Richard Gabriel Freedman

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Education

September 2012 – May 2020	University of Massachusetts Amherst Amherst, Massachusetts 01003 Ph.D. in Computer Science M.S. in Computer Science (February 2016)
August 2008 – May 2012	Wake Forest University 1834 Wake Forest Road Winston-Salem, North Carolina 27106 B.S. in Computer Science with Honors B.S. in Mathematics with Honors
August 2004 – June 2008	Mt. Tabor High School 342 Petree Road Winston-Salem, North Carolina 27106

Awards and Achievements

2023	Scottish Informatics and Computer Science Alliance (SICSA) Distinguished Visiting Fellow
2018	International Conference on Automated Planning and Scheduling (ICAPS) Outstanding Reviewer Award Recipient Three-Minute Thesis Competition Finalist (Top 10) at the University of Massachusetts Amherst
2017	Accepted to participate in the ACM SIGCHI Summer School on Computational Interaction Educational Advances in Artificial Intelligence (EAAI) New and Future Educator Program Award Recipient
2015	National Science Foundation East Asia and Pacific Summer Institutes (NSF EAPSI) Fellowship Recipient
2014	National Science Foundation Graduate Research Fellowship Program (NSFGRFP) Honorable Mention
2013	National Science Foundation Graduate Research Fellowship Program (NSFGRFP) Honorable Mention
2011 – 2012	Recipient of John W. Sawyer Prize in Computer Science for Outstanding Undergraduate Student in the Senior Class (Wake Forest University)

Recipient of John Y. Phillips Prize in Mathematics for Outstanding Undergraduate Student in the Senior Class (Wake Forest University)
Recipient of Carlton P. West Phi Beta Kappa Award (Wake Forest University)
Recipient of Walter Low Tatum Scholarship (Wake Forest University)
Recipient of Duke Energy Scholarship
Recipient of Barry and Ann Griffin Driggs Scholarship (Wake Forest University)
Participant in William Lowell Putnum Competition in Mathematics (score of 9)
Participant in COMAP Mathematical Contest in Modeling (Honorable Mention Ranking)

2010 – 2011
Marshall at Wake Forest University Graduation
Recipient of Kenneth Tyson Raynor Scholarship (Wake Forest University)
Recipient of Walter Low Tatum Scholarship (Wake Forest University)
Participant in William Lowell Putnum Competition in Mathematics (score of 20)
Recipient of G. W. Greene Scholarship (Wake Forest University)

Summer 2010
Recipient of AMS and ASA award for excellence in student exposition and research at MathFest 2010 (Pittsburgh, PA)

2009 – 2010
Recipient of Kenneth Tyson Raynor Scholarship (Wake Forest University)
Participant in William Lowell Putnum Competition in Mathematics (score of 11)
Participant in COMAP Mathematical Contest in Modeling (Meritorious Ranking)

Summer 2006
CERTL (Center of Excellence for Research, Teaching, and Learning) Mini-Fellowship Participant at the Department of Biostatistics at Wake Forest University School of Medicine (Mentor: Dr. Edward Ip)

Summer 2005
CERTL (Center of Excellence for Research, Teaching, and Learning) Mini-Fellowship Participant at the Department of Life Sciences at Winston-Salem State University (Mentors: Dr. Morris Clark and Dr. Jill Harp)

Previous Employment

Spring 2024 – Present
Tufts University
Amy Goldstein - Director of the Experimental College

(Visiting Lecturer) Instructor and creator of the course titled "What Goes into Game Design?: A Toolbox of Techniques" (course number EXP-0004-S). Created all materials, ran weekly discussions with hands-on activities, arranged professional guests to talk about related careers and experiences, handled student e-mails, and organized an exposition for students to showcase their teams' final projects.

Spring 2024 – Present
Wentworth Institute of Technology (WIT)
Durga Suresh-Menon - Dean of the School of Computing and Data Science

(Adjunct Instructor) Instructor of the masters degree course titled "Machine Learning for Data Science" (course number DATA 6250). Created all materials in addition to hosting office hours and handling student e-mails.

Fall 2023
Wentworth Institute of Technology (WIT)
Durga Suresh-Menon - Dean of the School of Computing and Data Science

