Peter Herald Stone

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Dept. of Computer Science
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RESEARCH STATEMENT

I am a computer scientist with research specialization in artificial intelligence. My long-term research goal is to create complete, robust, autonomous agents that can *learn to interact* with other intelligent agents in a wide range of complex, dynamic environments. These agents must sense their environment; engage in high-level cognitive decision-making; and then execute their actions in the environment. Moreover, to be effective, they should improve their performance automatically over time and reason explicitly about the behaviors of other agents, including teammates and adversaries. Thus, my research contributions are mainly in the areas of machine learning, autonomous agents and multiagent systems, robotics, and e-commerce. Application domains have included robot soccer, autonomous bidding agents, intelligent traffic management, social agents, and autonomous vehicles.

PROFESSIONAL PREPARATION

- **Carnegie Mellon University**, Pittsburgh, PA
  Ph.D., Computer Science, December 1998.
  Dissertation: *Layered Learning in Multi-Agent Systems*.
  Thesis committee: Manuela Veloso (chair), Andrew Moore, Herbert Simon, Victor Lesser.
  M.S., Computer Science, December 1995.
- **The University of Chicago**, Chicago, IL
  B.S., Mathematics with honors and a concentration in Computer Science, June 1993.

APPOINTMENTS

- **The University of Texas at Austin**, September 2007 – present.
  Associate Professor in the Department of Computer Sciences and Center for Perceptual Systems.
- **The Hebrew University of Jerusalem** and **Bar Ilan University**, September 2008 – June 2009.
  Visiting Professor in the Computer Science Departments.
- **The University of Texas at Austin**, June 2002 – August 2007.
  Assistant Professor in the Department of Computer Sciences and Center for Perceptual Systems.
- **Sidley Austin LLP**, May – July 2009.
  Consultant. Patent infringement case expert.
- **Corporation for National Research Initiatives (CNRI)**, May – September 2002.
  Consultant. Developed possibilities for future DARPA programs pertaining to multiagent systems.
- **New York University**, September 2001 – January 2002.
  Adjunct Professor in the Computer Science Department.
- **AT&T Labs — Research**, September 1999 – March 2002.
  Senior Researcher in the Artificial Intelligence Department.
- **Carnegie Mellon University**, January 1999 – August 1999.
  Postdoctoral Fellow in the Computer Science Department.
- **Perspectives, Inc.**, April 1998 – March 1999.
  Consultant. Created a comprehensive report on the state of the art in multiagent systems.
- **Carnegie Mellon University**, August 1993 – December 1998.
  Graduate Research Assistant. Created a framework by which multiple intelligent agents can learn to act both individually and in coordination with one another in real-time, noisy, collaborative, and adversarial environments. Developed a flexible commitment strategy for interleaving planning and execution in the PRODIGY planner.
- **Jet Propulsion Laboratory**, May – August 1995.
  Summer intern. Worked on automatic planning and scheduling for the New Millennium Project.

AWARDS AND RESEARCH DISTINCTIONS

- Elected **Board Member**, International Machine Learning Society (IMLS), March 2011.
- Leader of **1st-place** teams in the **Trading Agent Competition** (TAC), June 2010; July 2009; July 2008; May 2006; August 2005; August 2003; October 2001; July 2000.
- Adviser to Winner of UT Austin's **Best Dissertation Award** (Kurt Dresner), May 2010.
- **Best Student Paper Award**, International Conference on Autonomous Agents and Multiagent Systems (AAMAS), May 2010.
- RoboCup **US Open Champion** team leader, standard platform league, May 2010, May 2009.
- **Best Student Paper Award**, RoboCup Symposium, July 2009.
- **William David Blunk Memorial Professorship**, in recognition of undergraduate teaching, 2008–09.
- **Fulbright Award**, 2008–09.
- **Guggenheim Fellow**, 2008–09.
- Elected **Board Member**, International Foundation of Autonomous Agents and Multi-Agent Systems (IFAAMAS), March 2008.
- Austin Business Journal **Tech Innovation Award**, November 2007.
- **Best Paper Award**, RoboCup Symposium, July 2007.
- **IJCAI Computers and Thought Award**, January 2007: *highest award in Artificial Intelligence.*
- **Best Paper Award**, Genetic and Evolutionary Computation Conference, GA Track, July 2006.
- **Best Student Paper Award**, RoboCup Symposium, June 2006.
- Elected **Councilor**, Association for the Advancement of AI (AAAI), July 2005–2008.
- **Alfred P. Sloan Research Fellow**, September 2004 – 2006.
- **Office of Naval Research (ONR) Young Investigator**, June 2004 – May 2007.
- **IBM Faculty Award**, 2005, 2004, 2003.
- **World Champion** team member in 6 **RoboCup** events: simulator coach competition, July 2005, July 2003; simulator competition, August 1999; simulator and small-size robot competitions, July 1998; small-size robot competition, August 1997.
- National Science Foundation **CAREER Award**, February 2003 – January 2008.
- **Best Paper Award**, Autonomous Agents Conference, May 2001.
- AT&T Labs — **Research Innovator**, 2000.
- **NASA Graduate Student Research Program Fellowship**, 1997 – 1999.
- **Allen Newell Medal for Research Excellence**, August 1997.
- **NASA Certificate of Recognition** for the creative development of a technical innovation entitled "DCAPS Iterative Repair Planning and Scheduling System," June 1997.
- **Pennsylvania Space Grant Consortium** fellowship, 1996.
- **Hertz Foundation Research Fellowship Grant**, 1995. (note: not the Hertz Graduate Fellowship)
- **National Science Foundation** honorable mention, 1993, 1994.
- **Undergraduate Research Stipend** – Florida State University, June – August 1992.
- **State Farm Exceptional Student Fellowship**, June 1992.
- **The University of Chicago : Phi Beta Kappa**, **Sigma Xi**, **Dean's List** every year, **College Honor Scholarship**: merit-based 4-yr, full-tuition scholarship, **National Merit Scholarship**, **Maroon Key Society**, **Student Marshall**, **Scholar-Athlete Award**: 4-yr varsity letterman with highest GPA.

