International Symposium on Protocol Specification, Testing and Verification*, Skytop Lodge, PA, pp. 93–108 (June 1984). Proceedings published as *Protocol Specification, Testing, and Verification, IV*, Y. Yemini, R. Strom, and S. Yemini (eds.), North-Holland (1985).

148. P.C. Kanellakis and S.A. Smolka, "On the Analysis of Cooperation and Antagonism in Networks of Communicating Processes," *Proceedings of the Fourth ACM Symposium on the Principles of Distributed Computing*, Minaki, Ontario, Canada (Aug. 1985).

149. S.K. Debray, A.J. Frank and S.A. Smolka, "On the Existence and Construction of Robust Communication Protocols for Unreliable Channels," *Proceedings of the Fourth Conference on Foundations of Software Technology and Theoretical Computer Science*, Banglore, India, pp. 136-151 (Dec. 1984). Proceedings published as *Lecture Notes in Computer Science*, Vol. 181, Springer-Verlag, M. Joseph and R. Shyamasundar (eds.) (1984).

150. S.A. Smolka, "Polynomial-Time Analysis for a Class of Communicating Processes," *Proceedings of the Sixth International Symposium on Programming*, Toulouse, France (April 1984). Proceedings published as *Lecture Notes in Computer Science* Series, Vol. 167, Springer-Verlag (1984).

151. P.C. Kanellakis and S.A. Smolka, "CCS Expressions, Finite State Processes, and Three Problems of Equivalence," *Proceedings of the 2nd ACM Symposium on the Principles of Distributed Computing*, Montreal, Canada (Aug. 1983).

152. A. Danesi, S.A. Smolka, U. Chinappi, "Modeling and Flight Simulation of an Active Configured Aircraft under M.L.S. Guidance," *Proceedings of the NATO AGARD Conference on Modeling and Simulation of Avionics Systems and Command, Control and Communications Systems*, AGARD Conference Proceedings No. CP-268, Paris, France (Oct. 1979).

153. A. Danesi, S.A. Smolka, F. Borrini, "Trajectory Behaviour of a Control Configured Aircraft Subjected to Random Disturbances," *Proceedings of the NATO AGARD Conference on Aerodynamic Characteristics of Controls*, AGARD Conference Proceedings No. CP-262 (1979).

154. K.B. MacNichol, S.A. Smolka, L. Morino, "Atmospheric Boundary Layer Flows Around Prismatic Shapes," *Proceedings of the 14th Annual Meeting of the Society of Engineering Science*, Lehigh, PA (Nov. 1977).

155. R.D. Preuss, S.A. Smolka, E.O. Suciu, L. Morino, "Nonpotential Aerodynamics for Windmills in Shear Winds," *Proceedings of the 3rd Biennial Conference on Wind Energy Conversion Systems*, Washington, D.C. (Sept. 1977).

156. J. Broderick, S.A. Smolka, L. Morino, "Recent Developments in the Green's Function Method for Aerodynamics," *Proceedings of the 2nd IMACS (AICA) International Symposium on Computer Methods for Partial Differential Equations*, Lehigh, PA (June 1977).

Articles in Books

1. R. Cleaveland, A.W. Roscoe, and S.A. Smolka, "Process Algebra and Model Checking", in *Handbook of Model Checking*, pp. 1149–1195, Springer (2018).

2. M. Kifer and S.A. Smolka, "OSP: An Environment for Operating Systems Projects." Appears as Appendix D in *Operating Systems – Internals and Design Principles*, W. Stallings, pp. 723-730, Prentice-Hall (2001).

3. E.W. Stark and S.A. Smolka, "A Complete Axiom System for Finite-State Probabilistic Processes," in *Proof, Language and Interaction: Essays in Honour of Robin Milner* (G. Plotkin, C.P. Stirling, and M. Tofte, eds.), MIT Press (2000).

4. W.R. Cleaveland and S.A. Smolka, "Process Algebra," in *Encyclopedia of Electrical Engineering* (J.G. Webster, editor), John Wiley & Sons (1999).

5. A. Giacalone and S.A. Smolka, "Integrated Environments for Formally Based Design and Simulation of Concurrent Systems: A Non-Procedural Approach," in *Visual Programming Environments*, E.P. Glinert, IEEE Computer Society Press (1990).

6. P. Wegner and S.A. Smolka, "Processes, Tasks, and Monitors: A Comparative Study of Concurrent Programming Primitives," in *Tutorial: Distributed Software Engineering*, S.M. Shatz and J.-P. Wang, eds., IEEE Computer Society Press, pp. 148-164 (1989).

7. P. Wegner and S.A. Smolka, "Processes, Tasks, and Monitors: A Comparative Study of Concurrent Programming Primitives," in *Concurrent Programming* (N. Gehani and A. McGettrick, eds.), Addison-Wesley (1987).

8. S.A. Smolka and P.C. Kanellakis, "Recent Results in the Static Analysis of Communicating Finite State Processes," in *Current Advances in Distributed Computing and Communications*, Computer Science Press, Rockville, Maryland, pp. 208-233 (1986).

9. P. Wegner and S.A. Smolka, "Processes, Tasks, and Monitors: A Comparative Study of Concurrent Programming Primitives," in *Programming Languages: A Grand Tour*, 3rd edition, Ellis Horowitz, Computer Science Press (1986).