	(Adjunct Instructor) Instructor and redesigner of the first-year masters degree course titled "Mathematics for Machine Learning" (course number MATH 5700). Created all materials in addition to hosting office hours, handling student e-mails, and mentoring the first-year graduate students.
Fall 2018 – Present	Smart Information Flow Technologies (SIFT) Harry Funk - Vice President of R&D
	(Researcher) Contribute to and pursue research and development projects that apply artificial intelligence planning; plan, activity, and intent recognition; human-computer interaction; and/or human factors to needs that clients identify. Served as (co-)principal investigator (PI) on NIH-sponsored SBIR/STTR grants involving remote patient exercise montioring to inform medical practitioners about how their patients and performing as well as videogames designed around genomics curriculum with intelligent tutoring systems that adapt gameplay challenges and experiences to each players' learning style and progress. Also served as personnel on other coworker-led DoD-sponsored projects spanning creative problem solving systems, to videogame design for social science experiments, to mathematical modeling of situation outcomes for human factors assessment, to designing and conducting user studies with social media moderators and recently-developed prototypes.
Fall 2012 – Fall 2018	College of Information and Computer Sciences, University of Massachusetts Amherst Shlomo Zilberstein, Ph.D. - Advisor
	(Research Assistant) Perform research in the Resource Bounded Reasoning (RBR) Lab regarding planning under uncertainty. Present research regards developing interactive systems that integrate planning with plan, activity, and intent recognition. Mentored an undergraduate student on his honors thesis about related research. Also received exposure to the research done in related areas of planning under uncertainty.
Spring 2017	College of Information and Computer Sciences, University of Massachusetts Amherst David Mix Barrington, Ph.D. - Undergraduate Program Director
	(Instructor) Co-Instructor for the undergraduate artificial intelligence class (course number CMPSCI 383). Modified the course to be taught using a team-based learning format, including the development of interactive group activities. Created all materials for sections taught including in-class activities, modified slides, homeworks, and exams. Additionally hosted office hours, handled student questions, and managed a team of graders and a teaching assistant.
Fall 2015	College of Information and Computer Sciences, University of Massachusetts Amherst David Mix Barrington, Ph.D. - Head of Freshman Seminar Courses
	(Instructor) Instructor and creator of two sections of the freshman seminar (course number CMPSCI 191) titled "Introduction to Computational Thinking through the History of Videogames." Created all materials in addition to hosting office hours, handling student e-mails, mentoring the first-year students, and organizing a private small-scale game convention for students to present their final projects.
Summer 2015	Graduate School of Arts and Sciences, The University of Tokyo Alex Fukunaga, Ph.D. - Host Researcher/Advisor
	(Research Assistant, on behalf of the NSF EAPSI Fellowship/JSPS Summer Program) Performed research in the Fukunaga Lab regarding the integration of classical planning and probabilistic plan recognition. Research resulted in a published abstract, software for real-time agents to act in the Sokoban planning benchmark, and ongoing collaboration.

Spring 2015	College of Information and Computer Sciences, University of Massachusetts Amherst Joshua AC Newman - Instructor (Teaching Assistant) Assistant for the undergraduate creative game design and development class (course number INFO 397G). Primary tasks included helping design and test lesson plans, giving lectures on game theory and designing games on digital mediums, critiquing student group projects during class (as done in art classes), hosting office hours, answering student e-mails, and serving as the on-campus contact.
Spring 2014	College of Information and Computer Sciences, University of Massachusetts Amherst William Dabney, Ph.D. and Philip Thomas, Ph.D. - Co-Instructors (Teaching Assistant) Assistant for the undergraduate artificial intelligence class (course number CMPSCI 383). Primary tasks included hosting office hours, answering student e-mails, grading homework assignments, and proctoring examinations. Also created the first two homework assignments, taught two guest lectures about classical planning, and served as the liaison between students and the instructors.
Summer 2012	Department of Computer Science, Wake Forest University Victor Paúl Pauca, Ph.D. - Client and Collaborator Developed a prototype of an adaptive text prediction system to be used in assistive technology applications.
Summer 2011 - Spring 2012	Translational Sciences Institute, Wake Forest Baptist Health Sriraam Natarajan, Ph.D. - Mentor and Supervisor (Research Assistant) Assisted in starting up a machine learning laboratory at the medical center. Maintained the laboratory's website and helped with research projects. My primary project was to produce the first existing implementation of Natarajan et al.'s Anytime Lifted Belief Propagation algorithm.
Summer 2010 - Spring 2012	Department of Economics, Wake Forest University Frederick Chen, Ph.D. - Client Developed web sites to autonomously carry out participant-involved research studies. Also assisted in other research projects through the development of computer programs, including simulators of agents in game theory-inspired scenarios.
Summer 2008 - Summer 2009	Department of Biostatistics (Genetics) - Public Health Sciences, Wake Forest Baptist Health Carl Langefeld, Ph.D. - Supervisor (Internship) Analyzed genetic data by statistical methods including PCA as well as analyzed statistics software and packages. Developed the SNPGWAPlot program used by the department to generate Manhattan plots of SNP data processed by Wake Forest Baptist Health's SNPGWA program.
Summer 2007	Department of Biostatistics - Public Health Sciences, Wake Forest Baptist Health Edward Ip, Ph.D. - Supervisor

(Internship) Used computer visualization programs for data entry and analysis and created programs for various projects. Developed a prototype for a Flash-based interactive survey intended to increase the likelihood of cooperation from younger subjects (under additional mentorship from Anthony Pecorella, now at Kongregate Games).

Publications

- Miller, Christopher A. and Freedman, Richard G. "Neglect Tolerance as a Measure for Responsible Human Delegation." To appear in J. M. Schraagen (Ed.) Responsible Use of AI in Military Systems. CRC Press; Boca Raton, FL. In press.

- Freedman, Richard G. and Miller, Christopher A. "Out of Sight, But for How Long out of Mind? Responsible Neglect Tolerance for Independent Living with Autonomous Robots." *The 2023 AAAI Fall Symposium Series: Artificial Intelligence and Human-Robot Interaction*, p. 1-4, 2023.

- Nguyen, Viet Dung; Nguyen, Quan H.; and Freedman, Richard G. "Predicting Perceived Music Emotions with Respect to Instrument Combinations." *Proceedings of the AAAI Conference on Artificial Intelligence*, p. 16078-16086, 2023.

- Freedman, Richard G. "AI-HRI Brings New Dimensions to Human-Aware Design for Human-Aware AI." *The 2022 AAAI Fall Symposium Series: Artificial Intelligence and Human-Robot Interaction*, p. 1-6, 2022.

