Jared Saia

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Research Profile

Theory and algorithms for reliable computation in large networks of unreliable or adversarial components. Research spans distributed computing, cybersecurity, game theory, and the use of eigenvalues and eigenvectors in algorithm design and analysis.

- **Secure distributed computation:** scalable Byzantine agreement, consensus, secure multiparty computation, and self-healing networks.
- **Resource-efficient security:** defenses against denial-of-service and algorithmic complexity attacks, where defender costs grow asymptotically more slowly than attacker costs.
- **Interdisciplinary algorithms:** robotic boundary tracing and plume monitoring; collaborative target search; and analysis of social and biological networks.

Academic Appointments

2013–present	**Professor**, Computer Science, University of New Mexico.
2008–2013	**Associate Professor**, Computer Science, University of New Mexico.
2002–2008	**Assistant Professor**, Computer Science, University of New Mexico.
2011–2015	**Associate Chair**, Computer Science, University of New Mexico.

Visiting Appointments

June–July 2017	Academic Visitor, Computer Science, Loughborough University, United Kingdom; research collaboration with Amitabh Trehan.
June–July 2016	Visiting Professor, Nagoya Institute of Technology, Japan; sabbatical research visit hosted by Taisuke Izumi.
May–June 2015	Visiting Professor, Computer Science, Aarhus University, Denmark; sabbatical research visit hosted by Peter Bro Miltersen.
Dec. 2008–May 2009	Visiting Associate Professor, Computer Science, Sapienza University of Rome, Italy; sabbatical visit hosted by Stefano Leonardi.
Aug.–Dec. 2008	Visiting Associate Professor, Information Systems, Universitat Politècnica de Catalunya, Barcelona, Spain; sabbatical visit hosted by Josep Diaz.

Education

PhD, Computer Science and Engineering, University of Washington June 2002
Dissertation: "Algorithms for Managing Data in Distributed Systems." Advisor: Anna Karlin.

BS, Computer Science, Stanford University June 1993

Career Highlights

- **Research recognition:** National Science Foundation Faculty Early Career Development (CAREER) Award; University of New Mexico School of Engineering junior and senior faculty research awards; best-paper recognition at ACM Symposium on Principles of Distributed Computing (PODC), International Conference on Distributed Computing and Networking (ICDCN), and International Colloquium on Structural Information and Communication Complexity (SIROCCO); and the University of New Mexico TEAM Ovation Award as a member of the National Science Foundation-funded VolCAN project, "NRI: INT: Adaptive Bio-inspired Co-Robot Algorithms for Volcano Monitoring" (NSF IIS-2024520).
- **Sustained research support:** $6.37 million in awarded and confirmed University of New Mexico support, including $3.31 million on projects led as Lead PI and the confirmed $200,000 Mississippi State University-to-University of New Mexico Translation to Practice–Explore (TTP-E) subaward.
- **Mentoring:** 11 completed PhDs, including eight with distinction and two coadvised, 10 completed MS students, and one postdoctoral mentee. Alumni have pursued research and leadership careers in universities, national laboratories, and industry. Undergraduate research and faculty mentoring are documented below.
- **Intellectual leadership:** development of the University of New Mexico theory research community; international conference and workshop leadership; University of New Mexico–Sandia National Laboratories workshops connecting theory, economics, and cybersecurity; and interdisciplinary collaborations in robotics, biology, and radiation therapy.

Awards and Honors

2025	**Best Paper Award**, International Colloquium on Structural Information and Communication Complexity (SIROCCO), "Bankrupting DoS Attackers."
2024	**Best Paper Award**, International Conference on Distributed Computing and Networking (ICDCN), "Defending Hash Tables from Subterfuge with Depth Charge."
2024	**Best Paper Award nominee**, IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR), "Navigating the Edge: UAS Boundary Tracing for Efficient Volcanic Plume Monitoring."
2023	**TEAM Ovation Award**, University of New Mexico, as a member of the National Science Foundation-funded VolCAN project, "NRI: INT: Adaptive Bio-inspired Co-Robot Algorithms for Volcano Monitoring" (NSF IIS-2024520).
2023	**Best Student Paper Award**, International Colloquium on Structural Information and Communication Complexity (SIROCCO), awarded to advisee Abir Islam for our coauthored "Boundary Sketching with Asymptotically Optimal Distance and Rotation."
2020	**Best Paper Award**, International Colloquium on Structural Information and Communication Complexity (SIROCCO), "ANTS on a Plane."
2020	**Highlighted Paper**, International Conference on Distributed Computing and Networking (ICDCN), "A Scalable Algorithm for Multiparty Interactive Communication with Private Channels"; one of four highlighted papers in the distributed-computing track.
2014	**Best Paper Award, Distributed Computing Track**, International Conference on Distributed Computing and Networking (ICDCN), "Quorums Quicken Queries: Efficient Asynchronous Secure Multiparty Computation."
2014	Nominee, University of New Mexico Outstanding Teacher of the Year.
2011	**Senior Faculty Research Excellence Award**, University of New Mexico School of Engineering.

2011	Nominee, University of New Mexico Outstanding Teacher of the Year.
2010	**Best Paper Award**, ACM Symposium on Principles of Distributed Computing (PODC), "Breaking the $O(n^2)$ Bit Barrier: Scalable Byzantine Agreement with an Adaptive Adversary."
2007	**Junior Faculty Research Excellence Award**, University of New Mexico School of Engineering.
2007	**National Science Foundation Faculty Early Career Development (CAREER) Award**.
1995	**Excellence in Research / Best Paper Award**, Japanese Society for Artificial Intelligence, for coauthored work on a massively parallel association approach to spoken-language translation.

Sponsored Research

Total awarded and confirmed University of New Mexico support: $6,366,050, including **$3,308,395 as Lead PI**. Amounts are the University of New Mexico share, including shared team awards; they are not individual allocations.

Grants, Subawards, and Research Contracts

National Science Foundation (NSF) CCF-2552880 **$402,603**
Collaborative Research: AF: Resource-Efficient Byzantine Protocols
Lead PI; August 15, 2026–July 31, 2030. Collaborative research with Gopal Pandurangan and Peter Robinson.

National Science Foundation (NSF) CCF-2144410; TTP-E amendment 005 **$200,000**
TTP-E: An Estimator-Based Pricing Defence for DoS Attacks
co-PI; confirmed two-year subaward. Via Mississippi State University.

National Science Foundation (NSF) CNS-2210299 **$300,000**
Collaborative Research: SaTC: CORE: Small: Bankrupting Attackers in Dynamic Networks
Lead PI; 2022–2027. Collaborative research with Maxwell Young.

National Science Foundation (NSF) IIS-2024520 **$1,495,437**
NRI: INT: Adaptive Bio-inspired Co-Robot Algorithms for Volcano Monitoring
co-PI; 2020–2025. Team led by Melanie Moses, with Rafael Fierro, G. Matthew Fricke, and Tobias Fischer.

Sandia National Laboratories **$16,000**
Information-Theoretically-Secure Distributed Machine Learning
co-PI; 2020–2021. Jared Saia.

National Science Foundation (NSF) CNS-1816250 **$250,981**
SaTC: CORE: Small: Collaborative: Proof of Work Without All the Work
Lead PI; 2018–2022. Collaborative research with Maxwell Young.

Sandia National Laboratories **$16,000**
Information-Theoretically-Secure Distributed Machine Learning
co-PI; 2018–2019. Jared Saia.

National Science Foundation (NSF) CCF-1320994 **$399,999**
AF: Small: Quorums Quicken Queries: Towards Practical Secure Multiparty Computation
Lead PI; 2013–2018. Jared Saia.

National Science Foundation (NSF) CNS-1318880 **$249,801**
TWC: Small: Collaborative: Cost-Competitive Analysis: A New Tool for Designing Secure Systems
Lead PI; 2013–2018. Collaborative research with Seth Pettie.

Sandia National Laboratories **$147,166**
Cyber Graph Queries for Geographically Distributed Data Centers
co-PI; 2012–2014. Jared Saia.

National Science Foundation (NSF) REU supplement to CCF-1117985 **$17,069**
Computing without a Leader: Building Blocks for Internet-Scale, Robust Computing
Lead PI; 2012. Research Experiences for Undergraduates supplement.

