

# ANDREW S. MINER

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## RESEARCH INTERESTS

- Performance and reliability analysis of systems.
- Model checking and formal methods.
- Binary decision diagrams and variants.
- Petri nets and stochastic modeling.
- Model analysis algorithms.
- Tool development.

## EDUCATION

- Ph.D.** *July 2000*      Computer Science  
College of William and Mary, Williamsburg, VA.  
Dissertation: “Data Structures for the Analysis of Large Structured Markov Models” [M3]. Advisor: DR. GIANFRANCO GIARDO
- M.S.** *May 1995*      Computer Science  
College of William and Mary, Williamsburg, VA.
- B.S.** *May 1993*      Physics and Computer Science  
Randolph–Macon College, Ashland, VA.

## ACADEMIC POSITIONS

- Aug. 2006 — present*      **Associate Professor**  
Department of Computer Science, Iowa State University, Ames, IA  
Nine-month academic year appointment.
- Aug. 2000 — Aug. 2006*      **Assistant Professor**  
Department of Computer Science, Iowa State University, Ames, IA  
Nine-month academic year appointment.

## SPONSORED FUNDING

- Jan. 2017 — Dec. 2019* extended to *Dec. 2020* NSF, #1642397, Advanced Cyberinfrastructure (\$498,672), PI  
“SI2—SSE: A Next-Generation Decision Diagram Library”  
Software: [S2]  
Publications: [C19], [C22], [C23], [C25]
- Nov. 2016 — Apr. 2017* NSF, #1707092, Computing and Communication Foundations (\$9,994), PI  
“Midwest Verification Day 2016”
- Mar. 2010 — Feb. 2015* extended to *Feb. 2017* NSF, #0954132, Computing and Communication Foundations (\$397,478), Co-I  
“CAREER: Advanced Decision Procedures for Words, Trees, and Lists”  
(Transferred from PI Ting Zhang, *Feb. 2015*)
- Aug. 2006 — Jul. 2011* extended to *Jul. 2014* NSF, #0546041, Computer Systems Research (\$400,000), PI  
“CAREER: Composition approaches for the analysis of complex systems”  
Software: [S1]  
Publications: [J5], [J6], [J7], [J8], [M9], [C13], [C14], [C15], [C16]
- Jan. 2007 — Sep. 2007* Rockwell Collins, Inc. (\$36,662), Co-I  
“Addressing Resource Allocation Problem in IMA Software Design”
- Sep. 2005 — Aug. 2006* NSF, #0509340, Computer Systems Research Program (\$49,942), PI  
“Software Verification Using Plug and Play Components”  
Publications: [J5]
- Jul. 1998 — Jun. 2000* NASA GSRP Fellowships (\$44,000).  
“Exact solution techniques for large Markov models”.  
Publications: [J0], [C0], [C1], [C2]
- Aug. 1998 — May 2000* Virginia Space Grant Consortium supplemental grants (\$10,000)  
“Exact analysis of large Markov models”.  
Publications: [J0], [C0], [C1], [C2]

## TEACHING ACTIVITIES

### Courses Taught

ComS 228	Introduction to Data Structures <i>Fall 2002</i>
ComS 229	Advanced Programming Techniques (now ComS 327) <i>Fall 2013, Spring 2013</i>
ComS 252W	Linux Operating System Essentials (Online course) <i>Fall 2018, Fall 2017, Fall 2016, Fall 2015, Fall 2014, Fall 2013</i>
ComS 252	Linux Operating System Essentials <i>Fall 2012, Fall 2011, Fall 2010, Fall 2009, Fall 2006, Fall 2005, Fall 2004</i>
ComS 327	Advanced Programming Techniques <i>Spring 2020, Fall 2019</i>
ComS 352	Introduction to Operating Systems <i>Fall 2002, Fall 2001, Spring 2001</i>
ComS 490	Independent Study <i>Spring 2015, Fall 2001</i>
ComS 412/512	Formal Methods in Software Engineering <i>Spring 2019, Spring 2017, Spring 2016</i>
ComS 440/540	Principles and Practice of Compiling <i>Spring 2019, Spring 2018</i>
ComS 455/555	Discrete-event Simulation <i>Fall 2015, Fall 2008, Fall 2006, Fall 2005, Fall 2004, Fall 2003</i>
ComS 556	Analysis algorithms for stochastic models <i>Spring 2012, Spring 2011, Spring 2009, Spring 2007, Spring 2005, Spring 2003</i>