- Freedman, Richard G.; Mueller, Joseph B.; Ladwig, Jack; Johnston, Steven; McDonald, David; Wauck, Helen; Wheelock, Ruta; and Borck, Hayley. "A Symbolic Representation of Human Posture for Interpretable Learning and Reasoning." *The 2022 AAAI Fall Symposium Series: Artificial Intelligence and Human-Robot Interaction*, p. 1-11, 2022.

- Borck, Hayley; Ladwig, Jack; Mueller, Joseph B.; Johnston, Steven; Wauck, Helen; Wheelock, Ruta; and Freedman, Richard G. "Activity Recognition and Explanations for Cancer Health Awareness." *Proceedings of the Fourth Workshop on XCBR: Case-Based Reasoning for the Explanattion of Intelligent Systems*, p. 1-12, 2022.

- Miller, Christopher A.; Shively, Jay; Brandt, Summer; Wauck, Helen; Sarathy, Vasanth; and Freedman, Richard G. "Human As Automation Failsafe: Concept, Implications, Guidelines and Innovations." *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, Vol. 66, Issue 1, p. 100-104, 2022.

- Freedman, Richard G. and Kuter, Ugur. "An On-Line, Statistical Relational Metareasoning Framework for Decentralized Agents with Unreliable Communication." *Proceedings of The 2022 AAAI Spring Symposium Series: 'Can We Talk?' How to Design Multi-Agent Systems In the Absence of Reliable Communications*, p. 1-8, 2022.

- Budijono, Nathaniel; Goldman, Phoebe; Maloney, Jack; Mueller, Joseph B.; Walker, Phillip; Ladwig, Jack; and Freedman, Richard G. "Ludus: An Optimization Framework to Balance Auto Battler Cards." *Proceedings of the AAAI Conference on Artificial Intelligence*, Volume 35, Issue 11, p. 12727-12734, 2022.

- Freedman, Richard G. "2023 EAAI Mentored Undergraduate Research Challenge: Human-Aware AI in Sound and Music." *AI Matters*, Vol. 7, Issue 3, p. 21-28, 2022.

- Musliner, David J.; Pelican, Michael J. S.; McLure, Matthew; Johnston, Steven; Freedman, Richard G.; and Knutson, Corey. "OpenMIND: Planning and Adapting in Domains with Novelty." *Proceedings of the Ninth Annual Conference on Advances in Cognitive Systems*, p. 1-20, 2021.

- Goldman, Phoebe; Knutson, Corey R.; Mahtab, Ryan; Maloney, Jack; Mueller, Joseph B.; and Freedman, Richard G. "Evaluating Gin Rummy Hands Using Opponent Modeling and Myopic Meld Distance." *Proceedings of the AAAI Conference on Artificial Intelligence*, Volume 35, Number 17, p. 15510-15517, 2021.

- Freedman, Richard G.; Levine, Steven J.; Williams, Brian C.; and Zilberstein, Shlomo. "Helpfulness as a Key Metric of Human-Robot Collaboration." *The 2020 AAAI Fall Symposium Series: Artificial Intelligence and Human-Robot Interaction*, p. 1-9, 2020.

- Goldman, Robert P.; Kuter, Ugur; and Freedman, Richard G. "Stable Plan Repair for State-Space HTN Planning." *Proceedings of the Third ICAPS Workshop on Hierarchical Planning*, p. 27-35, 2020.

- Friedman, Scott E.; Goldman, Robert P.; Freedman, Richard G.; Kuter, Ugur; Geib, Christopher; and Rye, Jeffrey. "Provenance-Based Assessment of Plans in Context." *Proceedings of the Third International Workshop on Explainable AI Planning*, p. 1-9, 2020.

- Freedman, Richard G. "Integrating Recognition and Decision Making to Close the Interaction Loop for Autonomous Systems." *Doctoral Dissertations*, 2020.

- Freedman, Richard G.; Friedman, Scott E.; Musliner, David J.; and Pelican, Michael J.S. "Creative Problem Solving Through Automated Planning and Analogy." *The 2020 AAAI Workshop on Generalization in Planning*, p. 1-8, 2020.

- Freedman, Richard G.; Fung, Yi Ren; Ganchin, Roman; and Zilberstein, Shlomo. "Responsive Planning and Recognition for Closed-Loop Interaction." *The 2019 AAAI Fall Symposium Series: Artificial Intelligence and Human-Robot Interaction*, p. 1-5, 2019.

- Freedman, Richard G.; Fung, Yi Ren; Ganchin, Roman; and Zilberstein, Shlomo. "Responsive Planning and Recognition for Closed-Loop Interaction." *Demonstration Program for the Twenty-Ninth International Conference on Automated Planning and Scheduling*, p. 1-2, 2019.

- Editor, Managing; Adler, Aaron; Dasgupta, Prithviraj; DePalma, Nick; Eslami, Mohammed; Freedman, Richard G.; Laird, John E.; Lebiere, Christian; Lohan, Katrin; Mead, Ross; Roberts, Mark; Rosenbloom, Paul S.; Senft, Emmanuel; Stein, Frank; Williams, Tom; Wray, Kyle Hollins; Yaman, Fusun; and Zilberstein, Shlomo. "Reports on the 2018 AAAI Fall Symposium Series." *AI Magazine*, Vol. 40, No. 2, p. 66-72 2019.