National Science Foundation (NSF) CCF-1117985 **$365,710**
Computing without a Leader: Building Blocks for Internet-Scale, Robust Computing
Lead PI; 2011–2016. Base award; Research Experiences for Undergraduates supplement listed separately.

Intelligence Advanced Research Projects Activity (IARPA) **$202,500**
Analysis and Mitigation of Internet Censorship
Lead PI; 2011–2012. With Jedidiah Crandall and Joshua Karlin.

Army Research Laboratory; University of Maryland subaward Z847708 **$80,000**
Developing a Science of Cybersecurity
co-PI; 2011–2012. Project led by Jonathan Katz, with William Arbaugh; University of New Mexico proposal record 37016.

National Science Foundation (NSF) CNS-1017509 **$299,732**
NetSE: Small: Beyond Tit-for-Tat: New Techniques for Collaboration in Network Security Games
Lead PI; 2010–2015. Jared Saia.

Air Force Office of Scientific Research (AFOSR), DURIP-10-054 **$58,189**
Helix Project Testbed: Towards the Self-Regenerative Incorruptible Enterprise
co-PI; 2010. Defense University Research Instrumentation Program (DURIP); multi-institution team led by John Knight.

National Science Foundation (NSF) CNS-0644058 **$400,000**
CAREER: Foundations for Attack-Resistant, Collaborative Peer-to-peer Systems
Lead PI; 2007–2014. Jared Saia.

National Science Foundation (NSF) IIS-0705477 **$294,863**
III-CXT: Collaborative Research: Computational Methods for Understanding Social Interactions in Animal Populations
co-PI; 2007–2011. Collaborative research with Tanya Berger-Wolf and Daniel Rubenstein.

Air Force Office of Scientific Research (AFOSR), FA9550-07-1-0532 **$750,000**
MURI: Helix: A Self-Regenerative Architecture for Incorruptible Enterprise
co-PI; 2007–2012. Multidisciplinary University Research Initiative (MURI); project led by John Knight.

National Science Foundation (NSF) CCR-0313160 **$340,000**
ITR: Scalable, Attack-Resistant Peer-to-Peer Networks
Lead PI; 2003–2007. Jared Saia.

Sandia University Research Program (SURP), 191445 **$80,000**
Scalable, Attack-Resistant Peer-to-peer Networks
Lead PI; 2002–2004. Jared Saia.

Patent Application

Co-inventor, "UAS Plume Boundary Tracing Method and System." PCT application **PCT/US2026/030634**, 2026. Preceded by provisional application **63/816,154**, "Drone Swarm Gas Leak Monitoring System," filed June 2025. Patent application, not an issued patent.

Research Mentoring

Completed degrees: 11 PhDs, including eight with distinction and two coadvised; 10 MS students. **Postdoctoral mentoring:** one postdoctoral researcher. Listed career outcomes describe documented appointments and are not necessarily current employment.

Doctoral Graduates

Abir Islam PhD with distinction, 2025
"Algorithms to Estimate Contours: Two Applications of Analytical Tools in Differential Geometry and Topology."
Career outcome: Research Scientist, Meta. Best Student Paper Award, International Colloquium on Structural Information and Communication Complexity (SIROCCO), 2023.

Diksha Gupta PhD with distinction, 2020
"Sybil Defense Using Efficient Resource Burning."
Career outcome: Postdoctoral Research Associate, Biocomplexity Institute, University of Virginia.

Abhinav Aggarwal PhD, 2019
"Thwarting Adversaries with Randomness and Irrationality."
Career outcome: AI Technical Lead, Meta.

Jeffrey Knockel PhD with distinction, 2018
"Measuring Decentralization of Chinese Censorship in Three Industry Segments." Coadvised with Jedidiah Crandall.
Career outcome: Senior Fellow, Citizen Lab, University of Toronto.

Ash (Mahdi) Zamani PhD with distinction, 2016
"Scalable and Robust Distributed Algorithms for Privacy-Preserving Applications."
Career outcome: Co-Founder, Optimex; formerly Director, Crypto Solutions, Visa; earlier research appointments at Yale University and DFINITY. **Sigma Xi Award for Excellence in Graduate Research, 2015.**

Mahnush Movahedi PhD with distinction, 2016
"Resource-Efficient and Robust Distributed Computing."
Career outcome: Research Scientist, Amazon; earlier research appointments at Yale University and Visa Research.

George Helmy Saad PhD with distinction, 2015
"Selfishness and Malice in Distributed Systems."
Career outcome: Senior Software Engineer, Atlassian (appointment beginning 2025).

Olumuyiwa O. Oluwasanmi PhD, 2011
"Practical, Scalable Algorithms for Byzantine Agreement."
Career outcome: Data Center Capacity Engineer, Meta (2020–2025); earlier Process Engineer, Intel.

Navin Rustagi PhD, 2010
"Security in Network Games."
Career outcome: Solution Manager, McKinsey & Company (through 2024); Senior AI Solution Manager, C3 AI (2024–2026); earlier postdoctoral appointment at Rice University.

Amitabh Trehan PhD with distinction, 2010
"Algorithms for Self-Healing Networks." **University of New Mexico Dean's Dissertation Award, 2010.**
Career outcome: Associate Professor, Durham University; earlier postdoctoral appointment at Technion–Israel Institute of Technology.

Vishal Sanwalani PhD with distinction, 2005
"Applications of the Probabilistic Method to Random Graphs." Coadvised with Cristopher Moore.
Career outcome: Documented postdoctoral appointments at the University of Waterloo and Microsoft Research.

Postdoctoral Researcher

Varsha Dani 2013–2015

Supported and mentored as a University of New Mexico postdoctoral researcher. Coauthored work on secure multiparty computation, rational secret sharing, interactive communication, random walks, boundary sketching, and plume monitoring. Subsequent appointment: Assistant Professor, Rochester Institute of Technology.

MS Graduates

Aaron Kearns MS, 2016

Cooperative computation over distributed graph data, including clique detection with limited communication and information sharing. *Career outcome:* Albuquerque Seismic Laboratory.

Jenny Chen MS, 2014

Self-healing peer-to-peer networks; simulation of the Forgiving Graph algorithm under adversarial node deletions. *Career outcome:* Software industry, Silicon Valley.

Yamel Rodriguez MS, 2010

Scalable rational secret sharing: game-theoretic protocols for secure computation among self-interested participants. *Career outcome:* Financial technology industry, Mexico City.

Bo Wu MS, 2009

Attack-resistant distributed frequency counting, with applications to spam detection, malware detection, and distributed data mining. *Career outcome:* Microsoft.

Vikrant Gaur MS, 2007

Leaf-sequencing algorithms to reduce the number of multileaf-collimator apertures in intensity-modulated radiation therapy. Coadvised with Shuang (Sean) Luan. *Career outcome:* Rockwell Collins.

IChing Chang Boman MS with distinction, 2006

Self-healing algorithms for reconfigurable networks. *Career outcome:* Gigablast.

Maxwell Young MS with distinction, 2006

Byzantine-resilient peer-to-peer networks, including making the Chord distributed hash table robust to malicious participants. *Career outcome:* PhD, University of Waterloo; Associate Professor, Mississippi State University. Continuing collaborator on National Science Foundation-funded security research.

Jake Proctor MS with distinction, 2005

Algorithms for reducing radiation-therapy delivery time. Coadvised with Shuang (Sean) Luan. *Career outcome:* Sandia National Laboratories.

John Alphonse MS, 2005

Scalable and secure distributed algorithms, including reducing search latency in unstructured peer-to-peer networks. *Career outcome:* First position at Microsoft.

Florina Cazacu MS, 2004

Reducing communication overhead in Byzantine agreement. *Career outcome:* Waters Software.

