

ANDREW S. MINER

Associate Professor
Department of Computer Science
Iowa State University
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RESEARCH INTERESTS

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

EDUCATION

Ph.D.	<i>July 2000</i>	Computer Science College of William and Mary, Williamsburg, VA. Dissertation: “Data Structures for the Analysis of Large Structured Markov Models” [T0]. Advisor: DR. GIANFRANCO CIARDO
M.S.	<i>May 1995</i>	Computer Science College of William and Mary, Williamsburg, VA.
B.S.	<i>May 1993</i>	Physics and Computer Science Randolph–Macon College, Ashland, VA.

ACADEMIC POSITIONS

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

SPONSORED FUNDING

<i>Oct. 2024 — Sep. 2027</i>	NSF, #2422175, Computing and Communication Foundations (\$75,000), Co-I “Collaborative Research: FMITF: Track III: Integrating Formal Methods into the Foundational Undergraduate Curriculum”
<i>Oct. 2022 — Sep. 2025 extended to Jun. 2027</i>	NSF, #2212142, Computing and Communication Foundations (\$716,000), PI “SHF: Medium: Improving the Efficiency and Applicability of Decision Diagrams” Publications: [C29], [C30]
<i>Jan. 2017 — Dec. 2019 extended to Dec. 2020</i>	NSF, #1642397, Advanced Cyberinfrastructure (\$498,672), PI “SI2—SSE: A Next-Generation Decision Diagram Library” Software: [S2] Publications: [C20], [C23], [C24], [C26] [C27]
<i>Nov. 2016 — Apr. 2017</i>	NSF, #1707092, Computing and Communication Foundations (\$9,994), PI “Midwest Verification Day 2016”
<i>Mar. 2010 — Feb. 2015 extended to Feb. 2017</i>	NSF, #0954132, Computing and Communication Foundations (\$397,478), Co-I “CAREER: Advanced Decision Procedures for Words, Trees, and Lists” (Transferred from PI Ting Zhang, <i>Feb. 2015</i>)
<i>Aug. 2006 — Jul. 2011 extended to Jul. 2014</i>	NSF, #0546041, Computer Systems Research (\$400,000), PI “CAREER: Composition approaches for the analysis of complex systems” Software: [S1] Publications: [J05], [J06], [J07], [J08], [M09], [C14], [C15], [C16], [C17]
<i>Jan. 2007 — Sep. 2007</i>	Rockwell Collins, Inc. (\$36,662), Co-I “Addressing Resource Allocation Problem in IMA Software Design”
<i>Sep. 2005 — Aug. 2006</i>	NSF, #0509340, Computer Systems Research Program (\$49,942), PI “Software Verification Using Plug and Play Components” Publications: [J05]
<i>Jul. 1998 — Jun. 2000</i>	NASA GSRP Fellowships (\$44,000). “Exact solution techniques for large Markov models”. Publications: [J00], [C01], [C02], [C03]
<i>Aug. 1998 — May 2000</i>	Virginia Space Grant Consortium supplemental grants (\$10,000) “Exact analysis of large Markov models”. Publications: [J00], [C01], [C02], [C03]

INTERNAL FUNDING

<i>Jun. 2016 — Jun. 2017</i>	ELO grant (\$3,000), PI Development and Delivery of Online COMS 252 For updates to COMS 252
<i>May 2011 — Aug. 2012</i>	ELO grant (\$9,000), PI Development and Delivery of Online COMS 252 For converting COMS 252 to online format

TEACHING ACTIVITIES

Courses Taught

COMS 2280	Introduction to Data Structures <i>Fall 2002</i>
COMS 2290	Advanced Programming Techniques (now COMS 3270) <i>Fall 2013, Spring 2013</i>
COMS 2520	Linux Operating System Essentials (Online course) <i>Fall 2026,</i> <i>Fall 2025, Fall 2024, Fall 2023, Fall 2022, Fall 2021, Fall 2020,</i> <i>Fall 2018, Fall 2017, Fall 2016, Fall 2015, Fall 2014, Fall 2013</i>
COMS 2520	Linux Operating System Essentials (In person course) <i>Fall 2012, Fall 2011, Fall 2010, Fall 2009, Fall 2006, Fall 2005, Fall 2004</i>
COMS 3270	Advanced Programming Techniques <i>Spring 2020, Fall 2019</i>
COMS 3520	Introduction to Operating Systems <i>Fall 2002, Fall 2001, Spring 2001</i>
COMS 4900	Independent Study <i>Spring 2015, Fall 2001</i>
COMS 4120/5120	Formal Methods in Software Engineering <i>Spring 2019, Spring 2017, Spring 2016</i>
COMS 4400/5400	Principles and Practice of Compiling <i>Spring 2023, Spring 2022, Spring 2021, Spring 2019, Spring 2018</i>
COMS 4550/5550	Discrete-event Simulation <i>Fall 2015, Fall 2008, Fall 2006, Fall 2005, Fall 2004, Fall 2003</i>
COMS 5010	Computational Methods 1 <i>Fall 2025, Spring 2025</i>
COMS 5560	Analysis algorithms for stochastic models <i>Spring 2012, Spring 2011, Spring 2009, Spring 2007, Spring 2005, Spring 2003</i>