### Ph.D. Students Advised

<i>current</i>	Shruti Biswal
<i>Summer 2019</i>	Junaid Babar, completed Summer 2019 Publications: [C13], [C15], [C16], [C19], [C22] Placement: Collins Aerospace
<i>Fall 2015</i>	Yaping Jing, completed Fall 2015 Publications: [C14] Placement: Whitman College
<i>Fall 2009</i>	Hsin-yi Jiang (co-advised with Carl Chang) Placement: Microsoft

## M.S. Students Advised

- current* Jonathan Deneke  
*Fall 2011* Ritu Mundhe, completed Fall 2011  
Placement: Programmer Analyst, CDS Global  
*Spr 2010* Nishtha Arora, completed Spring 2010  
Placement: Software Engineer, Thomson Reuters  
*Spr 2005* Shuxing Cheng, completed Spring 2005  
Publications: [C6], [C11]  
Placement: PhD program, Computer Science, ISU

## Ph.D. Defenses (committee member)

- Spr 2019* Chuan Jiang (Comp. Sci., Iowa State University)  
Publications: [C19], [C22]  
*Sum 2016* Titus Klinge (Comp. Sci., Iowa State University)  
Publications: [C17], [J11]  
*Spr 2016* Yuheng Long (Comp. Sci., Iowa State University)  
*Spr 2014* Ru He (Comp. Sci., Iowa State University)  
*Sum 2013* Zachary Oster (Comp. Sci., Iowa State University)  
*Sum 2010* Asif Imran (Physics, Iowa State University)  
*Fall 2009* Hsin-yi Jiang (Comp. Sci., Iowa State University)  
*Spr 2009* Jinchun Xia (Comp. Sci., Iowa State University)  
*Spr 2008* Marco Beccuti (Comp. Sci., University of Torino, Italy)  
*Spr 2006* Changyan Zhou (Comp. Eng., Iowa State University)  
*Sum 2005* Wenbin Qiu (Comp. Eng., Iowa State University)  
*Sum 2004* Yanxin Wang (Comp. Sci., Iowa State University)  
Publications: [C9], [C10], [M7]

## Ph.D. Preliminary Exams (committee member)

- Spr 2018* Chuan Jiang (Comp. Sci, Iowa State University)  
*Fall 2015* Titus Klinge (Comp. Sci., Iowa State University)  
*Spr 2015* Yuheng Long (Comp. Sci., Iowa State University)  
*Fall 2012* Zachary Oster (Comp. Sci., Iowa State University)  
*Fall 2011* Ru He (Comp. Sci., Iowa State University)  
*Fall 2007* Asif Imran (Physics, Iowa State University)  
*Spr 2007* Hsin-yi Jiang (Comp. Sci., Iowa State University)  
*Spr 2007* Jinchun Xia (Comp. Sci., Iowa State University)  
*Spr 2005* Steven Jenkins (Comp. Sci., Iowa State University)  
*Spr 2004* Changyan Zhou (Comp. Eng., Iowa State University)  
*Spr 2004* Wenbin Qiu (Comp. Eng., Iowa State University)  
*Fall 2003* Yanxin Wang (Comp. Sci., Iowa State University)

## M.S. Defenses (committee member)

*Sum 2020* Wandi Xiong (Comp. Sci., Iowa State University)  
*Fall 2018* Anubhav (Comp. Sci., Iowa State University)  
*Sum 2018* Preeti Bhardwaj (Comp. Sci., Iowa State University)  
*Spr 2017* Ramanathan Ramu (Comp. Sci., Iowa State University)  
*Spr 2017* Sai-Sravanthi Nudurupati (Comp. Sci., Iowa State University)  
*Spr 2017* Shiva Nalla (Comp. Sci., Iowa State University)  
*Fall 2015* Eric Lin (Comp. Sci., Iowa State University)  
*Sum 2014* Sneha Bankar (Comp. Sci., Iowa State University)  
*Sum 2014* Swapnanjan Chatterjee (Comp. Sci., Iowa State University)  
*Sum 2012* Katsuya Iwata (Comp. Sci., Iowa State University)  
*Fall 2011* Yuly Suvorov (Comp. Sci., Iowa State University)  
*Spr 2011* Paul Jennings (Comp. Sci., Iowa State University)  
*Spr 2010* Harish Narayanappa (Comp. Sci., Iowa State University)  
*Sum 2008* Rakesh Setty (Comp. Sci., Iowa State University)  
*Spr 2007* Joe Schneider (Comp. Eng., Iowa State University)  
*Fall 2005* Chad Brewbaker (Comp. Sci., Iowa State University)  
*Fall 2004* Natalia Stakhanova (Comp. Sci., Iowa State University)  
*Sum 2003* Paul Grieco (Comp. Sci., College of William and Mary)