Undergraduate Research Mentoring

- **Jacquelynn (Jackie) Javier**, summer 2025. Volcano Co-Robot Adaptive Natural Algorithms (VolCAN) research on contour geometry, boundary tracing, and simulation; supported undergraduate research.
- **Connor Gardiner**, summer 2025. Volcano Co-Robot Adaptive Natural Algorithms (VolCAN) contour geometry and simulation; undergraduate research support shared with Amanda Bienz.
- **Abigail Soward**, summer 2018. Implemented and evaluated resource-burning protocols (CCOM and GMCOM), churn measurement, and adversarial simulations, working with doctoral advisee Diksha Gupta.
- **Joe Collard**, 2011–2013. Mathematical modeling and simulation of collective nest selection in ant colonies. Subsequent doctoral study at the University of Massachusetts Amherst.
- **Charles (Charlie) Clauss**, 2012–2013. Mathematical modeling of collective nest selection in ant colonies; implemented and evaluated recurrence relations in MATLAB.
- **Daniel di Francesco**, 2007–2008. Graph algorithms for identifying clusters in dynamic social networks. Subsequent master's study at Stanford University.
- **Yintao Yu**, 2007–2008. Algorithms for identifying spread blockers in dynamic networks. Subsequent doctoral study at the University of Illinois Urbana-Champaign.

Additional Research Mentoring and Directed Study

- **Bethany Pena**, 2025. Research on contour geometry and boundary-tracing simulation with Abir Islam and Varsha Dani.
- **Bryce Palmer**, fall 2024. CS 551 directed study in game theory, markets, and distributed systems.
- **Matthew Rackley**, summer 2024. Supervised independent study: "Distributed Algorithms for Information Aggregation via Drones."
- **Gregory Jacobus**, spring 2022. Directed reading and a survey of anonymity systems, including Tor and I2P.
- **Scott Lewis**, MS research student, circa 2003. Coauthored work on scalable Byzantine agreement and random-peer sampling in peer-to-peer networks.

Faculty Mentoring and the UNM Theory Community

- Led the University of New Mexico computer science theory research community through seminars, visitor recruitment, faculty–student interactions, and the initiation of collaborations.
- **Shuang (Sean) Luan:** early-career mentoring and collaborative work on approximation algorithms for radiation therapy, including publications involving master's advisee Maxwell Young.

- **Thomas P. Hayes:** research collaborations and joint papers; development, motivation, and writing of a joint grant proposal. Contributed to Hayes's successful National Science Foundation Faculty Early Career Development (CAREER) proposal through discussions of research directions, strengthening its motivation, and extensive feedback on drafts.

Current Graduate Advisees

- **Valerie Barker**, Research: efficient secure multiparty computation; Beaver triples and Fourier-transform methods.
- **Joel Villarreal**, Research: eigenvector projections and spectral methods for reliable distributed computation.
- **Jonathan Lloyd**, Research: Spectral Preserving Projections.

Teaching

University of New Mexico

CS 561: Data Structures and Algorithms Graduate

Fall 2006, 2007, 2009, 2010, 2011, 2012, 2013, 2014, 2016, 2017, 2018, 2019, 2020, 2021, 2023, 2024, 2025, and 2026.

CS 491/591: Economics of Distributed Systems Spring 2025

CS 591: Bitcoins, Blockchains, and Beyond Spring 2019, 2021

CS 591: Game Theory and Social Computing Spring 2011

CS 591: Algorithms in the Real World Fall 2002

CS 510/591: Randomized Algorithms Fall 2004; Spring 2007

CS 511/591: Cybersecurity: A Theoretical Approach Spring 2006; Fall 2007

CS 506: Computational Geometry Spring 2017, 2020, 2024, 2026

CS 427/527: Introduction to Artificial Intelligence Spring 2008, 2018

CS 362: Data Structures and Algorithms II Undergraduate

Fall 2003, 2004; Spring 2005, 2006, 2007, 2008, 2021, 2024, 2025, and 2026.

CS 361: Data Structures and Algorithms Spring 2003, 2004; Fall 2005

CS 261: Mathematical Foundations of Computer Science Spring 2010, 2019

Teaching at Other Institutions

- **Sapienza University of Rome**, "Conflict in Networks," five-lecture course, spring 2009.
- **Universitat Politècnica de Catalunya**, "Conflict in Networks," ten-lecture course, fall 2008.
- **University of Washington Educational Outreach**, lecturer, "Introduction to C++," fall 1997. Designed and taught lectures, assignments, examinations, and projects for professional students.
- **University of Washington**, teaching assistant, fall 1996–fall 2001. Courses: CSE 143 (Computer Programming II), 401 (Compiler Design), 421 (Algorithms), 473 (Artificial Intelligence), and Professional Master's Program courses 589 (Applied Algorithms), 592 (Applications of Artificial Intelligence), and 598 (Complexity Theory).

Educational Approach and Program Development

Introduce students to fundamental questions and then teach broadly applicable tools for mathematical thinking. In algorithms courses, combine proof-based analysis with collaborative problem solving. Research mentoring emphasizes tools that students can apply beyond a single project.

- Redesigned CS 506: Computational Geometry to focus on high-dimensional geometry, with applications in machine learning and big data.
- Creating a course on Economics of Distributed Systems, with topics including blockchains, smart contracts, and peer-to-peer microeconomies.
- Led revision of the University of New Mexico Computer Science master's comprehensive-examination process, including course requirements and oral examinations, 2008.
- As associate chair, led graduate curriculum work, coordinated master's oral examinations and teaching-assistant assignments, and addressed student academic concerns, 2011–2015.
- Founded and ran orientation for incoming master's and doctoral students, 2003–2007.

Research Leadership and Professional Service

Sponsoring societies: Association for Computing Machinery (ACM); Institute of Electrical and Electronics Engineers (IEEE); Society for Industrial and Applied Mathematics (SIAM).

Conference and Workshop Leadership

- **General Co-chair**, International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), 2015; **Track Chair, Safety in Malicious Environment**, International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), 2018.
- **Co-organizer**, Workshop on Competitive Economics of Cybersecurity (CEC), University of New Mexico, May 18, 2024, and Sandia National Laboratories, November 16, 2018. Jointly organized with Maxwell Young and Cynthia Phillips, among others; brought together academic and national-laboratory researchers on resource tradeoffs, game theory, and security.
- **Co-organizer**, Banff International Research Station (BIRS) workshop on Foundations for a Distributed Ledger, 2020.
- **Co-organizer**, Workshop on Security in Permissionless Systems (SPS), ACM Symposium on Principles of Distributed Computing (PODC), 2019. Jointly organized with Diksha Gupta.
- **Co-chair**, 10th ACM International Workshop on Foundations of Mobile Computing (FOMC), 2014.
- **Workshop chair**, Analysis of Dynamic Networks (ADN), at the SIAM International Conference on Data Mining (SDM), 2009, and the IEEE International Conference on Data Mining (ICDM), 2008.

Program Committees

Conference	Years
ACM Symposium on Principles of Distributed Computing (PODC)	2023, 2021, 2020, 2015, 2011, 2006, 2005
International Symposium on Distributed Computing (DISC)	2024, 2022, 2014
International Conference on Principles of Distributed Systems (OPODIS)	2023, 2021, 2020
Symposium on Algorithmic Foundations of Dynamic Networks (SAND)	2025

Conference	Years
International Colloquium on Structural Information and Communication Complexity (SIROCCO)	2024; appointed for 2027
International Conference on Distributed Computing and Networking (ICDCN)	2026, 2025
International Computing and Combinatorics Conference (COCOON)	2026
Algorithms and Data Structures Symposium (WADS)	2023
Latin American Symposium on Theoretical Informatics (LATIN)	2022, 2018
IEEE International Conference on Distributed Computing Systems (ICDCS)	2020, 2012, 2011
ACM Symposium on Theory of Computing (STOC)	2017
ACM–SIAM Symposium on Discrete Algorithms (SODA)	2012
International Colloquium on Automata, Languages, and Programming (ICALP)	2014
IEEE International Parallel and Distributed Processing Symposium (IPDPS), Algorithms Track	2014, 2010, 2009, 2008
International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)	2021, 2019, 2012
International Conference on Algorithms and Complexity (CIAC)	2010
ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)	2010
ACM Joint Workshop on Foundations of Mobile Computing (DIALM-POMC)	2004

Proposal Panels and Scholarly Reviewing

National Science Foundation proposal-review panelist: 2004, 2005, 2006, 2007, 2014, 2015, 2016, and 2017.