Ph.D. Students Advised (with graduation date)

Current	Jaehyeok Choi (co-advised with Gianfranco Ciardo)
Current	Lichuan Deng (co-advised with Gianfranco Ciardo) Publications: [C30]
Summer 2021	Shruti Biswal Thesis: "Implicit relations and their derivatives for symbolic state space generation" Publications: [C26], [C27] Placement: Mount Holyoke College
Summer 2019	Junaid Babar Thesis: "Decision Diagrams: Extensions and Applications to Reachability Analysis" Publications: [C14], [C16], [C17], [C20], [C23] Placement: Collins Aerospace
Fall 2015	Yaping Jing Thesis: "A Formal Language towards the Unification of Model Checking and Performance Evaluation" Publications: [C15] Placement: Whitman College
Fall 2009	Hsin-yi Jiang (co-advised with Carl Chang) Placement: Microsoft

M.S. Students Advised (with graduation date)

current	Vicky Lee
current	Ryan Holt
Spring 2024	Nathan Meskill (co-advised with Gianfranco Ciardo) Placement: Collins Aerospace
Spring 2022	Yijia Huang Placement: Apple
Fall 2011	Ritu Mundhe Placement: Programmer Analyst, CDS Global
Spring 2010	Nishtha Arora Placement: Software Engineer, Thomson Reuters
Spring 2005	Shuxing Cheng Publications: [C07], [C12] Placement: PhD program, Computer Science, ISU

Ph.D. Defenses (committee member)

Spr 2025 Le Chen (Comp. Sci., Iowa State University)
Fall 2024 Seyedehzahra Hosseini (Comp. Sci., Iowa State University)
Spr 2024 Eshita Zaman (Comp. Sci., Iowa State University)
Sum 2022 Dawn Nye (Comp. Sci., Iowa State University)
Sum 2022 Andrei Migunov (Comp. Sci., Iowa State University)
Spr 2022 Sumon Biswas (Comp. Sci., Iowa State University)
Sum 2021 Zahra Khoshmanesh (Comp. Sci., Iowa State University)
Spr 2019 Chuan Jiang (Comp. Sci., Iowa State University)
Publications: [C20], [C23]
Sum 2016 Titus Klinge (Comp. Sci., Iowa State University)
Publications: [C18], [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)
Spr 2009 Jinchun Xia (Comp. Sci., Iowa State University)
Spr 2008 Marco Beccuti (Comp. Sci., University of Torino, Italy)
Spr 2007 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: [C10], [C11], [M07]

Ph.D. Preliminary Exams (committee member)

Fall 2025 Xiaoyuan Li (Comp. Sci., Iowa State University)
Spr 2024 Seyedehzahra Hosseini (Comp. Sci., Iowa State University)
Spr 2024 Le Chen (Comp. Sci., Iowa State University)
Fall 2022 Eshita Zaman (Comp. Sci., Iowa State University)
Fall 2021 Dawn Nye (Comp. Sci., Iowa State University)
Fall 2021 Andrei Migunov (Comp. Sci., Iowa State University)
Spr 2021 Sumon Biswas (Comp. Sci., Iowa State University)
Fall 2020 Zahra Khoshmanesh (Comp. Sci., Iowa State University)
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 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)

Spr 2024 Alexis Marsh (Comp. Sci., Iowa State University)
Fall 2022 Jiajie Li (Comp. Sci., Iowa State University)
Fall 2021 Sumon Biswas (Comp. Sci., Iowa State University)
Fall 2021 Michael Dixon (Comp. Sci., Iowa State University)
Sum 2020 Wandu Xiong (Comp. Sci., Iowa State University)
Fall 2019 Nitesh Gupta (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

- Teaching Evaluations and Mentoring Committee
Fall 2021 — present

- Representative Assembly Executive Committee, College of Liberal Arts and Sciences
Fall 2022 — Spring 2026
- Representative Assembly, College of Liberal Arts and Sciences
Spring 2020 — Spring 2026
- Software Engineering Curriculum Committee
Spring 2011 — present
- Promotion and Tenure Steering Committee, Department of Computer Science
Sum 2024 — Spring 2024, Sum 2008 — Spring 2009
- DEO Search Advisory Committee
Spring 2024 — Fall 2024
- Computer Science Chair Search Committee, College of Liberal Arts and Sciences
Spring 2019 — Fall 2020
- 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
- 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