## UNIVERSITY SERVICE

### Committee Chair

- Director of Undergraduate Education, Department of Computer Science  
*Fall 2014 — Spring 2019*
- Undergraduate Curriculum Committee Chair, Software Engineering  
*Spring 2015 — Spring 2018*
- Multimedia and Interactive Computing Committee, Department of Computer Science  
*Spring 2009 — Spring 2013*
- Curriculum Revision Committee, Department of Computer Science  
*Spring 2010 — Summer 2012*
- Graduate Admissions Committee, Department of Computer Science  
*Fall 2006 — Spring 2007*

### Committee Member

- Representative Assembly, College of Liberal Arts and Sciences  
*Spring 2020 — present*
- Software Engineering Curriculum Committee  
*Spring 2011 — present*
- SE Operations and Governance Committee  
*Fall 2016 — Spring 2017*
- Scholarship Committee, College of Liberal Arts and Sciences  
*Fall 2016 — Spring 2017*

- Petition Committee, Software Engineering  
*Spring 2011 — Spring 2017*
- Retention Committee, Department of Computer Science  
*Fall 2013 — Spring 2016*
- Graduate Admissions Committee, Department of Computer Science  
*Fall 2014 — Spring 2015, Fall 2008 — Spring 2013, Fall 2000 — Spring 2002*
- Undergraduate Committee, Department of Computer Science  
*Fall 2009 — Spring 2014, Fall 2002 — Spring 2006*
- Graduate Committee, Department of Computer Science  
*Fall 2008 — Spring 2013, Fall 2006 — Spring 2007*
- Scholarship and Awards Committee, Department of Computer Science  
*Fall 2008 — Spring 2010, Fall 2003 — Spring 2007*
- Faculty Search Committee, Department of Computer Science  
*Fall 2008 — Spring 2009*
- Promotion and Tenure Steering Committee, Department of Computer Science  
*Sum 2008 — Spring 2009*
- Teaching Evaluation Committee, Department of Computer Science  
*Fall 2006 — Spring 2007*
- DEO Evaluation Committee, Department of Computer Science  
*Summer 2007, Fall 2004*

## PROFESSIONAL SERVICE

### Event Organization

*October 21–22, 2016*      Eighth Midwest Verification Day, <http://mvd2016.cs.iastate.edu>  
Co-organized with Samik Basu, Gianfranco Ciardo, Kristin Rozier

### Steering Committees

*Sep. 2010 — Sep. 2013*      Int. Conf. on Quantitative Evaluation of Systems (QEST)

### Program Committee Co-chair

*Sep. 2006*      3rd Int. Conf. on Quantitative Evaluation of Systems (QEST 2006)

### Tools Chair

*Sep. 2004*      1st Int. Conf. on Quantitative Evaluation of Systems (QEST 2004)

## Program Committees

Workshop on Multiformalism Modeling  
2012

International Conference on Application and Theory of Petri Nets (ICATPN)  
2020, 2019, 2018, 2017, 2016, 2014, 2013, 2012

Numerical Solution of Markov Chains (NSMC)  
2010

Performance and Dependability Symposium (PDS track of DSN)  
2010

International ICST Conference on Simulation Tools and Techniques (SIMUTools)  
2013, 2012, 2011, 2010

IEEE International Computer Software and Applications Conference (COMPSAC)  
2008

International Conference on Quantitative Evaluation of Systems (QEST)  
2020, 2011, 2010, 2009, 2008, 2005

European Performance Evaluation Workshop (EPEW)  
2006, 2005

International Workshop on Petri Nets and Performance Models (PNPM)  
2003, 2001

## Miscellaneous

National Science Foundation review panels  
2018, 2013, 2009

External reviewer for Computer Science Departments  
*Apr. 2011* Randolph–Macon College, Ashland, VA