Refereeing: ACM Symposium on Theory of Computing (STOC); IEEE Symposium on Foundations of Computer Science (FOCS); ACM Symposium on Principles of Distributed Computing (PODC); ACM–SIAM Symposium on Discrete Algorithms (SODA); International Colloquium on Automata, Languages, and Programming (ICALP); ACM Symposium on Parallelism in Algorithms and Architectures (SPAA); International Symposium on Distributed Computing (DISC); and IEEE International Conference on Computer Communications (INFOCOM). Journals include *Journal of Experimental Algorithmics*, *Journal of Algorithms*, *Distributed Computing*, and additional computing and networking journals.

University and Department Service

- **Chair, Computer Science Faculty Search Committee**, 2026–2027. Search in theory and algorithms, quantum computing, and cybersecurity; recruitment and coordination with colleagues across relevant research areas.
- **University of New Mexico Faculty Senate**, 2025; elected for the 2026–2028 term.
- **Associate Chair, University of New Mexico Computer Science**, 2011–2015. Graduate curriculum, master's examinations, teaching-assistant assignments, student academic matters, and acting-chair duties when the chair traveled.
- **Chair, departmental Promotion and Tenure Committee**, 2014, 2015, 2016, 2019, and 2023; member, 2009–2010 and 2012–2013.
- **School of Engineering Promotion and Tenure Committee**, 2013–2015 and 2024–2025.
- **Faculty Hiring Committee**, 2017–2018.

- **Co-organizer, departmental colloquia; organizer, joint University of New Mexico–Sandia National Laboratories distinguished lecturer series**, 2007–2008, 2010–2011, and 2021–2022. Hosted additional theory visitors, including Valerie King in October 2024.
- **Head, graduate admissions committee**, 2011–2012; member, 2003–2007.
- **Head, PhD written comprehensive-examination committee**, 2012; service on PhD comprehensive examinations beginning in 2002.

Recruitment, Outreach, and Research Communication

Student Recruitment and Community Building

- **Computer Science Recruitment Day**, 2006–2007. Created and served as primary organizer of a research-focused event for more than 100 local high-school students, including demonstrations and short talks.
- **Graduate recruiting leadership**, 2003–2006 and 2010–2011. Contacted prospective students, organized visits, and developed peer recruiting; organized the department's first formal prospective graduate-student visit event in 2006.
- Created the alumni-based recruiting flyer "CS@UNM, Our Alumni Speak for Themselves," and distributed it to more than 100 computer science programs, 2010–2011.
- Edited, designed, and arranged publication of the department's first recruiting brochure, 2005; created its first recruiting video with faculty and student interviews, 2006.

Publications

Bold author names identify Jared Saia and his current and former University of New Mexico student advisees and postdoctoral mentees. In theoretical computer science, author order is alphabetical. Conference and journal versions are listed separately; brief announcements are identified. The chapter in an edited Lecture Notes in Computer Science volume is listed under book contributions.

Citation snapshot: 4,327 citations; h-index 31 (Google Scholar, November 10, 2026).

Journal Articles

J1 Shafqat Hasan, Umesh Biswas, Thomas Benton Townsend, Dimitrios Michael Manias, **Jared Saia**, and **Maxwell Young**. "Validating Resource-Competitive DDoS Defense Through Experiment." *Future Internet* 18(10), article 541, 2026.

J2 Trisha Chakraborty, **Abir Islam**, Valerie King, Daniel Rayborn, **Jared Saia**, and **Maxwell Young**. "Bankrupting DoS Attackers." *Theoretical Computer Science* 1081, article 116082, 2026.

J3 Trisha Chakraborty, **Jared Saia**, and **Maxwell Young**. "Defending Hash Tables from Algorithmic Complexity Attacks with Resource Burning." *Theoretical Computer Science* 1014, article 114762, 2024.

J4 **Varsha Dani**, **Abir Islam**, and **Jared Saia**. "Boundary Sketching with Asymptotically Optimal Distance and Rotation." *Theoretical Computer Science* 1010, article 114714, 2024.

J5 **Diksha Gupta**, **Jared Saia**, and **Maxwell Young**. "Bankrupting Sybil Despite Churn." *Journal of Computer and System Sciences* 135, pp. 89–124, 2023.

J6 Jonathan Berry, Cynthia A. Phillips, and **Jared Saia**. "Making Social Networks More Human: A Topological Approach." *Statistical Analysis and Data Mining: The ASA Data Science Journal* 12(6), pp. 449–464, 2019.

J7 **Varsha Dani**, Thomas Hayes, **Mahnush Movahedi**, **Jared Saia**, and **Maxwell Young**. "Interactive communication with unknown noise rate." *Information and Computation* 261, pp. 464–486, 2018.

J8 Dan Alistarh, James Aspnes, Valerie King, and **Jared Saia**. "Communication-Efficient Randomized Consensus." *Distributed Computing* 31(6), pp. 489–501, 2018.

J9 Valerie King, Seth Pettie, **Jared Saia**, and **Maxwell Young**. "A resource-competitive jamming defense." *Distributed Computing* 31(6), pp. 419–439, 2018.

J10 **Varsha Dani**, Valerie King, **Mahnush Movahedi**, **Jared Saia**, and **Mahdi Zamani**. "Secure Multi-party Computation in Large Networks." *Distributed Computing* 30(3), pp. 193–229, 2017.

J11 **George Saad** and **Jared Saia**. "A Theoretical and Empirical Evaluation of an Algorithm for Self-healing Computation." *Distributed Computing* 30(6), pp. 391–412, 2017.

J12 Valerie King and **Jared Saia**. "Byzantine Agreement in Expected Polynomial Time." *Journal of the ACM* 63(2), pp. 13:1–13:21, 2016. Corrigendum: arXiv:1812.10169, 2018.

J13 **Varsha Dani**, **Mahnush Movahedi**, and **Jared Saia**. "Scalable Mechanisms for Rational Secret Sharing." *Distributed Computing* 28(3), pp. 171–187, 2015.

J14 Tom Hayes, **Jared Saia**, and **Amitabh Trehan**. "The Forgiving Graph: A distributed data structure for low stretch under adversarial attack." *Distributed Computing* 25(4), pp. 261–278, 2012.

J15 Valerie King and **Jared Saia**. "Breaking the $O(n^2)$ Bit Barrier: Scalable Byzantine agreement with an Adaptive Adversary." *Journal of the ACM* 58(4), pp. 18:1–18:24, 2011.

J16 Valerie King, Cynthia Phillips, **Jared Saia**, and **Maxwell Young**. "Sleeping on the Job: Energy-Efficient and Robust Broadcast for Radio Networks." *Algorithmica* 61(3), pp. 518–554, 2011.

J17 Therese Biedl, Stephane Durocher, Holger H. Hoos, Shuang Luan, **Jared Saia**, and **Maxwell Young**. "A Note on Improving the Performance of Approximation Algorithms for Radiation Therapy." *Information Processing Letters* 111(7), pp. 326–333, 2011.

J18 Bruce Kapron, David Kempe, Valerie King, **Jared Saia**, and **Vishal Sanwalani**. "Fast asynchronous Byzantine agreement and leader election with full information." *ACM Transactions on Algorithms* 6(4), pp. 68:1–68:28, 2010. Invited issue of best papers from the ACM–SIAM Symposium on Discrete Algorithms (SODA), 2008.

J19 Eric Anderson, Joe Hall, Jason Hartline, Michael Hobbes, Anna Karlin, **Jared Saia**, Ram Swaminathan, and John Wilkes. "Algorithms for Data Migration." *Algorithmica* 57(2), pp. 349–380, 2010.

J20 **Jared Saia** and **Maxwell Young**. "Reducing Communication Costs in Robust Peer-to-Peer Networks." *Information Processing Letters* 106(4), pp. 152–158, 2008.

J21 Valerie King, **Scott Lewis**, **Jared Saia**, and **Maxwell Young**. "Choosing a Random Peer in Chord." *Algorithmica* 49(2), pp. 147–169, 2007.

J22 Amos Fiat and **Jared Saia**. "Censorship Resistant Peer-to-peer Networks." *Theory of Computing* 3(1), pp. 1–23, 2007. Invited issue of best papers from the ACM–SIAM Symposium on Discrete Algorithms (SODA), 2002.