Jun. 2026 — present Int. Conf. on Application and Theory of Petri Nets and Concurrency
Sep. 2010 — Sep. 2013 Int. Conf. on Quantitative Evaluation of Systems (QEST)

Program Committee Co-chair

Jun. 2027 Int. Conf. on Application and Theory of Petri Nets and Concurrency, 2027
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 and Concurrency
2012 — 2024

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)
2010 — 2013

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

- Jan. 2024* Department of Computer Science, University of California at Riverside
“RexBDDs: Reduction on Edge, Complement, and Swap Binary Decision Diagrams”
- Nov. 2023* Department of Computer Science, Carnegie Mellon University
“RexBDDs: Reduction on Edge, Complement, and Swap Binary Decision Diagrams”
- Jan. 2022* Informatics Computing Society Conference, Decision Diagrams cluster
“BDDs with edge-specified reduction rules”
- Jun. 2008* Dipartimento di Informatica, Università di Torino
Short course: “Advanced Data Structures and Algorithms”
- Feb. 2005* 2005 SIAM Conference on Computational Science & Engineering
“Representing and Solving Large Markov Chains”
- Jun. 2004* Dipartimento di Informatica, Università di Torino
“An Algebra for Decision Diagrams (The grand unified theory of everything)”
- Dec. 2002* GI/Dagstuhl Research Seminar: Validation of Stochastic Systems
“Symbolic Representations and Analysis of Large State Spaces”
Joint presentation with Dave Parker, University of Birmingham
- Dec. 2000* Dipartimento di Informatica, Università di Torino
“A Novel Approximation Technique based on Kronecker Products, MDDs, and Aggregation”
- Jan. 2000* Colloquium: Department of Computer Science, College of William and Mary
“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], [S1].
Related publications: [J10], [C14], [C16], [C17], [C20], [C21]
- Design and implementation of SMART: Stochastic Model checking Analyzer for Reliability and Timing. Open source. Available online [S0].
Publications: [J03], [J07], [C09], [M01], [M02], [M04], [M05], [M06]

AWARDS

- Article [C18] received “The IFIP TC2 Manfred Paul Award for Excellence in Software: Theory and Practice”
- Conference article [C12] nominated for best paper award (top 7)
- Conference articles [C05], [C09], [C13], [C21], [C23], selected for journal publication in extended form [J01], [J03], [J04], [J10], [J12]
- Member of Φ BK honor society

JOURNAL ARTICLES

- [J13] Elvio G. Amparore, Gianfranco Ciardo, and Andrew S. Miner. The footprint form of a matrix: definition, properties, and an application. *Linear Algebra and Its Applications*, 2022.

- [J12] Junaid Babar, Gianfranco Ciardo, and Andrew Miner. CESRBDDs: binary decision diagrams with complemented edges and edge-specified reductions. *Intl. Jnl. on Software Tools for Technology Transfer*, 2022.
- [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] 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.
- [J09] Yaping Jing and Andrew S. Miner. Computation tree measurement language (CTML). *Formal Aspects of Computing*, 30(3):443–462, 2018.
- [J08] 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. *Performance Evaluation*, 68(5):463–486, 2011.
- [J07] Gianfranco Ciardo, Andrew S. Miner, and Min Wan. Advanced features in SMART: the Stochastic Model checking Analyzer for Reliability and Timing. *SIGMETRICS Performance Evaluation Review*, 36(4):58–63, March 2009.
- [J06] Andrew S. Miner. Decision diagrams for the exact solution of Markov models. *Proceedings in Applied Mathematics and Mechanics (PAMM)*, 7(1):1080701–1080702, 2007.
- [J05] 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.
- [J04] Andrew S. Miner. Saturation for a general class of models. *IEEE Transactions on Software Engineering*, 32(8):559–570, August 2006.
- [J03] Gianfranco Ciardo, Robert Jones, Andrew Miner, and Radu Siminiceanu. Logic and stochastic modeling with SMART. *Performance Evaluation*, 63(6):578–608, June 2006.
- [J02] Gianfranco Ciardo and Andrew S. Miner. Implicit data structures for logic and stochastic systems analysis. *SIGMETRICS Performance Evaluation Review*, 32(4):4–9, March 2005.
- [J01] Andrew S. Miner. Implicit GSPN reachability set generation using decision diagrams. *Performance Evaluation*, 56(1-4):145–165, March 2004.
- [J00] Andrew S. Miner, Gianfranco Ciardo, and Susanna Donatelli. Using the exact state space of a Markov model to compute approximate stationary measures. *SIGMETRICS Performance Evaluation Review*, 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. 2016.
- [B0] Andrew Miner and David Parker. Symbolic representations and analysis of large probabilistic systems. In Christel Baier, Boudewijn R. Haverkort, Holger Hermanns, Joost-Pieter Katoen, and Markus Siegle, editors, *Validation of Stochastic Systems*, LNCS 2925, pages 296–338. 2004.