## INVITED PRESENTATIONS

- Jun. 2008* Dipartimento di Informatica, Università di Torino  
Short course: “Advanced Data Structures and Algorithms”
- Feb. 2005* 2005 SIAM Conference on Computational Science & Engineering  
Presentation title: “Representing and Solving Large Markov Chains”
- Jun. 2004* Dipartimento di Informatica, Università di Torino  
Presentation title: “An Algebra for Decision Diagrams  
(The grand unified theory of everything)”
- Dec. 2002* GI/Dagstuhl Research Seminar: Validation of Stochastic Systems  
Presentation title: “Symbolic Representations and Analysis of Large State Spaces”  
Joint presentation with Dave Parker, University of Birmingham
- Dec. 2000* Dipartimento di Informatica, Università di Torino  
Presentation title: “A Novel Approximation Technique based on  
Kronecker Products, MDDs, and Aggregation”
- Jan. 2000* Colloquium: Department of Computer Science, College of William and Mary  
Presentation title: “Using decision diagrams for efficient model analysis”

## SOFTWARE DEVELOPMENT

- Design and implementation of MEDDLY: Multi-terminal and Edge-valued Decision Diagram Library. Open source. Available online [S2].  
Related publications: [J9], [C13], [C15], [C16], [C19], [C20]
- Design and implementation of SMART: Stochastic Model checking Analyzer for Reliability and Timing. Open source. Available online [S0].  
Publications: [J3], [J7], [C8], [M1], [M2], [M4], [M5], [M6]

## AWARDS

- Article [C17] received “The IFIP TC2 Manfred Paul Award for Excellence in Software: Theory and Practice”
- Conference article [C11] nominated for best paper award (top 7)
- Conference articles [C4], [C8], [C12], [C20], [C22], selected for journal publication in extended form [J1], [J3], [J4], [J9], [*under review*]
- Member of  $\Phi$ BK honor society

## JOURNAL ARTICLES

- [J11] Samuel J. Ellis, Titus H. Klinge, James I. Lathrop, Jack H. Lutz, Robyn R. Lutz, Andrew S. Miner, and Hugh D. Potter. Runtime fault detection in programmed molecular systems. *ACM Trans. on Software Engineering and Methodology*, 28(2), March 2019.
- [J10] Yaping Jing and Andrew S. Miner. Computation tree measurement language (CTML). *Formal Aspects of Computing*, 30(3):443–462, 2018.
- [J9] Elvio Gilberto Amparore, Susanna Donatelli, Marco Beccuti, Giulio Garbi, and Andrew Miner. Decision diagrams for Petri nets: A comparison of variable ordering algorithms. *Trans. on Petri Nets and Other Models of Concurrency XIII*, pages 73–92, 2018.
- [J8] Min Wan, Gianfranco Ciardo, and Andrew S. Miner. Approximate steady–state analysis of large Markov models based on the structure of their decision diagram encoding. *Perf. Eval.*, 68(5):463–486, 2011.
- [J7] Gianfranco Ciardo, Andrew S. Miner, and Min Wan. Advanced features in SMART: the Stochastic Model checking Analyzer for Reliability and Timing. *SIGMETRICS Perform. Eval. Rev.*, 36(4):58–63, March 2009.
- [J6] Andrew S. Miner. Decision diagrams for the exact solution of Markov models. *Proceedings in Applied Mathematics and Mechanics (PAMM)*, 7(1):1080701–1080702, 2007.
- [J5] Gianfranco Ciardo, Gerald Lüttgen, and Andrew S. Miner. Exploiting interleaving semantics in symbolic state–space generation. *Formal Methods in System Design*, 31(1):63–100, August 2007.
- [J4] Andrew S. Miner. Saturation for a general class of models. *IEEE Trans. Softw. Eng.*, 32(8):559–570, August 2006.
- [J3] Gianfranco Ciardo, Robert Jones, Andrew Miner, and Radu Siminiceanu. Logic and stochastic modeling with SMART. *Perf. Eval.*, 63(6):578–608, June 2006.
- [J2] Gianfranco Ciardo and Andrew S. Miner. Implicit data structures for logic and stochastic systems analysis. *SIGMETRICS Perform. Eval. Rev.*, 32(4):4–9, March 2005.



- [J1] Andrew S. Miner. Implicit GSPN reachability set generation using decision diagrams. *Perf. Eval.*, 56(1-4):145–165, March 2004.
- [J0] Andrew S. Miner, Gianfranco Ciardo, and Susanna Donatelli. Using the exact state space of a Markov model to compute approximate stationary measures. *SIGMETRICS Perform. Eval. Rev.*, 28(1):207–216, June 2000.