TEACHING

- **Associate Professor** at **The University of Texas at Austin**: September 2007 – present.
  CS 394R *Reinforcement Learning: Theory and Practice.* Spring 2011. Instructor rating: 4.8/5.0
  CS 344M *Autonomous Multiagent Systems.* Autumn 2010. Instructor rating: 4.8/5.0
  CS 343 *Artificial Intelligence.* Spring 2010. Instructor rating: 4.7/5.0
  CS 393R *Autonomous Robots.* Autumn 2009. Instructor rating: 4.9/5.0
  CS 344M *Autonomous Multiagent Systems.* Spring 2008. Instructor rating: 4.9/5.0
  CS 394R *Reinforcement Learning: Theory and Practice.* Autumn 2007. Instructor rating: 4.9/5.0
- **Assistant Professor** at **The University of Texas at Austin**: June 2002 – August 2007.
  CS 378 *Autonomous Vehicles — Driving in Traffic.* Spring 2007. Instructor rating: 4.7/5.0
  CS 395T *Agent-Based Electronic Commerce.* Autumn 2006. Instructor rating: 4.9/5.0
  CS 378 *Autonomous Multiagent Systems.* Spring 2006. Instructor rating 4.8/5.0

CS 395T *Autonomous Robots.* Autumn 2005. Instructor rating 4.7/5.0
CS 378 *Autonomous Multiagent Systems.* Spring 2005. Instructor rating: 4.9/5.0
CS 395T *Reinforcement Learning: Theory and Practice.* Autumn 2004. Instructor rating: 4.7/5.0
CS 378 *Autonomous Multiagent Systems.* Spring 2004. Instructor rating: 4.8/5.0
CS 395T *Agent-Based Electronic Commerce.* Autumn 2003. Instructor rating: 4.6/5.0
CS 395T *Multi-Robot Systems.* Spring 2003. Instructor rating: 4.3/5.0
CS 378 *Autonomous Multiagent Systems.* Autumn 2002. Instructor rating: 4.9/5.0
- **Adjunct Professor** at **New York University**: September 2001 – January 2002.
  Graduate class *Autonomous Multiagent Systems.* Autumn 2001. Instructor rating: 4.6/5.0
- **Tutorials** on *autonomous bidding agents* at AAMAS-07 and AAAI-07, May – July 2007.
- **Tutorials** on *robot soccer* at AAAI-99, Agents-99, and IJCAI-99, May – August 1999.
- **Teaching Assistant**, *How to Think Like a Computer Scientist* with Prof. Steven Rudich. Spring 1996.
- **Teaching Assistant**, *Introduction to Artificial Intelligence* with Prof. Jaime Carbonell. Spring 1995.
- **College Mathematics Tutor** at the University of Chicago. 1992-93.
- **Private Violin Teacher** in Buffalo, NY. Taught 40 students individually. August 1989-August 1991.