J23 Shuang Luan, **Jared Saia**, and **Maxwell Young**. "Approximation Algorithms for Minimizing Segments in Radiation Therapy." *Information Processing Letters* 101(6), pp. 239–244, 2007.

J24 Michael Collins, David Kempe, **Jared Saia**, and **Maxwell Young**. "Nonnegative Integral Subset Representations of Integer Sets." *Information Processing Letters* 101(3), pp. 129–133, 2007.

J25 Tanya Berger-Wolf, Cris Moore, and **Jared Saia**. "A Computational Approach to Animal Breeding." *Journal of Theoretical Biology* 244(3), pp. 433–439, 2007.

J26 Tanya Berger-Wolf, William Hart, and **Jared Saia**. "Discrete Sensor Placement Problems in Distribution Networks." *Mathematical and Computer Modelling* 42(13), pp. 1385–1396, 2005.

J27 Tracy Kimbrel and **Jared Saia**. "On-line and Off-line Preemptive Two-Machine Job Shop Scheduling." *Journal of Scheduling* 3(6), pp. 355–364, 2000.

J28 Ezra Black, Stephen Eubank, Hideki Kashioka, and **Jared Saia**. "Reinventing Part-of-Speech Tagging." *Journal of Natural Language Processing* 5(1), pp. 3–23, 1998.

Conference and Workshop Publications

C1 **Diksha Gupta**, **Jared Saia**, and **Maxwell Young**. "Sparser Shuffles Suffice." *International Conference on Distributed Computing and Networking (ICDCN)*, pp. 82–91, 2026.

C2 Trisha Chakraborty, **Abir Islam**, Valerie King, Daniel Rayborn, **Jared Saia**, and **Maxwell Young**. "Bankrupting DoS Attackers." *International Colloquium on Structural Information and Communication Complexity (SIROCCO)*, pp. 211–227, 2025. Best Paper Award.

C3 **Varsha Dani**, Tom Hayes, Seth Pettie, and **Jared Saia**. "Fraud Detection for Random Walks." *Innovations in Theoretical Computer Science Conference (ITCS)*, 2024.

C4 Trisha Chakraborty, **Jared Saia**, and **Maxwell Young**. "Defending Hash Tables from Subterfuge with Depth Charge." *25th International Conference on Distributed Computing and Networking (ICDCN)*, pp. 134–143, 2024. Best Paper Award.

C5 John Ericksen, **Abir Islam**, Carter Frost, Kevin Aubert, G. Matthew Fricke, **Varsha Dani**, Rafael Fierro, Tobias Fischer, Scott Nowicki, **Jared Saia**, and Melanie Moses. "Navigating the Edge: UAS Boundary Tracing for Efficient Volcanic Plume Monitoring." *IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR)*, pp. 52–57, 2024. **Best Paper Award nominee.**

C6 **Varsha Dani**, **Abir Islam**, and **Jared Saia**. "Boundary Sketching with Asymptotically Optimal Distance and Rotation." *International Colloquium on Structural Information and Communication Complexity (SIROCCO)*, pp. 357–385, 2023. Best Student Paper Award.

C7 **Diksha Gupta**, **Jared Saia**, and **Maxwell Young**. "Bankrupting Sybil Despite Churn." *IEEE International Conference on Distributed Computing Systems (ICDCS)*, pp. 425–437, 2021.

C8 John Augustine, Valerie King, Anisur Rahaman Molla, Gopal Pandurangan, and **Jared Saia**. "Scalable and Secure Computation Among Strangers: Message-Competitive Byzantine Protocols." *International Symposium on Distributed Computing (DISC)*, 2020.

C9 **Diksha Gupta**, **Jared Saia**, and **Maxwell Young**. "Resource Burning for Permissionless Systems." *International Colloquium on Structural Information and Communication Complexity (SIROCCO)*, 2020. Invited paper.

C10 **Abhinav Aggarwal** and **Jared Saia**. "ANTS on a Plane." *International Colloquium on Structural Information and Communication Complexity (SIROCCO)*, pp. 47–62, 2020. Best Paper Award.

C11 **Abhinav Aggarwal**, **Varsha Dani**, Thomas P. Hayes, and **Jared Saia**. "A scalable algorithm for multiparty interactive communication with private channels." *International Conference on Distributed Computing and Networking (ICDCN)*, pp. 1–15, 2020. One of 4 "Highlighted Papers" in the distributed-computing track.

C12 **Diksha Gupta**, **Jared Saia**, and **Maxwell Young**. "Peace through superior puzzling: An asymmetric Sybil defense." *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, pp. 1083–1094, 2019.

C13 **Abhinav Aggarwal**, **Varsha Dani**, Thomas P. Hayes, and **Jared Saia**. "Multiparty interactive communication with private channels." *ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 147–149, 2019. *Brief announcement.*,.

C14 **Abhinav Aggarwal**, **Mahnush Movahedi**, **Jared Saia**, and **Mahdi Zamani**. "Bootstrapping public blockchains without a trusted setup." *ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 366–368, 2019. *Brief announcement.*,.

C15 **Abhinav Aggarwal**, William F. Vining, **Diksha Gupta**, **Jared Saia**, and Melanie E. Moses. "A most irrational foraging algorithm." *ACM Symposium on Principles of Distributed Computing (PODC)*, 2019. *Brief announcement.*,.

C16 Mercy Jaiyeola, Kyle Patron, **Jared Saia**, **Maxwell Young**, and Qian M. Zhou. "Tiny Groups Tackle Byzantine Adversaries." *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, pp. 1030–1039, 2018.

C17 **Diksha Gupta**, **Jared Saia**, and **Maxwell Young**. "Proof of Work Without All the Work: Computationally Efficient Attack-Resistant Systems." *International Conference on Distributed Computing and Networking (ICDCN)*, 2018.

C18 **Abhinav Aggarwal**, **Varsha Dani**, Thomas P. Hayes, and **Jared Saia**. "Sending a Message with Unknown Noise." *International Conference on Distributed Computing and Networking (ICDCN)*, pp. 1–10, 2018.

C19 **Mahdi Zamani**, **Jared Saia**, and Jedidiah Crandall. "TorBricks: Blocking-Resistant Tor Bridge Distribution." *International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, pp. 426–440, 2017.

C20 **Mahnush Movahedi**, **Jared Saia**, and **Mahdi Zamani**. "Shuffle to Baffle: Towards Scalable Protocols for Secure Multi-party Shuffling." *IEEE International Conference on Distributed Computing Systems (ICDCS)*, pp. 800–801, 2015.

C21 **Mahnush Movahedi**, **Jared Saia**, and **Mahdi Zamani**. "Secure Multi-party Shuffling." *International Colloquium on Structural Information and Communication Complexity (SIROCCO)*, pp. 459–473, 2015.

C22 **Varsha Dani**, **Mahnush Movahedi**, **Jared Saia**, and **Maxwell Young**. "Interactive Communication with Unknown Noise Rate." *International Colloquium on Automata, Languages, and Programming (ICALP)*, pp. 575–587, 2015. Invited to the special issue of *Information and Computation*, for selected papers from the International Colloquium on Automata, Languages, and Programming (ICALP), 2015.

C23 Jonathan Berry, Michael Collins, **Aaron Kearns**, Cynthia Phillips, **Jared Saia**, and Randy Smith. "Cooperative Computing for Autonomous Data Centers." *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, pp. 38–47, 2015.

C24 **Jared Saia** and **Mahdi Zamani**. "Recent Results in Scalable Multi-party Computation." *International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM)*, pp. 24–44, 2015.

C25 Seth Gilbert, Valerie King, Seth Pettie, Ely Porat, **Jared Saia**, and **Maxwell Young**. "(Near) Optimal Resource-Competitive Broadcast with Jamming." *ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)*, pp. 257–266, 2014.

C26 Dan Alistarh, James Aspnes, Valerie King, and **Jared Saia**. "Communication-Efficient Randomized Consensus." *International Symposium on Distributed Computing (DISC)*, pp. 61–75, 2014.

C27 **Mahnush Movahedi**, **Jared Saia**, and **Mahdi Zamani**. "Secure Anonymous Broadcast (Brief Announcement)." *International Symposium on Distributed Computing (DISC)*, 2014.

C28 **George Saad** and **Jared Saia**. "Self-Healing Computation." *Proceedings of the 16th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, pp. 195–210, 2014.