## BOOK CHAPTERS (PEER-REVIEWED)

- [B1] Gianfranco Ciardo, Marco Gribaudo, Mauro Iacono, Andrew Miner, and Pietro Piazzolla. *Power Consumption Analysis of Replicated Virtual Applications in Heterogeneous Architectures*, pages 285–297. Springer-Verlag, 2016.
- [B0] Andrew Miner and David Parker. Symbolic representations and analysis of large state spaces. In Christel Baier, Boudewijn R. Haverkort, Holger Hermanns, Joost-Pieter Katoen, and Markus Siegle, editors, *Validation of Stochastic Systems*, LNCS 2925, pages 296–338. Springer-Verlag, 2004.

## CONFERENCE PUBLICATIONS (PEER-REVIEWED)

- [C26] Shruti Biswal and Andrew S. Miner. Improving saturation efficiency with implicit relations. In *Application and Theory of Petri Nets and Concurrency*, LNCS 11522, pages 301–320. Springer-Verlag, 2019.
- [C25] Elvio Amparore, Bernard Berthomieu, Gianfranco Ciardo, Silvano Dal Zilio, Francesco Gallà, Lom Messan Hillah, Francis Hulin-Hubard, Peter Gjøøl Jensen, Loïc Jezequel, Fabrice Kordon, Didier Le Botlan, Torsten Liebke, Jeroen Meijer, Andrew Miner, Emmanuel Paviot-Adet, Jiří Srba, Yann Thierry-Mieg, Tom van Dijk, and Karsten Wolf. Presentation of the 9th edition of the model checking contest. In Dirk Beyer, Marieke Huisman, Fabrice Kordon, and Bernhard Steffen, editors, *Proc. TACAS*, LNCS 11429, pages 50–68, Prague, Czech Republic, April 2019. Springer.
- [C24] Elvio Amparore, Gianfranco Ciardo, Susanna Donatelli, and Andrew Miner.  $i_{\text{Rank}}$ : A variable order metric for DEDS subject to linear invariants. In *TACAS 2019*, pages 285–302. Springer-Verlag, 2019.
- [C23] Junaid Babar, Chuan Jiang, Gianfranco Ciardo, and Andrew Miner. Binary decision diagrams with edge-specified reductions. In *TACAS 2019*, pages 303–318. Springer-Verlag, 2019.
- [C22] Yaping Jing and Andrew S. Miner. Action and state based computation tree measurement language and algorithms. In *QEST 2018*, LNCS 11024, pages 190–206. Springer-Verlag, 2018.
- [C21] Elvio Gilberto Amparore, Susanna Donatelli, Marco Beccuti, Giulio Garbi, and Andrew Miner. Decision diagrams for Petri nets: which variable ordering? In *Proceedings of the International Workshop on Petri Nets and Software Engineering*, pages 31–50, 2017.
- [C20] Chuan Jiang, Junaid Babar, Gianfranco Ciardo, Andrew S. Miner, and Benjamin Smith. Variable reordering in binary decision diagrams. In *Proc. IWLS*, pages 346–352, 2017.
- [C19] Pietro Piazzolla, Gianfranco Ciardo, and Andrew Miner. Power consumption analysis of replicated virtual applications. In *22th Int. Conf. on Analytical and Stochastic Modelling Techniques and Applications (ASMTA'15)*, LNCS 9081, pages 188–202, May 2015.
- [C18] Samuel J. Ellis, Eric R. Henderson, Titus H. Klinge, James I. Lathrop, Jack H. Lutz, Robyn R. Lutz, Divita Mathur, and Andrew S. Miner. Automated requirements analysis for a molecular watchdog timer. In *Proceedings of the 29th ACM/IEEE International Conference on Automated Software Engineering, ASE '14*, pages 767–778, New York, NY, USA, 2014. ACM.

