VASANTH SARATHY

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RESEARCH INTERESTS

My research goal is to identify and study the computational principles behind commonsense reasoning and creative problem solving, and to build artificial agents that can apply these principles ethically. My approach is inherently multi-disciplinary connecting topics in Artificial Intelligence (AI), Human-Robot Interaction (HRI), Cognitive Science and Systems, Neuroscience, Natural Language Understanding, Law, and Ethics and Philosophy.

EDUCATION

2015-	**PhD Candidate,** Computer Science and Cognitive Science (Joint) **Tufts University** *Adams Fellow* Advisors: Matthias Scheutz, Daniel Dennett
2007-2010	**JD**, Law **Boston University School of Law**
2003-2005	**MS**, Electrical Engineering and Computer Science **Massachusetts Institute of Technology** Thesis: Physical Modeling of Electrical Conduction in Printed Circuit Board Insulation Selected coursework: Digital Communication, Optics, Electromagnetics
1999-2003	**BS**, Electrical Engineering **University of Arkansas** Senior Project: Remotely-Controlled Vehicle for Out-of-Sight Applications *Summa Cum Laude* Selected coursework: Computational Electromagnetics, Signal Processing, Circuits

HONORS AND AWARDS

2019	NSF Student Travel Grant ($1000)
2018	Best Poster, Graduate Student Research Symposium, Tufts University
2017	Robert Glushko Travel Prize, *39th Annual Meeting of the Cognitive Science Society*
2016	Winner of Graduate Student Research Competition ($1000 Grant), Tufts University
2016	Best 5-minute Talk, Graduate Student Research Symposium, Tufts University
2016	NSF Student Travel Grant ($2,250),
2015	John A. Adams & Dorothy M. Adams Graduate Fellowship ($30,000), Tufts Univ. School of Engineering's most prestigious award.
2015	Graduate Student Travel Award ($400), Tufts University

2014	Semi-finalist at MassChallenge - world's largest startup accelerator and competition, Web-based productivity tool (MetaMoo) to track the human thought process
2011-2013	Invited member of the Best Practices Committee, Ropes & Gray Intellectual Property Group
2010	Admitted to the Bar in the Commonwealth of Massachusetts
2007	Admitted to practice at the United States Patent and Trademark Office
2005	Special Service Award for "Outstanding Performance and Lasting Contribution to the Sidney-Pacific Community," MIT
2004-2005	Chairman, Committee on Scholarly Interaction, MIT Sidney-Pacific Graduate Community
	• Coordinated lecture series with average attendance of 200 people
	• Speakers included Noam Chomsky, Robert Langer and John Deutch
2002-2003	President, Eta Kappa Nu, Electrical Engineering Honor's Society - University of Arkansas
2003	Academic Merit Scholarship, $1000 from the Department of Electrical Engineering, University of Arkansas
2002	1st place International Intercollegiate Solar Boat Competition (Solar Splash 2002), representing the University of Arkansas
2002	Academic Merit Scholarship, $1000 from the Department of Electrical Engineering, University of Arkansas
2001	Academic Merit Scholarship, $1000 from the Department of Electrical Engineering, University of Arkansas
2000	National Society of Collegiate Scholars Merit Award, Given to 2 students in the entire university of about 20,000 students
1999	Chancellor's Scholarship (Full Tuition, Room and Board for all four years) to University of Arkansas

PUBLICATIONS

Journal Articles

2018	Real World Problem-Solving
	Vasanth Sarathy
	Frontiers in Human Neuroscience
2018	MacGyver Problems: AI Challenges for Testing Resourcefulness and Creativity
	Vasanth Sarathy, Matthias Scheutz
	Advances in Cognitive Systems
2016	A Logic-based Computational Framework for Inferring Cognitive Affordances
	Vasanth Sarathy, Matthias Scheutz
	IEEE Transactions on Cognitive and Developmental Systems

Book Chapters

2019	An Overview of the Distributed Integrated Cognition Affect and Reflection DIARC Architecture
	Matthias Scheutz, Thomas Williams, Evan Krause, Bradley Oosterveld, Vasanth Sarathy, Tyler Frasca
	Cognitive Architectures, Intelligent Systems, Control and Automation: Science and Engineering book series. Springer, 2019 (Forthcoming)

Peer-Reviewed Conference Papers

2019	On Resolving Ambiguous Anaphoric Expressions in Imperative Discourse
	Vasanth Sarathy and Matthias Scheutz
	Proceedings of the 33rd AAAI Conference on Artificial Intelligence (AAAI)
2019	Toward the Engineering of Virtuous Machines
	Naveen Sundar Govindarajulu, Selmer Bringsjord, Rikhiya Ghosh, Vasanth Sarathy
	Proceedings of the AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society (AIES)