C29 Valerie King and **Jared Saia**. "Faster Agreement Via a Spectral Method for Detecting Malicious Behavior." *ACM–SIAM Symposium on Discrete Algorithms (SODA)*, 2014.

C30 **Varsha Dani**, Valerie King, **Mahnush Movahedi**, and **Jared Saia**. "Quorums Quicken Queries: Efficient Asynchronous Secure Multiparty Computation." *International Conference on Distributed Computing and Networking (ICDCN)*, pp. 242–256, 2014. Best Paper Award, Distributed Computing Track.

C31 Valerie King and **Jared Saia**. "Byzantine Agreement in Polynomial Expected Time." *ACM Symposium on Theory of Computing (STOC)*, 2013. Invited to a special issue of SIAM Journal on Computing for selected papers from the ACM Symposium on Theory of Computing (STOC), 2013. See journal version and corrigendum in J12.

C32 Valerie King and **Jared Saia**. "Brief Announcement: Byzantine Agreement with a Strong Adversary in Polynomial Expected Time." *ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 187–189, 2013. See journal version and corrigendum in J12.

C33 Josh Karlin, Joud Khoury, **Jared Saia**, and **Mahdi Zamani**. "Brief Announcement: Scalable Anonymous Communication with Byzantine Adversary." *ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 128–130, 2013.

C34 **Jeffrey Knockel**, **George Saad**, and **Jared Saia**. "Self-Healing of Byzantine Faults." *International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, pp. 98–112, 2013.

C35 Dieter Mitsche, **George Saad**, and **Jared Saia**. "The Power of Mediation in an Extended El-Farol Game." *International Symposium on Algorithmic Game Theory (SAGT)*, pp. 50–61, 2013.

C36 Joud Khoury, **Mahnush Movahedi**, **Jared Saia**, and **Mahdi Zamani**. "Towards Provably-Secure Scalable Anonymous Broadcast." *3rd USENIX Workshop on Free and Open Communications on the Internet (FOCI'13)*, 2013.

C37 **Varsha Dani**, Valerie King, **Mahnush Movahedi**, and **Jared Saia**. "Brief Announcement: Breaking the $O(nm)$ Bit Barrier: Secure Multiparty Computation with a Static Adversary." *ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 227–228, 2012.

C38 Seth Gilbert, Valerie King, **Jared Saia**, and **Maxwell Young**. "Resource-Competitive Analysis: A New Perspective on Attack-Resistant Distributed Computing." *ACM International Workshop on Foundations of Mobile Computing (FOMC)*, pp. 1–6, 2012.

C39 **Olumuyiwa Oluwasanmi** and **Jared Saia**. "Scalable Byzantine agreement with a Random Beacon." *International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, pp. 253–265, 2012.

C40 Nicholas Aase, Jedidiah R. Crandall, Alvaro Diaz, **Jeffrey Knockel**, Jorge Ocana Molinero, **Jared Saia**, Dan Wallach, and Tao Zhu. "Whiskey, Weed and Wukan on the World Wide Web: On Measuring Censors' Resources and Motivations." *USENIX Workshop on Free and Open Communications on the Internet (FOCI)*, 2012.

C41 **Jeffrey Knockel**, Jedidiah R. Crandall, and **Jared Saia**. "Three Researchers, Five Conjectures: An Empirical Analysis of TOM-Skype Censorship and Surveillance." *USENIX Workshop on Free and Open Communications on the Internet (FOCI)*, 2011.

C42 Valerie King, **Jared Saia**, and **Maxwell Young**. "Conflict on a Communication Channel." *ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 277–286, 2011.

C43 **Varsha Dani**, **Mahnush Movahedi**, **Yamel Rodriguez**, and **Jared Saia**. "Scalable Rational Secret Sharing." *ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 187–196, 2011.

C44 Amos Fiat, Stefano Leonardi, **Jared Saia**, and Piotr Sankowski. "Single Valued Combinatorial Auctions with Budgets." *ACM Conference on Electronic Commerce*, pp. 223–232, 2011.

C45 Valerie King, Steven Lonargan, **Jared Saia**, and **Amitabh Trehan**. "Load balanced Scalable Byzantine Agreement through Quorum Building, with Full Information." *International Conference on Distributed Computing and Networking (ICDCN)*, pp. 203–214, 2011.

C46 Valerie King and **Jared Saia**. "Breaking the $O(n^2)$ Bit Barrier: Scalable Byzantine agreement with an Adaptive Adversary." *ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 420–429, 2010. Best Paper Award.

C47 **Bo Wu**, Valerie King, and **Jared Saia**. "Attack-Resistant Frequency Counting." *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, pp. 1–10, 2010.

C48 **Olumuyiwa Oluwasanmi**, **Jared Saia**, and Valerie King. "An Empirical Study of a Scalable Byzantine Agreement Algorithm." *Heterogeneity in Computing Workshop (HCW), IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, pp. 1–13, 2010.

C49 Josep Diaz, Dieter Mitsche, **Navin Rustagi**, and **Jared Saia**. "On the Power of Mediators." *International Workshop on Internet and Network Economics (WINE)*, pp. 455–462, 2009.

C50 Valerie King and **Jared Saia**. "From Almost Everywhere to Everywhere: Byzantine Agreement with $\widetilde{O}(n^{3/2})$ Bits." *International Symposium on Distributed Computing (DISC)*, pp. 464–478, 2009.

C51 Tom Hayes, **Jared Saia**, and **Amitabh Trehan**. "The Forgiving Graph: A Distributed Data Structure for Low Stretch under Adversarial Attack." *ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 121–130, 2009.

C52 Valerie King and **Jared Saia**. "Brief Announcement: Fast Scalable Byzantine Agreement in the Full Information Model with a Nonadaptive Adversary." *ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 304–305, 2009.

C53 Tom Hayes, **Navin Rustagi**, **Jared Saia**, and **Amitabh Trehan**. "The Forgiving Tree: A Self-Healing Distributed Data Structure." *ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 203–212, 2008.

C54 Valerie King, Cynthia Phillips, **Jared Saia**, and **Maxwell Young**. "Sleeping on the Job: Energy-Efficient and Robust Broadcast for Radio Networks." *ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 243–252, 2008.

C55 Bruce Kapron, David Kempe, Valerie King, **Jared Saia**, and **Vishal Sanwalani**. "Fast Asynchronous Byzantine Agreement and Leader Election with Full Information." *ACM–SIAM Symposium on Discrete Algorithms (SODA)*, 2008.

C56 **Jared Saia** and **Amitabh Trehan**. "Picking up the Pieces: Self-Healing in Reconfigurable Networks." *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, pp. 1–12, 2008.

C57 Habiba, Tanya Berger-Wolf, **Yintao Yu**, and **Jared Saia**. "Finding Spread Blockers in Dynamic Networks." *Proceedings of the 2nd Workshop on Social Network Mining and Analysis (SNA-KDD), ACM International Conference on Knowledge Discovery and Data Mining*, 2008.

C58 James Aspnes, **Navin Rustagi**, and **Jared Saia**. "Worm versus alert: Who wins in a battle for control of a large-scale network?" *International Conference on Principles of Distributed Systems (OPODIS)*, 2007.

C59 Valerie King, **Jared Saia**, **Vishal Sanwalani**, and Erik Vee. "Towards Secure and Scalable Computation in Peer-to-peer Networks." *IEEE Symposium on Foundations of Computer Science (FOCS)*, pp. 87–98, 2006.

C60 **Iching Boman**, **Jared Saia**, Chaouki T. Abdallah, and Edl Schamiloglu. "Brief Announcement: Self-healing Algorithms for Reconfigurable Networks." *International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, pp. 563–565, 2006.

C61 Tanya Berger-Wolf and **Jared Saia**. "A Framework for the Analysis of Dynamic Social Networks." *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, pp. 523–528, 2006.

C62 Valerie King, **Jared Saia**, **Vishal Sanwalani**, and Erik Vee. "Scalable Leader Election." *ACM–SIAM Symposium on Discrete Algorithms (SODA)*, pp. 990–999, 2006.

C63 Amos Fiat, **Jared Saia**, and **Maxwell Young**. "Making Chord Robust to Byzantine Attacks." *European Symposium on Algorithms (ESA)*, pp. 803–814, 2005.