CONFERENCE PUBLICATIONS (PEER-REVIEWED)

- [C33] Jaehyeok Choi and Andrew S. Miner. Binary decision diagrams unchained. In Bruno Dutertre and Bettina Könighofer, editors, *Proc. 26th Conf. on Formal Methods in Computer-Aided Design (FMCAD 2026)*, pages 439–450. TU Wein Academic Press, September 2026.
- [C32] Eshita Zaman, Christopher Johannsen, Andrew S. Miner, Gianfranco Ciardo, and Samik Basu. CTL model checking partially specified systems. In Ferruccio Damiani and Marie Farrell, editors, *International Conference on Integrated Formal Methods (iFM)*, pages 81–98. Springer Nature Switzerland, 2025.
- [C31] Dave Gomboc, Christian R. Shelton, Andrew S. Miner, and Gianfranco Ciardo. Comparing lossless compression methods for Chess endgame data. In *European Conference on Artificial Intelligence*, 2024.
- [C30] Gianfranco Ciardo, Andrew S. Miner, Lichuan Deng, and Junaid Babar. RexBDDs: Reduction-on-edge complement-and-swap binary decision diagrams. In *Proc. DAC’24*. ACM, June 2024.
- [C29] Gianfranco Ciardo and Andrew S. Miner. Research directions in decision diagram technology. In *2023 IEEE John Vincent Atanasoff Symposium on Modern Computing (JVA)*, pages 46–53. IEEE, July 2023.
- [C28] Michael C. Gertin, Alexis L. Marsh, James I. Lathrop, Myra B. Cohen, Andrew S. Miner, and Titus H. Klinge. Inference and test generation using program invariants in chemical reaction networks. In *44th Intl. Conf. on Software Eng. (ICSE ’22)*. ACM, 2022.
- [C27] Shruti Biswal and Andrew S. Miner. Reachability set generation using hybrid relation compatible saturation. In Sylvain Schmitz and Igor Potapov, editors, *Reachability Problems*, pages 37–51, Cham, 2020. Springer International Publishing.
- [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, 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, *TACAS 2019*, LNCS 11429, pages 50–68, Prague, Czech Republic, April 2019. Springer.
- [C24] Elvio Amparore, Gianfranco Ciardo, Susanna Donatelli, and Andrew Miner. $iisub\check{c}ranki/sub\check{c}$: A variable order metric for DEDS subject to linear invariants. In *TACAS 2019*, pages 285–302. Springer, April 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, April 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, 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*, 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.
- [C09] Gianfranco Ciardo, Robert Jones, Andrew Miner, and Radu Siminiceanu. Logical and stochastic modeling with SMART. In Peter Kemper and William H. Sanders, editors, *13th Int. Conf. on Modelling Techniques and Tools for Computer Performance Evaluation*, LNCS 2794, pages 78–97, Urbana, IL, USA, September 2003. Springer.
- [C08] 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.
- [C07] 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.
- [C06] 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.
- [C05] Andrew S. Miner. Efficient state space generation of GSPNs using decision diagrams. In *2002 Int. Conf. on Dependable Systems and Networks (DSN 2002)*, pages 637–646, Washington, DC, June 2002.

- [C04] 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.
- [C03] Andrew S. Miner, Gianfranco Ciardo, and Susanna Donatelli. Using the exact state space of a markov model to compute approximate stationary measures. In *2000 ACM SIGMETRICS Conf. on Measurement and Modeling of Computer Systems*, pages 207–216, Santa Clara, CA, June 2000.
- [C02] 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.
- [C01] 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*, LNCS 1639, pages 6–25, Williamsburg, VA, USA, June 1999. Springer.
- [C00] Gianfranco Ciardo and Andrew S. Miner. Storage alternatives for large structured state spaces. In R. Marie, B. Plateau, M. Calzarossa, and G. Rubino, editors, *9th Int. Conf. on Modelling Techniques and Tools for Computer Performance Evaluation*, LNCS 1245, pages 44–57, Saint Malo, France, June 1997. Springer.

MISCELLANEOUS PUBLICATIONS

- [M10] Gianfranco Ciardo, Andrew Miner, Lichuan Deng, and Junaid Babar. RexBDDs: Reduction-on-edge complement-and-swap binary decision diagrams. In *DAC 2023 (Work-in-Progress Poster)*, July 2023.
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