2018	Quasi-Dilemmas for Artificial Moral Agents
	Daniel Kasenberg, Vasanth Sarathy, Tom Williams, Thomas Arnold, Matthias Scheutz
	Proceedings of the International Conference on Robot Ethics and Standards (ICRES)
2018	Learning Cognitive Affordances for Objects from Natural Language Instruction
	Vasanth Sarathy, Bradley Oosterveld, Evan Krause, Matthias Scheutz
	Proceedings of the Conference on Advances in Cognitive Systems (ACS)
2018	Knowledge Acquisition in the Cockpit Using One-Shot Learning
	Evana Gizzi, Lisa Le Vie, Matthias Scheutz, Vasanth Sarathy, Jivko Sinapov
	IEEE National Aerospace and Electronics Conference (NAECON), Dayton, OH, Jul. 23-26, 2018.
2017	Mental Representations and Computational Modeling of Context-Specific Human Norm Systems
	Vasanth Sarathy, Matthias Scheutz, Joseph Austerweil, Yoed Kenett, Mowafak Allaham, Bertram Malle
	Proceedings of the 39th Annual Meeting of the Cognitive Science Society
2017	Learning Behavioral Norms in Uncertain and Changing Contexts
	Vasanth Sarathy, Matthias Scheutz, Bertram Malle
	Proceedings of the 2017 8th IEEE International Conference on Cognitive Infocommunications
2016	Beyond Grasping - Perceiving Affordances across Various Stages of Cognitive Development
	Vasanth Sarathy, Matthias Scheutz
	Proceedings of the Sixth Joint IEEE International Conference on Developmental Learning and Epigenetic Robotics (ICDL-EpiRob)
2016	Cognitive Affordance Representations in Uncertain Logic
	Vasanth Sarathy, Matthias Scheutz
	Proceedings of the 15th International Conference on Principles of Knowledge Representation and Reasoning (KR)

Workshops, Posters, Symposia and Doctoral Consortia

2019	Learning Context-Sensitive Norms under Uncertainty
	Vasanth Sarathy
	Proceedings of the Student Program at AIES
2018	Real World Problem-Solving: How can one's environment influence the cognitive processes underlying creative problem-solving? (Poster)
	Vasanth Sarathy
	Proceedings of the 5th Meeting of the Society for the Neuroscience
2018	Multiagent Norm Identification: A Belief-Theoretic Approach for Automatically Identifying Explicitly Represented Norms from Observation
	Vasanth Sarathy, Matthias Scheutz
	Proceedings of the New England Machine Learning Conference
2018	MacGyver Problems: AI Challenges for Testing Resourcefulness and Creativity
	Vasanth Sarathy, Matthias Scheutz
	Proceedings of the Conference on Advances in Cognitive Systems (ACS)
2018	A Generalized Framework for Detecting Anomalies in Real-Time using Contextual Information
	Evana Gizzi, Lisa Le Vie, Matthias Scheutz, Vasanth Sarathy, Jivko Sinapov
	Workshop Modeling and Reasoning in Context (MRC), IJCAI
2016	Cognitive Affordance Representations in Uncertain Logic
	Vasanth Sarathy
	Proceedings of the 2016 KR Doctoral Consortium
2016	Enabling Basic Normative HRI in a Cognitive Robotic Architecture
	Vasanth Sarathy, Jason Wilson, Thomas Arnold, Matthias Scheutz
	Proceedings of the 2nd Workshop on Cognitive Architectures for Social Human-Robot Interaction at the 11th ACM/IEEE Conference on Human-Robot Interaction (HRI)
2016	Inferring Higher-Order Affordances for More Natural Human-Robot Collaboration
	Vasanth Sarathy
	Proceedings of the Pioneers Workshop at the 11th ACM/IEEE Conference on Human-Robot Interaction (HRI)

2015	Semantic Representation of Objects and Function
	Vasanth Sarathy, Matthias Scheutz
	Proceedings of the 2015 IEEE/RSJ IROS Workshop on Learning Object Affordances
2005	Physical Modeling of Electrical Conduction in Printed Circuit Board Insulation
	Vasanth Sarathy, Thomas Keim, Chatham Cooke
	MIT Thesis
2004	Physical Modeling of Electrical Conduction in Printed Circuit Board Insulation (Poster)
	Vasanth Sarathy, Thomas Keim, Chatham Cooke
	MIT Industry Consortium on Advanced Automotive Electrical/Electronic Systems and Components, Barcelona, Spain
2003	Computational Approach to Solve Electromagnetic Fields for Microstrip Antennas (Poster)
	Vasanth Sarathy, Magda El-Shenawee
	Arkansas Academy of Science Conference

