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† formerly Sarratt

Trevor Santarra[†]

Education

- 2011–Present **Ph.D. in Computer Science**, *University of California at Santa Cruz*.
Research interests: Ad Hoc Teams, Multiagent Planning, Active Learning, Behavior Modeling
- 2007–2011 **B.S. in Applied Mathematics**, *University of Tulsa*.
Minors in Biology, Chemistry, and Computer Science

Experience

- 2015–Present **Ph.D. Candidate**, *University of California at Santa Cruz*.
 - Examining communication of intentions as a form of active learning in ad hoc teamwork.
 - Developing a decision-theoretic planning framework incorporating agent models constructed from prior knowledge, online observations, and communicated intentions.
- 2011–2015 **Ph.D. Student**, *University of California at Santa Cruz*.
 - Explored alternative belief revision approaches to agent modeling when coordinating with inconsistent agents.
 - Assisted in research collaborations involving computer vision and machine learning utilizing depth sensors.
- Summer 2013 **Visiting Researcher**, *University of Southern California*.
Institute for Creative Technologies
 - Proposed and implemented recursive mental models for wartime negotiation simulations.
 - Extended the functionality of the POMDP-based social simulation tool, PsychSim.
- Winter 2013 **Research Intern**, *Honda Research Institute*.
 - Developed a real-time driver monitoring system using depth sensors and machine learning.
 - See Patent US9501693 B2.
- 2008–2011 **Student Researcher**, *University of Tulsa*.
Computational Neuroscience and Adaptive Systems Lab
 - Programmed several video processing algorithms in Java for *C. elegans* video analysis.
 - Implemented neural controllers into the ALIVE simulator.
Gryllotalpa Major Ecology Lab
 - Performed DNA sequencing on tissue samples from various cricket species.
 - Aligned sequences and constructed phylogeny trees from probable mutation histories.
Institute of Bioinformatics and Computational Biology
 - Implemented complex biological models using a stochastic pi-calculus.
 - Developed a model for iron diffusion across membranes using a grid of stochastic cells.

Patents

- 2013 **Sarratt, Trevor** and Fujimura, Kikuo. Real-time multiclass driver action recognition using random forests. U.S. Patent 9501693 B2

Service

- 2017 **Program Chair**, *Fourth Workshop on Multiagent Interaction without Prior Coordination*, AAMAS-2017, Sao Paulo, Brazil.

Skills

Languages Python, C++, Java, C#

Specialties Decision-theoretic Planning, Multiagent Systems, Machine Learning, Game AI

Teaching

Teaching Assistant, *University of California at Santa Cruz*.

Winter 2017 CMPM171: Game Design Studio II

Winter 2016 CMPM146: Game AI

Spring 2015 CMPM172: Game Design Studio III

Winter 2012 CMPS20: Game Design Experience

Teaching Assistant, *University of Tulsa*.

Spring 2010 MATH2024: Calculus II

Fall 2009 MATH2024: Calculus II

Papers

- 2016 **Trevor Sarratt** and Arnav Jhala. "Policy Communication for Coordination with Unknown Teammates" *3rd Workshop on Multiagent Interaction without Prior Coordination, AAAI-16*.
- 2015 **Trevor Sarratt** and Arnav Jhala. "Tuning Belief Revision for Coordination with Inconsistent Agents" Eleventh Annual AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment, 2015.
- 2015 **Trevor Sarratt** and Arnav Jhala. "The Role of Models and Communication in the Ad Hoc Multi-Agent Team Decision Problem" *The Third Annual Conference on Advances in Cognitive Systems, Atlanta, GA*.
- 2015 **Trevor Sarratt** and Arnav Jhala. "RAPID: A Belief Convergence Strategy for Collaborating with Inconsistent Agents" *Second Workshop on Multiagent Interaction without Prior Coordination, AAAI-15*.
- 2014 **Trevor Sarratt**, Soja Marie Morgens, and Arnav Jhala. "Domain-Specific Sentiment Classification for Games-Related Tweets" *Third Workshop on Games and NLP, AIIDE-14*.
- 2014 **Trevor Sarratt**, David Pynadath, and Arnav Jhala. "Converging to a Player Model in Monte-Carlo Tree Search" *IEEE Conference on Computational Intelligence and Games, CIG-2014*.
- 2011 Roger Mailler, Jacob Graves, Nathan Willy, and **Trevor Sarratt**. "A Biologically Accurate Simulation of the Locomotion of *Caenorhabditis elegans*," in *The International Journal on Advances in Life Sciences*, vol. 2(3), pp. 82-93.
- 2010 Abinash Padhi, Richard E. Young, Jr., Cara Hoffart, **Trevor Sarratt**, Jennifer Fancher, Michael Steffen and Peggy S. M. Hill. "Investigating genetic relationships within the Gryllotalpidae: A molecular hypothesis," in *Journal of Orthoptera Research*, vol. 19(2), pp. 357-360.
- 2009 Stephen Tyree, Rayus Kuplicki, **Trevor Sarratt**, Scott Fujan and John Hale. "GridSPiM: A Framework for Simple Locality and Containment in the Stochastic Pi-Calculus," in *Lecture Notes in Computer Science: Bioinformatics and Computational Biology*, pp. 409-423.

Posters

- 2016 **Trevor Santarra** and Arnav Jhala. "Communicating Intentions for Coordination with Unknown Teammates" *The Fifteenth Annual Conference on Autonomous Agents and Multiagent Systems, Singapore*.
- 2014 **Trevor Sarratt**. "Leveraging Communication for Player Modeling and Cooperative Play" *The 10th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*.
- 2010 Richard Young, **Trevor Sarratt**, and Peggy Hill. "Investigating genetic relationships within the Gryllotalpidae." *Animal Behaviour Society, Annual Meeting, Williamsburg, VA*.
- 2008 Stephen Tyree, Rayus Kuplicki, **Trevor Sarratt**, Scott Fujan and John Hale. "Towards a Multi-Level Calculus for Cellular Modeling and Simulation". *International Society for Computational Biology, Sixth Rocky Mountain Bioinformatics Conference, Aspen, CO*.