C64 Hamilton Link, **Jared Saia**, Terran Lane, and Randall A. LaViolette. "The Impact of Social Networks on Multi-Agent Recommender Systems." *Workshop on Cooperative Multi-Agent Learning, European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD)*, 2005.

C65 Valerie King and **Jared Saia**. "Choosing a Random Peer." *ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 125–130, 2004.

C66 **Scott Lewis** and **Jared Saia**. "Scalable Byzantine Agreement." *Workshop on Robust Communication Dynamics in Complex Networks, Conference on Neural Information Processing Systems (NIPS)*, 2004.

C67 Amos Fiat and **Jared Saia**. "Censorship Resistant Peer-To-Peer Content Addressable Networks." *Proceedings of the 13th Annual ACM–SIAM Symposium on Discrete Algorithms (SODA)*, San Francisco, California, 2002.

C68 **Jared Saia**, Stefan Saroiu, Amos Fiat, Steve Gribble, and Anna R. Karlin. "Dynamically Fault-Tolerant Content Addressable Networks." *First International Workshop on Peer-to-Peer Systems*, pp. 270–279, 2002.

C69 Joe Hall, Jason Hartline, Anna R. Karlin, **Jared Saia**, and John Wilkes. "On Algorithms for Efficient Data Migration." *Proceedings of the 12th Annual ACM–SIAM Symposium on Discrete Algorithms (SODA)*, 2001.

C70 Yossi Azar, Amos Fiat, Anna Karlin, Frank McSherry, and **Jared Saia**. "Spectral Analysis of Data." *Thirty-Third Annual ACM Symposium on Theory of Computing (STOC)*, pp. 619–626, 2001.

C71 Eric Anderson, Joe Hall, Jason Hartline, Michael Hobbes, Anna Karlin, **Jared Saia**, Ram Swaminathan, and John Wilkes. "An Experimental Study of Data Migration Algorithms." *Proceedings of the 5th Workshop on Algorithm Engineering*, 2001.

C72 Bernard M. E. Moret, Michael Collins, **Jared Saia**, and Ling Yu. "The Ice Rink Problem." *Proceedings of the 1st Workshop on Algorithm Engineering*, 1997.

C73 Zhiqiang Chen, Andrew Holle, Bernard M. E. Moret, **Jared Saia**, and Ali Boroujerdi. "Network Routing Models Applied to Aircraft Routing Problems." *Proceedings of the Winter Simulation Conference*, pp. 1200–1206, 1995.

C74 Osamu Furuse, Hitoshi Iida, Kozo Oi, **Jared Saia**, and Eiichiro Sumita. "A Massively Parallel Association Approach For Real Time Spoken Language Translation Systems." *Proceedings of the Japanese Parallel Processing Conference*, 1994. Winner of Japanese Society for Artificial Intelligence "Excellence in Research" Award.

Book Chapters and Encyclopedia Contributions

B1 Habiba, **Yintao Yu**, Tanya Berger-Wolf, and **Jared Saia**. "Finding Spread Blockers in Dynamic Networks." In *Advances in Social Network Mining and Analysis*, Lecture Notes in Computer Science 5498, pp. 55–76, Springer, 2010.

B2 **Jared Saia**. "Randomization in Distributed Computing." In *Encyclopedia of Algorithms*, Springer, 2007.

B3 **Jared Saia**. "Statistical Natural Language Processing." In George Luger and William Stubblefield, *Artificial Intelligence: Structures and Strategies for Complex Problem Solving*, 3rd edition, pp. 543–550, Addison Wesley Longman, 1998.

Survey Articles in Professional Newsletters

S1 Michael A. Bender, **Varsha Dani**, Jeremy T. Fineman, Seth Gilbert, **Mahnush Movahedi**, Seth Pettie, **Jared Saia**, and **Maxwell Young**. "Resource-Competitive Algorithms." *ACM SIGACT News (Special Interest Group on Algorithms and Computation Theory)* 46(3), pp. 51–71, 2015.

S2 Valerie King and **Jared Saia**. "Scalable Byzantine Computation." *ACM SIGACT News (Special Interest Group on Algorithms and Computation Theory)* 41(3), pp. 89–104, 2010.

Technical Reports

R1 Hamilton Link, Randall A. LaViolette, **Jared Saia**, and Terran Lane. "Parameters Affecting the Resilience of Scale-Free Networks to Random Failures." Sandia National Laboratories, technical report SAND2005-5925, September 2005.

Manuscripts and Articles in Preparation

P1 "Spectral Preserving Projections for Iterative Methods." Ongoing work with **Joel Villarreal**. *In preparation.*

P2 "Scalable creation of Beaver Triples via the Discrete Fourier Transform." Ongoing work with **Valerie Barker**. *In preparation.*

P3 Adrian Faust, Yazied Hasan, Vadim Polyakov, **Jared Saia**, and Lydia Tapia. "Post-Learning Adaptability of Reinforcement Learning Policies to Noise." *In preparation.*

P4 Jonathan W. Berry, Cynthia A. Phillips, and **Jared Saia**. "Making Social-Network Graphs More Human Using Only Topology" (working title). Invited article for *SIAM News*; *in preparation.*

Invited Lectures, Workshop Presentations, and Research Visits

Conference Keynotes

- "Proof-of-work Without all the Work." 27th International Colloquium on Structural Information and Communication Complexity (SIROCCO), Paderborn, Germany, 2020.
- "Truth, Lies, and Random Bits." Foundations of Computer Science track, 41st International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM), Pec pod Sněžkou, Czech Republic, January 2015.

Invited Tutorials and Summer-School Lectures

- Computer science theory tutorial on noisy gates, smoothed analysis, and distributed computation, *Stochastic Thermodynamics and Computer Science Theory II*, Santa Fe Institute, June 2025.
- Two-hour tutorial on resource-competitive analysis, with Maxwell Young, *Midsouth Theory Day*, Louisiana State University, December 9, 2016.
- "Distributed Algorithms," Santa Fe Institute Complex Systems Summer School, June 2011.
- "Security and Game Theory (Out of Eden)," Santa Fe Institute Complex Systems Summer School, June 2011.

Invited Seminars and Workshop Talks

- University of Texas at Austin, *Stochastic Thermodynamics and Computer Science Theory Workshop*, "Reliable Information in a World of Moving Agents," October 29, 2026.
- Simons Institute for the Theory of Computing, University of California, Berkeley, *Managing Memory workshop*, "Efficient Computation of Beaver Triples via the Discrete Fourier Transform," October 2, 2025.
- Durham University, *Network Engineering Science and Theory in Durham (NESTiD) seminar*, "Bankrupting Attackers in Dynamic Networks," February 24, 2022 (online).
- Workshop on Distributed Computing in Dynamic Networks (DCDN), "Resource Burning for Network Security," May 28, 2020 (online).
- Bertinoro Workshop on Algorithms and Data Structures (ADS), Italy, "Research Burning for Distributed Security," June 10–14, 2019.
- 7th Workshop on Biological Distributed Algorithms (BDA), "A Most Irrational Foraging Algorithm", Toronto, Ontario, 2019.
- Dagstuhl Seminar 18101, *Scheduling*, "Interactive Communication with Multiple Parties, or Scheduling with Noise and Feedback," March 4–9, 2018.
- University of Houston, "Proof-of-Work Without All the Work," February 5, 2018.
- Sandia National Laboratories, Computer Science Research Institute, "Proof-of-Work Without All the Work," September 18, 2017.
- 29th Multi-Service Networks Workshop (MSN), Cosener's House, Abingdon, United Kingdom, "Distributed Computing with Channel Noise," June 22, 2017.
- Bertinoro Workshop on Algorithms and Data Structures (ADS), Italy, "Interactive Communication for Large Networks," June 11–16, 2017.
- Santa Fe Institute, "Distributed Computing with Channel Noise," June 7, 2017.
- Loughborough University, United Kingdom, "Distributed Computing with Channel Noise," June 2017.
- University of British Columbia, *Theory at UBC Mini-Symposium*, "Interactive Communication in Large Networks," February 3, 2017.
- Shenzhen Blockchain Workshop, Shenzhen China, "Proof of Work Without All the Work" 2017.
- Security Group, Cornell University, "Proof of Work Without All the Work" 2017.
- Yale University, "Computing with Unknown Noise," October 13, 2016.
- Osaka University, "Interactive Computation with Unknown Noise Rate," July 14, 2016.