- Freedman, Richard G. and Zilberstein, Shlomo. "A Unifying Perspective of Plan, Activity, and Intent Recognition." *Proceedings of the Workshop on Plan, Activity, and Intent Recognition*, p. 1-8, 2019.

- Dwaraki, Abhishek; Freedman, Richard G.; Zilberstein, Shlomo; and Wolf, Tilman. "Using Natural Language Constructs and Concepts to Aid Network Management." *The 2019 International Conference on Computing, Networking and Communications*, p. 802-808, 2019.

- Freedman, Richard G.; Chakraborti, Tathagata; Talamadupula, Kartik; Magazzeni, Daniele; and Frank, Jeremy D. "User Interfaces and Scheduling and Planning: Workshop Summary and Proposed Challenges." *The 2018 AAAI Spring Symposium Series: The Design of the User Experience for Artificial Intelligence*, p. 373-377, 2018.

- Freedman, Richard G.; Fung, Yi Ren; Ganchin, Roman; and Zilberstein, Shlomo. "Towards Quicker Probabilistic Recognition with Multiple Goal Heuristic Search." *Proceedings of the Workshop on Plan, Activity, and Intent Recognition*, p. 1-6, 2018.

- Freedman, Richard G. and Zilberstein, Shlomo. "Roles that Plan, Activity, and Intent Recognition with Planning Can Play in Games." *Proceedings of the Workshop on Knowledge Extraction from Games*, p. 1-4, 2018.

- Freedman, Richard G. and Zilberstein, Shlomo. "Does the Human's Representation Matter for Unsupervised Activity Recognition?" *The 2017 AAAI Fall Symposium Series: Artificial Intelligence and Human-Robot Interaction*, p. 94-98, 2017.

- Freedman, Richard G. and Zilberstein, Shlomo. "A PDDL Representation for Contradance Composition." *Proceedings of the Workshop on Knowledge Engineering for Planning and Scheduling*, p. 10-17, 2017.

- Alves-Oliveira, Patrícia; Freedman, Richard G.; Grollman, Dan; Herlant, Laura; Humphrey, Laura; Fei Liu; Mead, Ross; Stein, Frank; Williams, Tom; and Wilson, Shomir. "Reports on the 2016 AAAI Fall Symposium Series." *AI Magazine*, Vol. 38, No. 2, p. 86-90, 2017.

- Eaton, Eric; Koenig, Sven; Schulz, Claudia; Maurelli, Francesco; Lee, John; Eckroth, Joshua; Crowley, Mark; Freedman, Richard G.; Cardona-Rivera, Rogelio E.; Machado, Tiago; and Williams, Tom. "Blue Sky Ideas in Artificial Intelligence Education from the EAAI 2017 New and Future Educator Program." *AI Matters*, p. 23-31, 2017. Contributed the subarticle titled "Making AI Concepts More Accessible."

- Freedman, Richard G. and Zilberstein, Shlomo. "Integration of Planning with Recognition for Responsive Interaction Using Classical Planners." *Proceedings of the Thirty-First AAAI Conference on Artificial Intelligence*, p. 4581-4588, 2017.

- Freedman, Richard G. and Zilberstein, Shlomo. "Safety in AI-HRI: Challenges Complementing User Experience Quality." *The 2016 AAAI Fall Symposium Series: Artificial Intelligence and Human-Robot Interaction*, p. 42-45, 2016.

- Freedman, Richard G. and Zilberstein, Shlomo. "Using Metadata to Automate Interpretations of Unsupervised Learning-Derived Clusters." *Proceedings of the First Workshop on Human is More Than a Labeler*, 2016.

- Freedman, Richard G. "Integrating Planning and Recognition to Close the Interaction Loop." *Doctoral Consortium for the Twenty-Sixth International Conference on Automated Planning and Scheduling*, 2016.

- Freedman, Richard G. "Integrating Planning and Recognition to Close the Interaction Loop." *Proceedings of the Thirtieth AAAI Conference on Artificial Intelligence*, p. 4295-4296, 2016.

- Freedman, Richard G. and Fukunaga, Alex. "Integration of Planning with Plan Recognition Using Classical Planners (Extended Abstract)." *Artificial Intelligence and Human-Robot Interaction: Papers from the AAAI Fall Symposium*, p. 48-50, 2015.

- Freedman, Richard G.; Jung, Hee-Tae; and Zilberstein, Shlomo. "Temporal and Object Relations in Unsupervised Plan and Activity Recognition." *Artificial Intelligence and Human-Robot Interaction: Papers from the AAAI Fall Symposium*, p. 51-59, 2015.

- Freedman, Richard G. and Zilberstein, Shlomo. "Automated Interpretations of Unsupervised Learning-Derived Clusters for Activity Recognition." *Workshop on Learning for Human-Robot Collaboration*, 2015.

- Jung, Hee-Tae; Freedman, Richard G.; Takahashi, Takeshi; Wong, Jay Ming; Zilberstein, Shlomo; Grupen, Roderic A.; and Choe, Yu-Kyong. "Adaptive Therapy Strategies: Efficacy and Learning Framework." *Proceedings of the IEEE/RAS-EMBS International Conference on Rehabilitation Robotics*, 2015.

- Jung, Hee-Tae; Freedman, Richard G.; Foster, Tammie; Choe, Yu-Kyong; Zilberstein, Shlomo; and Grupen, Roderic A. "Learning Therapy Strategies from Demonstration Using Latent Dirichlet Allocation." *Proceedings of the Twentieth International Conference on Intelligent User Interfaces*, p. 432-436, 2015.