- [C17] Junaid Babar and Andrew Miner. Explicit state space and Markov chain generation using decision diagrams. In *11th European Workshop on Performance Engineering (EPEW'14)*, LNCS 8721, pages 240–254, September 2014.
- [C16] Junaid Babar and Andrew Miner. Meddly: Multi-terminal and Edge-valued Decision Diagram Library. In Gianfranco Ciardo and Roberto Segala, editors, *7th Int. Conf. on Quantitative Evaluation of Systems (QEST'10)*, pages 195–196, Williamsburg, VA, USA, September 2010.
- [C15] Andrew S. Miner and Yaping Jing. A formal language toward the unification of model checking and performance evaluation. In *17th Int. Conf. on Analytical and Stochastic Modelling Techniques and Applications (ASMTA'10)*, LNCS 6148, pages 130–144, June 2010.
- [C14] Junaid Babar, Marco Beccuti, Susanna Donatelli, and Andrew Miner. GreatSPN enhanced with decision diagram data structures. In *Application and Theory of Petri Nets 2010 (Proc. 31st Int. Conf. on Applications and Theory of Petri Nets)*, LNCS 6128, pages 308–317, June 2010.
- [C13] Andrew S. Miner. Saturation for a general class of models. In Giuliana Franceschinis, Joost-Pieter Katoen, and Murray Woodside, editors, *1st Int. Conf. on Quantitative Evaluation of Systems (QEST'04)*, pages 282–291, Enschede, The Netherlands, September 2004.
- [C12] Andrew S. Miner and Shuxing Cheng. Improving efficiency of implicit Markov chain state classification. In Giuliana Franceschinis, Joost-Pieter Katoen, and Murray Woodside, editors, *1st Int. Conf. on Quantitative Evaluation of Systems (QEST'04)*, pages 262–271, Enschede, The Netherlands, September 2004.
- [C11] Yanxin Wang, Johnny Wong, and Andrew Miner. Novel machine learning techniques for anomaly intrusion detection. In *Proceedings of the 10th Americas Conf. on Information Systems*, pages 4433–4440, New York, NY, August 2004.
- [C10] Yanxin Wang, Johnny Wong, and Andrew Miner. Anomaly intrusion detection using one class SVM. In *5th Annual IEEE Information Assurance Workshop*, pages 358–364, West Point, NY, June 2004. IEEE.
- [C9] Gianfranco Ciardo, Robert Jones, Andrew Miner, and Radu Siminiceanu. Logical and stochastic modeling with SMART. In Peter Kemper and William H. Sanders, editors, *Proc. 13th Int. Conf. on Modelling Techniques and Tools for Computer Performance Evaluation*, LNCS 2794, pages 78–97, Urbana, IL, USA, September 2003. Springer-Verlag.
- [C8] Andrew S. Miner. Computing response time distributions using stochastic Petri nets and matrix diagrams. In Gianfranco Ciardo and William H. Sanders, editors, *10th Int. Workshop on Petri Nets and Performance Models (PNPM'03)*, pages 10–19, Urbana-Champaign, IL, USA, September 2003. IEEE Comp. Soc. Press.
- [C7] Andrew S. Miner and Shuxing Cheng. Using distance to improve implicit state classification of Markov chains. In *6th Int. Workshop on Performability Modeling of Computer and Communication Systems (PMCCS-6)*, pages 66–69, September 2003.
- [C6] Gianfranco Ciardo, Massimo Forno, Paul Grieco, and Andrew Miner. Comparing implicit representations of large CTMCs. In Amy N. Langville and William J. Stewart, editors, *4th Int. Conf. on the Numerical Solution of Markov Chains (NSMC'03)*, pages 323–327, Urbana, IL, USA, September 2003.
- [C5] Andrew S. Miner. Efficient state space generation of GSPNs using decision diagrams. In *Proc. 2002 Int. Conf. on Dependable Systems and Networks (DSN 2002)*, pages 637–646, Washington, DC, June 2002.
- [C4] Andrew S. Miner. Efficient solution of GSPNs using Canonical Matrix Diagrams. In Reinhard German and Boudewijn Haverkort, editors, *9th Int. Workshop on Petri Nets and Performance Models (PNPM'01)*, pages 101–110, Aachen, Germany, September 2001. IEEE Comp. Soc. Press.