- Massachusetts Institute of Technology Lincoln Laboratory, *Graphex Symposium*, "Cooperative Computing for Autonomous Data Centers," May 2016.
- Sandia National Laboratories, Livermore, *Workshop on Incomplete Networked Data (WIND)*, "Cooperative Computing for Autonomous Data Centers," March 2016.
- Aarhus University, "Interactive Computation with Unknown Noise Rate," June 4, 2015.
- Aarhus University, "Faster Agreement via a Spectral Method for Detecting Malicious Behavior," June 2, 2015.
- Bertinoro Workshop on Algorithms and Data Structures (ADS), Italy, "Interactive Communication with Unknown Noise Rate," June 2015.
- Human Centric Security (HuCS), University of New Mexico–Sandia National Laboratories, "Scalable Byzantine Agreement and Leader Election," February 6, 2015.
- Massachusetts Institute of Technology Lincoln Laboratory, *Security and Privacy Assurance Research–Multiparty Computation (SPAR-MPC) Workshop*, "Millions of Millionaires: A Distributed Computing Approach to Secure Multiparty Computation," May 29, 2014.
- Drexel University, "Millions of Millionaires: Secure Computation for Massive Networks," April 2014.
- Oak Ridge National Laboratory, Computer Science and Mathematics Division, "How to Build a Reliable System from Unreliable Components," September 5, 2013.
- University of Michigan, Theory Seminar, "Byzantine Agreement in Polynomial Expected Time," May 3, 2013.
- Santa Fe Institute, "Truth, Lies and Random Bits," 2013.
- Bertinoro Workshop on Algorithms and Data Structures, Bertinoro Italy, "A Spectral Method for Detecting Malicious Behavior" 2013.
- University of New Mexico research colloquium, "Emergent Reliability: Recent Results in Byzantine Agreement," September 28, 2012.
- Sandia National Laboratories, *Dynamic Defense Workshop*, "Resource-Competitive Analysis: A New Perspective on Attack-Resistant Distributed Computing," September 5, 2012.
- Institute for Computing in Science (ICiS), *Future of the Field of High Performance Computing workshop*, Park City, Utah, "Reliable Computing with Unreliable Components," August 8, 2012.
- Banff International Research Station (BIRS), *Probabilistic versus Deterministic Techniques for Shared Memory Computation*, "Shared Memory in an Adverse Environment," February 6, 2012.
- University of Iowa, Invited Lecture Series, "Conflict on Large Networks," April 15, 2011.
- University of Maryland, "Conflict on Large Networks," February 2011.
- Bertinoro Workshop on Algorithms and Data Structures, Bertinoro Italy, "Scalable Rational Secret Sharing," 2011.
- Sandia National Laboratories, "Conflict in Communication Networks," December 6, 2010.
- Microsoft Research, Silicon Valley, "Breaking the $O(n^2)$ Bit Barrier: Scalable Byzantine Agreement with an Adaptive Adversary," December 2, 2010.
- University of Virginia, "Breaking the $O(n^2)$ Bit Barrier: Scalable Byzantine Agreement with an Adaptive Adversary," October 15, 2010.
- Emory University, "Scalable Byzantine Agreement," October 2010.
- Santa Fe Institute, "Conflict in Communication Games," 2010.

- Information Theory and Applications (ITA) Workshop, San Diego "Fear in Mediation: Exploiting the Windfall of Malice," 2010.
- University of New Mexico research colloquium, "Fear in Mediation: Exploiting the Windfall of Malice," October 9, 2009.
- Air Force Research Laboratory, Kirtland Air Force Base, "Conflict in Networks," September 10, 2009.
- Santa Fe Institute, "Fear in Mediation: Exploiting the Windfall of Malice," August 13, 2009.
- Swiss Federal Institute of Technology Zurich (ETH Zurich), Switzerland, "Building a Computer Out of the Internet: Foundations for Collaborative Computing," summer 2009.
- École Polytechnique Fédérale de Lausanne (EPFL), Switzerland, "Building a Computer Out of the Internet: Foundations for Collaborative Computing," summer 2009.
- Sapienza University of Rome, Interdepartmental Seminar on Algorithmics, "Conflict in Network," March 2, 2009.
- Bertinoro Workshop on Algorithms and Data Structures (ADS), Italy, "Fear in Mediation: Exploiting the Windfall of Malice," 2009.
- University of Maryland, "Building a Computer Out of the Internet: Foundations for Collaborative Computing," 2009.
- Microsoft Research, "Building a Computer Out of the Internet: Foundations for Collaborative Computing," 2009.
- Sandia National Laboratories, Computer Science Research Institute, "Conflict in Networks," April 24, 2008.
- Yahoo Research, Barcelona, Spain, "Conflict in Networks," 2008.
- Dynamic Communication Networks Foundations and Algorithms (DYNAMO) Workshop, Arcachon, France, "Worm vs Alert," 2008.
- Santa Fe Institute Workshop on Scaling in Biological and Social Networks, "Virus vs Alert: Who Wins in a Battle for Control of a Large Network?," 2007.
- University of California, Davis, "Building a Computer Out of the Internet: Foundations for Collaborative Computing," 2007.
- University of Maryland, "Conflict on Large Networks," 2007.
- Microsoft Research Laboratories, Networking Group, Redmond, Washington, "Asynchronous Byzantine Agreement in Polynomial Time," 2006.
- Center for Discrete Mathematics and Theoretical Computer Science (DIMACS), Rutgers University, "Choosing a Random Node in a Large-Scale Network," April 18, 2005.
- University of Illinois Chicago, "Secure Algorithms and Data Structures for Massive Networks," 2005.
- University of Barcelona, Spain, "Scalable and Secure Distributed Algorithms," 2005.
- Computer Science Research Institute (CSRI), Sandia National Laboratories, "Scalable and Secure Distributed Algorithms," 2005.
- Los Alamos National Laboratory, "Scalable and Secure Distributed Algorithms," 2005.
- Santa Fe Institute Workshop on New Perspectives on Complex Systems, "Scalable and Secure Distributed Algorithms," 2005.
- University of Maryland, "Censorship-Resistant Peer-to-peer Networks," 2004.

- University of Southern California, "Censorship-Resistant Peer-to-peer Networks," 2004.
- Tel Aviv University, Tel Aviv, Israel, "Censorship-Resistant Peer-to-peer Networks," 2004.
- Workshop on Robust Communication Dynamics in Complex Networks, Conference on Neural Information Processing Systems (NIPS), Vancouver, "Scalable Byzantine Agreement," 2004.
- Dartmouth College, University of Minnesota, Emory University, University of Florida, University of Victoria, and University of Georgia, "Censorship-Resistant Peer-to-peer Networks," 2002.
- University of Iowa, "Attack-Resistant Peer-to-peer Networks," 2002.

Focused Collaborative Research Programs

- Invited participant, *Distributed Computing on External Data*, Banff International Research Station (BIRS), Focussed Research Group 26frg011, June 28–July 12, 2026. Organizers: Valerie King, David Peleg, and John Augustine.

Selected Public and Professional Coverage

- "Faces of CISE: Jared Saia, PhD," *National Science Foundation, Computer and Information Science and Engineering (CISE) Newsletter*, October 2023. Profile of resource-efficient security and interdisciplinary algorithmic research.
- "Proof of Work Without All the Work," discussion on *Hacker News*, August 7, 2017.
- "Research Scientist Delves into Problem of Persuading Millions of People to Cooperate for a Secure Internet," *ACM TechNews* and *UNM Today*, September 2010.
- "Social Networking Software Tracks Zebras and Consumers," coverage including *Washingtonpost.com*, *ACM TechNews*, and *Newswise*, September 6–10, 2007.
- "Professor Fights a Mathematical Battle to Keep the Virtual World Running Smoothly," *ACM TechNews*, February 26, 2007, and *UNM Today*, February 27, 2007.
- "Professor Goes to War," front-page article, *UNM Daily Lobo*, March 2, 2007.