- Freedman, Richard G.; Jung, Hee-Tae; and Zilberstein, Shlomo. "Temporal and Object Relations in Plan and Activity Recognition for Robots Using Topic Models." *Artificial Intelligence and Human-Robot Interaction: Papers from the AAAI Fall Symposium*, p. 70-72, 2014.

- Freedman, Richard G.; Jung, Hee-Tae; Grupen, Roderic A.; and Zilberstein, Shlomo. "How Robots Can Recognize Activities and Plans Using Topic Models." *Artificial Intelligence and Robotics (AIRob): Papers Presented at the Twenty-Eigth AAAI Conference on Artificial Intelligence*, p. 22-28, 2014.

- Freedman, Richard G.; Jung, Hee-Tae; and Zilberstein, Shlomo. "Plan and Activity Recognition from a Topic Modeling Perspective." *Proceedings of the Twenty-Fourth International Conference of Automated Planning and Scheduling*, p. 360-364, 2014.

- Freedman, Richard G. and Robinson, Stephen B. "A Restatement of the Collatz Conjecture with Insights into Its Orbits Using a New Discrete Dynamical System." *To be published in Pi Mu Epsilon Journal.*

- Freedman, Richard G.; Guo, Jingyi; Turkett, William H.; and Pauca, V. Paúl. "Hierarchical Modeling to Facilitate Personalized Word Prediction for Dialogue." *Plan, Activity, and Intent Recognition: Papers from the AAAI 2013 Workshop*, p. 2-9, 2013.

- Freedman, Richard G.; de Salvo Braz, Rodrigo; Bui, Hung; and Natarajan, Sriraam. "Initial Empirical Evaluation of Anytime Lifted Belief Propagation." *International Workshop on Statistical Relational AI*, 2012.

- Lipkowitz MS, Freedman BI, Langefeld CD, Comeau ME, Bowden DW, Kao WHL, Astor BC, Bottinger EP, Iyengar SK, Klotman PE, Freedman RG, Zhang W, Parekh RS, Choi MJ, Nelson GW, Winkler CA, Kopp JB, and the AASK Investigators. "Apolipoprotein L1 gene variants associate with hypertension-attributed nephropathy and the rate of kidney function decline in African Americans." Kidney International, Vol. 83, Issue 1, p. 114-120, 2012. doi: 10.1038/ki.2012.263; published online 25 July 2012.

- Lipkowitz MS, Iyengar SK, Molineros J, Langefeld CD, Comeau ME, Klotman PE, Bowden DW, Freedman RG, Khitrov G, Zhang W, Kao WHL, Parekh RS, Choi MJ, Kopp JB, Winkler CA, Nelson GW, Freedman BI, Bottinger EP, and the AASK Investigators. "Association Analysis of the non-muscle myocin heavy chain 9 gene (MYH9) in hypertensive nephropathy: African American Study of Kidney Disease and Hypertension (AASK)." Journal of the American Society of Nephrology. Vol. 20, p. 56A, Nov. 2009; F-FC233 (Abstract).

Presentations at Conferences (Not Published)

- MAA MathFest 2011 (August 3-6, 2011) - Lexington, Kentucky:

    – Novel Approaches for Solving the Collatz Conjecture Using Fractional Set Positions. Freedman, Richard G.; Robinson, Stephen B.; and Rouse, Jeremy A. (Wake Forest University)

- 2011 Joint Mathematics Meetings (January 6-9, 2011) - New Orleans, Louisiana:

    – Weighted and Unweighted Random Walks of Multiple Entities on a Torus-Shaped World. Freedman, Richard G. and Fulp, Errin W. (Wake Forest University)

    – Understanding Hailstone Sequences Using a New Coding Process. Freedman, Richard G. and Robinson, Stephen B. (Wake Forest University) (*Poster*)

- MAA MathFest 2010 (August 5-7, 2010) - Pittsburgh, Pennsylvania:

    – Understanding Hailstone Sequences Using a New Coding Process. Freedman, Richard G. and Robinson, Stephen B. (Wake Forest University)

- Southeastern MAA Conference 2010 (March 26-27, 2010) - Elon University, North Carolina:

    – Understanding How the Hailstone Falls Using a New Coding Process. Freedman, Richard G. (Wake Forest University)

Outreach Presentations

- New England Regional Developers (NERD) Summit 2015 (September 11-13, 2015) - Amherst, Massachusetts:
  - Graphics Programming with Processing. Freedman, Richard G. (University of Massachusetts Amherst) and Jones, Marvin (Greenville Technical College).

- Wake@Hanes Google CS4HS Teacher Workshop 2012 (August 9-10, 2012) - Winston-Salem, North Carolina:
  - Higher/Lower Guessing Game: Winning via Efficient Searching. Freedman, Richard G. (Wake Forest University/University of Massachusetts Amherst).
  - Computational Thinking with Scratch: Story Telling. Freedman, Richard G. (Wake Forest University/University of Massachusetts Amherst); Zou, Anqi (Wake Forest University/Georgia Institue of Technology); and Findeis, Daniel (High School). Presented the segment "Creative Writing with a Fork in the Road."