- [C3] Andrew S. Miner, Gianfranco Ciardo, and Susanna Donatelli. Using the exact state space of a Markov model to compute approximate stationary measures. In *Proc. 2000 ACM SIGMETRICS Conf. on Measurement and Modeling of Computer Systems*, pages 207–216, Santa Clara, CA, June 2000.
- [C2] Gianfranco Ciardo and Andrew S. Miner. A data structure for the efficient Kronecker solution of GSPNs. In Peter Buchholz, editor, *8th Int. Workshop on Petri Nets and Performance Models (PNPM'99)*, pages 22–31, Zaragoza, Spain, September 1999. IEEE Comp. Soc. Press.
- [C1] Andrew S. Miner and Gianfranco Ciardo. Efficient reachability set generation and storage using decision diagrams. In H.C.M. Kleijn and Susanna Donatelli, editors, *Application and Theory of Petri Nets 1999 (Proc. 20th Int. Conf. on Applications and Theory of Petri Nets)*, LNCS 1639, pages 6–25, Williamsburg, VA, USA, June 1999. Springer-Verlag.
- [C0] Gianfranco Ciardo and Andrew S. Miner. Storage alternatives for large structured state spaces. In R. Marie, B. Plateau, M. Calzarossa, and G. Rubino, editors, *Proc. 9th Int. Conf. on Modelling Techniques and Tools for Computer Performance Evaluation*, LNCS 1245, pages 44–57, Saint Malo, France, June 1997. Springer-Verlag.

## INVITED PAPERS

- [I0] Gianfranco Ciardo and Andrew S. Miner. Structural approaches for SPN analysis. In *High Performance Computing 2000, Grand Challenges in Computer Simulation*, pages 345–356, Washington, DC, April 2000.

## MISCELLANEOUS PUBLICATIONS

- [M9] Gianfranco Ciardo, Andrew S. Miner, Min Wan, and Andy Jinqing Yu. Approximating stationary measures of structured continuous-time Markov models using matrix diagrams. In *Performance (poster presentation)*, Cologne, Germany, October 2007.
- [M8] Andrew S. Miner and Samik Basu. Verification of software via integration of design and implementation. In *Parallel and Distributed Processing Symposium, 2006*, April 2006.
- [M7] Yanxin Wang, Andrew S. Miner, Johnny Wong, and Prem Uppuluri. Improving feature selection in anomaly intrusion detection using specifications. In *Int. Conf. on Distributed Computing and Internet Technology*, LNCS 3347, page 468. Springer-Verlag, December 2004.
- [M6] Gianfranco Ciardo and Andrew S. Miner. SMART: the Stochastic Model checking Analyzer for Reliability and Timing. In Giuliana Franceschinis, Joost-Pieter Katoen, and Murray Woodside, editors, *1st Int. Conf. on Quantitative Evaluation of Systems (QEST'04)*, pages 338–339, Enschede, The Netherlands, September 2004.
- [M5] Gianfranco Ciardo, Robert L. Jones, Robert M. Marmorstein, Andrew S. Miner, and Radu Siminiceanu. SMART: Stochastic Model-checking Analyzer for Reliability and Timing. In *Proc. Int. Conf. on Dependable Systems & Networks (DSN)*, page 545, Washington, D.C., USA, June 2002.
- [M4] Gianfranco Ciardo, Robert L. Jones, Andrew S. Miner, and Radu Siminiceanu. SMART: Stochastic Model Analyzer for Reliability and Timing. In Peter Kemper, editor, *Tools of Int. Multiconf. Measurement, Modelling and Evaluation of Computer-Communication Systems*, pages 29–34, Aachen, Germany, September 2001.
- [M3] Andrew S. Miner. *Data Structures for the Analysis of Large Structured Markov Models*. PhD thesis, The College of William and Mary, Williamsburg, VA, 2000.

- [M2] Gianfranco Ciardo and Andrew S. Miner. SMART: Simulation and Markovian Analyzer for Reliability and Timing. In *Tool Descriptions from the 9th Int. Conf. on Modelling Techniques and Tools for Computer Performance Evaluation and the 7th Int. Workshop on Petri Nets and Performance Models*, pages 41–43, St. Malo, France, June 1997.
- [M1] Gianfranco Ciardo and Andrew S. Miner. SMART: Simulation and Markovian Analyzer for Reliability and Timing. In *Proc. IEEE International Computer Performance and Dependability Symposium (IPDS'96)*, page 60, Urbana-Champaign, IL, USA, September 1996. IEEE Comp. Soc. Press.
- [M0] David M. Nicol and Andrew S. Miner. The fluid stochastic Petri net simulator. In *6th Int. Workshop on Petri Nets and Performance Models (PNPM'95)*, pages 214–215, Durham, NC, October 1995. IEEE Comp. Soc. Press.

## ONLINE SOFTWARE

- [S2] MEDDLY webpage. <https://asminer.github.io/meddly/>.
- [S1] MEDDLY webpage. <http://meddly.sourceforge.net>.
- [S0] SMART webpage. <http://smart.cs.iastate.edu>.