Proprietary Internal Publications

2002	Novel Technique for Real-time Inversion of Acoustic Field Data
	Vasanth Sarathy, Canyun Wang
	Schlumberger-Doll Research Confidential Internal Publication
2002	Inversion of Compression Data using Perturbation Theoretic Techniques
	Vasanth Sarathy, Canyun Wang, Sandip Bose
	Schlumberger-Doll Research Confidential Internal Publication

SERVICE AND OUTREACH

Professional Service

2018	Reviewer, HRI 2019
2018	Reviewer, IROS 2018
2017	Reviewer, Graduate Student Research Competition Review Committee
2017	Reviewer, AAAI 2017 Fall Symposium
2017	Reviewer, ICDL 2017
2016-2017	Program Committee Co-Chair, HRI 2017 Pioneers Workshop, Vienna, Austria
2016	Reviewer, AAAI 2016 Fall Symposium

Community Outreach

2018	Volunteer, Reverse Science Fair, Medford High School
2018	Invited Blog Post, The Creativity Post
2017	Volunteer Representative, Robot Block Party, City of Boston and MassRobotics
2017	Volunteer, Reverse Science Fair, Medford High School
2016	Volunteer, Tufts Community Day
2016	Official Blogger, Tufts School of Arts, Science and Engineering

TALKS AND TEACHING

Talks (Science)

2019	TEDx Tufts (forthcoming)
2018	Taste of Science, "Common sense is not Common . . . especially among robots"
2016	Cambridge Science Festival, "What would MacGyver do with a Beer Bottle"

Talks (Law)

2013	Introduction to the America Invents Act
2012	Apple v. Samsung – Lessons in Patent Law from the $1 Billion verdict
2010	MDY Industries v. Blizzard Entertainment – Open Source Software Law

Teaching Assistant

2019	Human-Robot Interaction
2019	Ethics for AI, Robotics, and Human-Robot Interaction
2002	Electromagnetic Fields and Waves
2002	Electromechanical Energy Conversion

MENTORSHIP

Scientific

2018	Emily Sim, Undergraduate Research, Tufts University
2018	Jacqueline Enderle, Undergraduate Research, Tufts University
2018	Vivian Hong, Undergraduate Research, Tufts University
2017	Connor Coale, High School Intern, Manchester-by-the-Sea
2017	Dhruv Srinivas, High School Intern, Concord Academy
2017	Mar Freeman, Undergraduate Research, Tufts University
2017	Benjamin Machlin, Undergraduate Research, Tufts University
2017	Kennedy Bailey, Undergraduate Research, Tufts University
2016	Jerry Liang, High School Intern, Concord Academy
2016	Ballard Blair, Undergraduate Research, Tufts University
2016	Erica Luzzi, Undergraduate Research, Tufts University
2016	Danish Bhatti, Undergraduate Research, Tufts University

Legal

2013	Jason Sussman, Technical Advisor, Ropes & Gray, (MIT Alum)
2012	Saurabh Gupta, Technical Advisor, Ropes & Gray, (MIT Alum)
2011	Grace Wang, Technical Advisor, Ropes & Gray, (MIT Alum)
2010	Caroline Greenwood, Technical Advisor, Ropes & Gray, (Cornell Alum)
2009	Karan Singh, Associate, Ropes & Gray, (Cornell Alum)
2008	Tan Mau Wu, Technical Advisor, Ropes & Gray, (MIT Alum)
2008	Laura Zager, Patent Agent, Ropes & Gray, (MIT Alum)
2007	Tushar Parlikar, Patent Agent, Ropes & Gray, (MIT Alum)
2006	Matthew Bertenthall, Associate, Ropes & Gray, (Cornell Alum)

EMPLOYMENT

2015 -	Tufts University
	Graduate Research Assistant, Human-Robot Interaction Laboratory
2014	MetaMoo, LLC
	CEO/CTO and Founder
2005-2013	Ropes & Gray LLP
	Associate, Intellectual Property Group
2003-2005	Massachusetts Institute of Technology – Research Laboratory for Electronics
	Graduate Research Assistant, MIT/ Automotive Consortium

2003	Schlumberger – Schlumberger Product Center
	Research Assistant
2002	Schlumberger – Schlumberger-Doll Research Center
	Research Assistant
2002-2003	University of Arkansas – Electromagnetics and Microwave Group
	Undergraduate Research Assistant

OTHER INTERESTS

Cartooning   Creator **www.legallydrawn.com**, works published in BU Law Alumni Journal ("The Record"), Above the Law, Patently-O, and ABA Journal