Other Presentations

- General Talks:
  - Towards Closed-Loop Interactive Systems: Understanding People and their Impacts on Decision Making. Freedman, Richard G. Presented at University of Glasgow on March 28, 2023.
  - What Goes into Game Design? Freedman, Richard G. Presented at University of Glasgow on March 24, 2023.
  - Towards Closed-Loop Interactive Systems: Understanding People and their Impacts on Decision Making. Freedman, Richard G. Presented at Heriot-Watt University on March 23, 2023.
  - What Goes into Game Design? Freedman, Richard G. Presented at Heriot-Watt University on March 22, 2023.
  - 2024 EAAI Mentored Undergraduate Research Challenge: AI for Accessibility in Communication. Freedman, Richard G. Presented at Heriot-Watt University on March 21, 2023.
  - Towards Closed-Loop Interactive Systems: Understanding People and their Impacts on Decision Making. Freedman, Richard G. Presented at University of Aberdeen on March 15, 2023.
  - There's Some Industry in My Academia. Freedman, Richard G. Presented at University of Massachusetts Amherst, MA on January 29, 2020 for the Office of Professional Development.
  - Integrating Recognition and Decision Making for Autonomous Systems to Close the Interaction Loop.
    Freedman, Richard G. (University of Massachusetts Amherst). Presented at Massachusetts Institute of Technology on January 18, 2018 for the Interactive Robotics Group Seminar.
  - A Hands-On Experience with Artificial Intelligence. Freedman, Richard G. (University of Massachusetts Amherst). Presented at University of Massachusetts Amherst on March 18, 2017 for the New England Regional Developers (NERD) Summit 2017.
  - Workshop: Writing Scientific Documents in LaTeX. Freedman, Richard G. (University of Massachusetts Amherst). Presented at University of Massachusetts Amherst on March 1, 2016.
  - Using Metadata to Automate Interpretations of Topic Models. Freedman, Richard G. (University of Massachusetts Amherst). Presented at University of Massachusetts Amherst on April 19, 2016 as part of the Data Science Tea Series.
  - Integrating Artificial Intelligence Plan and Activity Recognition for Interactive Applications. Freedman, Richard G. (University of Massachusetts Amherst). Presented at Mitsubishi Electric Corporation Advanced Technology R&D Center (Hyogo, Japan) on August 26, 2015 for The Autonomy and Mechatronics Departments.

- – Integrating Artificial Intelligence Planning and Recognition for Interactive Applications. Freedman, Richard G. (University of Massachusetts Amherst). Presented at the University of Tokyo on August 21, 2015 for the Igarashi Laboratory.
  - – Getting the Big Idea: Recognizing Plans and Activities by Reading People Like a Book. Freedman, Richard G. (University of Massachusetts Amherst). Presented at University of Massachusetts Amherst on March 6, 2014 as part of the Machine Learning and Friends Lunch Series.
  - – The Mathematical and Cultural Perspectives of Origami. Freedman, Richard G.; Cornish, James S.; Jiang, Ting (Wake Forest University). Presented the segment "Can We Actually Fold That? Origami Proving Power with the Huzita-Hatori Axioms" at Wake Forest University on February 28, 2012.
  - – Math & Magic. Freedman, Richard G. (Wake Forest University). Presented at Wake Forest University on March 14, 2011.
  - – Math & Music. Freedman, Richard G. (Wake Forest University). Prensented at Wake Forest University on March 2, 2011.
  - – Understanding Hailstone Sequences Using a New Coding Process. Freedman, Richard G. (Wake Forest University). Presented at Wake Forest University on July 6, 2010.
  - – The Hailstone Sequence. Freedman, Richard G. (Wake Forest University). Presented at Wake Forest University on August 4, 2009.

- REU Workshop Talks:

  - – Integrating Planning and Activity Recognition: Exploring the Research Process. Freedman, Richard G. (University of Massachusetts Amherst). Presented at University of Massachusets Amherst on June 30, 2016.
  - – Statistics in CS Research. Freedman, Richard G. (University of Massachusetts Amherst). Presented at University of Massachusets Amherst on June 27, 2013.

- Poster Presentations:

  - – Integrating Planning and Recognition to Close the Interaction Loop. Freedman, Richard G. (University of Massachusetts Amherst). Presented at Center for Data Science Symposium at the University of Massachusetts Amherst on April 22, 2016.
  - – Novel Approaches for Solving the Collatz Conjecture Using A New Coding Process. Freedman, Richard G.; Robinson, Stephen B.; and Rouse, Jeremy A. (Wake Forest University). Presented at Wake Forest University's Fifth Annual Research Day on September 16, 2011.
  - – Cardio View: Equipment Use in the Miller Center. Black, Rachel A.; Freedman, Richard G.; Cañas, Daniel A. (Wake Forest University). Presented at Wake Forest University's Fifth Annual Research Day on September 16, 2011.

Dissertation and Thesis Projects

- Ph.D. Dissertation in Computer Science: Integrating Recognition and Decision Making to Close the Interaction Loop for Autonomous Systems. Advised by Shlomo, Ph.D. at University of Massachusetts Amherst. Defended on August 27, 2018. Approved by committee in March 2020.

- Masters Thesis in Computer Science: Hierarchical Bayesian Models for Plan and Activity Recognition. Advised by Shlomo Zilberstein, Ph.D. at University of Massachusetts Amherst. Approved by committee on November 3, 2014.

- Undergraduate Honors Thesis in Computer Science: Improving Error Correction in Compilers Using Natural Language Processing Techniques. Advised by Todd Torgersen, Ph.D. at Wake Forest University. Defended on May 3, 2012.

- Undergraduate Honors Thesis in Mathematics: On Variations of the SRB Entropy of the Expanding Map. Advised by Miaohua Jiang, Ph.D. at Wake Forest University. Defended on May 3, 2012.

Service

General	Reviewer for Artificial Intelligence Journal (AIJ); Conference in Human-Agent Interaction (HAI); Symposium on Educational Advances in Artificial Intelligence (EAAI); Humanoids Conference; International Conference for Autonomous Planning and Scheduling (ICAPS); International Joint Conference on Artificial Intelligence (IJCAI); Plan, Activity, and Intent Recognition (PAIR) Workshop; Robotics and Autonomous Systems (RAS) Journal; Robotics Science and Systems (RSS); International Journal of Social Robotics (SORO); ACM Transactions on Intelligent Systems and Technology (TIST); Workshop on Plan, Activity, and Intent Recognition (PAIR); Workshop on Knowledge Extraction in Games (KEG); and AAAI Fall Symposium on Artificial Intelligence for Human-Robot Interaction (AI-HRI)
2020 - present	Client Role for Heriot-Watt University Third-Year Software Engineering Project Course Heriot-Watt University, Edinburgh, Scotland
February 2024 - present	Organizer for The EAAI Mentored Undergraduate Research Challenge Symposium on Educational Advances in Artificial Intelligence (EAAI) 2025, Philadelphia, Pennsylvania
June 2023 - October 2023	Co-Chair and Organizing Committee for the Artificial Intelligence for Human-Robot Interaction (AI-HRI) Symposium AAAI Fall Symposium Series 2023, Arlington, Virginia
February 2023 - 2024	Organizer for The EAAI Mentored Undergraduate Research Challenge Symposium on Educational Advances in Artificial Intelligence (EAAI) 2024, Vancouver, Canada
2022 - 2023	Heriot-Watt University Industry Steering Board Member Heriot-Watt University, Edinburgh, Scotland
February 2022 - February 2023	Co-Organizer for The EAAI Mentored Undergraduate Research Challenge Symposium on Educational Advances in Artificial Intelligence (EAAI) 2023, Washington D.C.
February 2021 - February 2022	Co-Organizer for The EAAI Mentored Undergraduate Research Challenge Symposium on Educational Advances in Artificial Intelligence (EAAI) 2022, Virtual Event
July 2022 - February 2023	Program Committee Co-Chair for The Third AAAI Undergraduate Consortium at The Thirty-Sixth Conference on Artificial Intelligence Association for the Advancement of Artificial Intelligence (AAAI) 2022 Conference, Virtual Event
July 2022 - February 2023	Organizing Committee Member for The Third AAAI Undergraduate Consortium at The Thirty-Sixth Conference on Artificial Intelligence Association for the Advancement of Artificial Intelligence (AAAI) 2022 Conference, Virtual Event
July 2021 - February 2022	Program Committee Co-Chair for The Second AAAI Undergraduate Consortium at The Thirty-Fifth Conference on Artificial Intelligence Association for the Advancement of Artificial Intelligence (AAAI) 2021 Conference, Virtual Event

July 2020 - February 2021	Organizing Committee Member for The Second AAAI Undergraduate Consortium at The Thirty-Fifth Conference on Artificial Intelligence (AAAI) 2021
March 2020 - October 2020	Organizing Team Member for The Third International Workshop on Explainable AI Planning (XAIP) International Conference on Automated Planning and Scheduling (ICAPS) 2020, Virtual Event
September 2019 - November 2019	Symposium on Educational Advances in Artificial Intelligence (EAAI) Program Committee Member Association for the Advancement of Artificial Intelligence (AAAI) 2020 Conference, New York, New York
June 2019 - November 2019	Organizing Committee Member for the Artificial Intelligence for Human-Robot Interaction (AI-HRI) Symposium AAAI Fall Symposium Series 2019, Arlington, Virginia
December 2018	Knowledge Extraction from Games (KEG) Workshop Program Committee Member Association for the Advancement of Artificial Intelligence (AAAI) 2019 Conference, Honolulu, Hawai'i
June 2018 - November 2018	Organizing Committee Member for the Artificial Intelligence for Human-Robot Interaction (AI-HRI) Symposium AAAI Fall Symposium Series 2018, Arlington, Virginia
September 2018 - November 2018	Symposium on Educational Advances in Artificial Intelligence (EAAI) Program Committee Member Association for the Advancement of Artificial Intelligence (AAAI) 2019 Conference, Honolulu, Hawai'i
November 2018 - May 2018	Co-Organizer for the Summit for Outreach and Public Engagement 2018 University of Massachusetts Amherst, Amherst, Massachusetts
Fall 2017 - Summer 2018	Lead Co-Organizer and Proceedings Editor for the User Interfaces and Scheduling and Planning (UISP) Workshop International Conference on Automated Scheduling and Planning (ICAPS) 2018, Delft, the Netherlands
December 2017	Volunteer assistant and elementary school visitor for Computer Science Education Week Liberty School, Springfield, Massachusetts
August 2017 - November 2017	Symposium on Educational Advances in Artificial Intelligence (EAAI) Program Committee Member Association for the Advancement of Artificial Intelligence (AAAI) 2018, New Orleans, Louisiana
October 2017	Volunteer for Computer Science workshop during the 2017 Women in Engineering and Computing Career Day University of Massachusetts Amherst, Amherst, Massachusetts
August 2017	Volunteer for Computer Science sessions of the 2017 Eureka! Summer Program run by Girls, Inc. (of Holyoke) University of Massachusetts Amherst, Amherst, Massachusetts

Fall 2016 - Summer 2017	Lead Co-Organizer and Proceedings Editor for the User Interfaces and Scheduling and Planning (UISP) Workshop International Conference on Automated Scheduling and Planning (ICAPS) 2017, Pittsburgh, Pennsylvania
Summer 2016 - Spring 2017	Mentor for the Computer Science Women Group's Welcoming the World to Amherst (WW2A) Mentoring Program University of Massachusetts Amherst, Amherst, Massachusetts
January 2017	Co-Organizer of the University of Massachusetts Amherst's Global Game Jam Site University of Massachusetts Amherst, Amherst, Massachusetts
December 2016	Volunteer assistant and elementary school visitor for Computer Science Education Week Liberty School, Springfield, Massachusetts
Summer 2016 - November 2016	Organizing Committee Member for the Artificial Intelligence for Human-Robot Interaction (AI-HRI) Symposium AAAI Fall Symposium Series 2016, Arlington, Virginia
October 2016	Volunteer for Computer Science workshop during the 2016 Women in Engineering and Computing Career Day University of Massachusetts Amherst, Amherst, Massachusetts
Fall 2014 - Fall 2016	Member of the University of Massachusetts Amherst Graduate Women in STEM (GWIS) Professional Development Committee University of Massachusetts Amherst, Amherst, Massachusetts
July 2016	Volunteer for Computer Science sessions of the 2016 Eureka! Summer Program run by Girls, Inc. (of Holyoke) University of Massachusetts Amherst, Amherst, Massachusetts
May 2016	Volunteer for Western Massachusetts Scratch Meetup for Educators University of Massachusetts Amherst, Amherst, Massachusetts
April 2016	Volunteer Session Chair for the Twenty-Second Annual Massachusetts Statewide Undergraduate Research Conference University of Massachusetts Amherst, Amherst, Massachusetts
December 2015	Volunteer assistant and elementary school visitor for Computer Science Education Week Liberty School, Springfield, Massachusetts
October 2015	Volunteer for Computer Science workshop during the 2015 Women in Engineering and Computing Career Day University of Massachusetts Amherst, Amherst, Massachusetts
Fall 2014 - Spring 2015	Student assistant for Python Workshop Series hosted by the University of Massachusetts Amherst Graduate Women in STEM (GWIS) University of Massachusetts Amherst, Amherst, Massachusetts
December 2014	Volunteer assistant and elementary school visitor for Computer Science Education Week Liberty School, Springfield, Massachusetts
October 2014	Volunteer for Computer Science workshop during the 2014 Women in Engineering and Computing Career Day

University of Massachusetts Amherst, Amherst, Massachusetts

June 2014	Volunteer for Computer Science sessions of the 2014 Eureka! Summer Program run by Girls, Inc. (of Holyoke) University of Massachusetts Amherst, Amherst, Massachusetts
April 2014	Volunteer Session Chair for the Twentieth Annual Massachusetts Statewide Undergraduate Research Conference University of Massachusetts Amherst, Amherst, Massachusetts
Summer 2013	Student Volunteer for weekly meetings during the 2013 Research Experience for Undergraduates at UMass (REUMass) University of Massachusetts Amherst, Amherst, Massachusetts
July 2013	Student Volunteer at the Association for the Advancement of Artificial Intelligence 2013 (AAAI-13) Conference Bellevue, Washington
April 2013	Volunteer Session Chair for the Nineteenth Annual Massashusetts Statewide Undergraduate Research Conference University of Massashusetts Amherst, Amherst, Massachusetts
August 2012	Student Volunteer for the Wake@Hanes Workshop sponsored by Google's CS4HS Program Wake Forest University, Winston-Salem, North Carolina
September 2011	Volunteer Assistant for the American Mathematical Society (AMS) Fall Southeastern Section Meeting Wake Forest University, Winston-Salem, North Carolina

Honor Society Memberships

Inducted in 2011	Phi Beta Kappa National Honor Society (North Carolina Delta Chapter)
Inducted in 2010	Upsilon Pi Epsilon Honor Society for the Computing and Information Disciplines (North Carolina Epsilon Chapter)
Inducted in 2010	Pi Mu Epsilon National Honorary Mathematics Society (North Carolina Lambda Chapter)
Inducted in 2010	Golden Key International Honour Society

Professional Organization Memberships

2020 - present	Association for Computing Machinery's Special Interest Group in Computer Science Education (ACM SIGCSE)
2016 - present	Association for Computing Machinery's Special Interest Group in Artificial Intelligence (ACM SIGAI)
2016 - present	Association for Computing Machinery's Special Interest Group in Computer-Human Interaction (ACM SIGCHI)

2016 - present	United States's Japanese Society for the Promotion of Science Fellows Alumni Association (JSPS.USAA)
2014 - present	Association for Computing Machinery's Women in Computing (ACM-W)
2013 - present	Association for the Advancement of Artificial Intelligence (AAAI)
2010 - present	Association for Computing Machinery (ACM) Student Member
2011 - 2012	Mathematical Association of America (MAA)