THESIS COMMITTEES
- **Doctoral Committee Supervisor:** (The University of Texas at Austin)
  - David Pardoe, defended April 2010.
    Adaptive Trading Agent Strategies Using Market Experience.
  - Nicholas K. Jong, defended December 2010.
    Structured Exploration for Reinforcement Learning.
  - Gregory Kuhlmann, defended August 2010.
    Automated Domain Analysis for General Game Playing.
  - Kurt Dresner, defended October 2009.
    Autonomous Intersection Management.
  - Matthew E. Taylor, defended June 2008.
    Autonomous Inter-Task Transfer in Reinforcement Learning Domains.
  - Daniel Stronger, defended June 2008.
    Autonomous Sensor and Action Model Learning for Mobile Robots.
  - Shimon Whiteson, defended April 2007.
    Adaptive Representations for Reinforcement Learning.
  - Mohan Sridharan, defended April 2007.
    Robust Structure-Based Autonomous Color Learning on a Mobile Robot.
  - Juhyun Lee, current (proposal Autumn 2009).
    Color Constancy for Mobile Robots using Computer Graphics.
  - Shivaram Kalyanakrishnan, current (proposal Autumn 2009).
    Learning Methods for Sequential Decision Making in Practice.
  - W. Bradley Knox, current (proposal Summer 2010).
    Interactively Shaping Agents via Human Reinforcement.
  - Todd Hester, current (proposal Autumn 2010).
    Temporal Difference Reinforcement Learning in Time-Constrained Domains.
  - Doran Chakraborty, current (proposal Autumn 2010).
    Learning in the Presence of Other Agents.
- **Doctoral Committee Member:** (The University of Texas at Austin)
  - Vinod Valsalam, Computer Science, Supervisor: Risto Miikkulainen.
    Utilizing Symmetry In Evolutionary Design, defended August 2010.
  - Jonathan Mugan, Computer Science, Supervisor: Ben Kuipers.
    Autonomous Qualitative Learning of Distinctions and Actions in a Developing Agent,
    defended August 2010.
  - Yuliya Lierler, Computer Science, Supervisor: Vladimir Lifschitz.
    SAT-Based Answer Set Programming, defended April 2010.

— Yiu Fai Sit, Computer Sciences, current. Supervisor: Risto Miikkulainen.
A Population Gain Control Model of Spatiotemporal Responses in the Visual Cortex,
defended August 2009.
— Nate Kohl, Computer Science, Supervisor: Risto Miikkulainen.
Learning in Fractured Problems with Constructive Neural Network Algorithms,
defended August 2009.
— Lilyana Mihalkova, Computer Science, Supervisor: Ray Mooney.
Learning with Markov Logic Networks: Transfer Learning, Structure Learning, and an Application to Web Query Disambiguation, defended July 2009.
— Aniket Murarka, Computer Sciences, Supervisor: Ben Kuipers.
Building Safety Maps using Vision for Safe Local Mobile Robot Navigation,
defended August 2009.
— Michael Bond, Computer Sciences, current. Supervisor: Kathryn McKinley.
Diagnosing And Tolerating Bugs In Deploymed Systems, defended September 2008.
— Patrick Beeson, Computer Sciences. Supervisor: Ben Kuipers.
Creating And Utilizing Hybrid Representations Of Spatial Knowledge Using Mobile Robots,
defended August 2008.
— Selim Erdogan, Computer Sciences. Supervisor: Vladimir Lifschitz.
A Library of General-Purpose Action Descriptions, defended July 2008.
— Tal Tversky, Computer Sciences. Supervisor: Risto Miikkulainen, Bill Geisler.
Motion Perception and Scene Statistics of Motion, defended April 2008.
— Nedialko Dimitrov, Computer Sciences. Supervisor: Greg Plaxton.
Coping with Dynamic Membership, Selfishness, and Incomplete Information: Applications of Probabilistic Analysis and Game Theory, defended April 2008.
— Youngin Shin, Computer Sciences, current. Supervisor: Don Fussell.
Parametric Kernels for Structured Data Analysis, defended December 2007.
— Karen Fullam, Electrical and Computer Engineering (ECE). Supervisor: K. Suzanne Barber.
Adaptive Trust Modeling in Multi-Agent Systems: Utilizing Experience and Reputation,
defended November 2007.
— Rohit Kate, Computer Sciences. Supervisor: Ray Mooney.
Learning For Semantic Parsing With Kernels Under Various Forms Of Supervision,
defended August 2007.
— Jefferson Provost, Computer Sciences. Supervisors: Ben Kuipers, Risto Miikkulainen.
Reinforcement Learning in High-Diameter Continuous Environments, defended August 2007.
— Joseph Modayil, Computer Sciences. Supervisor: Ben Kuipers.
Robot Developmental Learning of an Object Ontology Grounded in Sensorimotor Experience,
defended June 2007.
— Wallace Earl Depue, Jr. (Music), Supervisor: Andrew Dell'Antonio.
Central Park Reel for Violin and Piano, defended November 2006.
— Bobby Bryant, Computer Sciences, Supervisor: Risto Miikkulainen.
Evolving Visibly Intelligent Behavior For Embedded Game Agents, defended July 2006.
— Mikhail Bilenko, Computer Sciences, Supervisor: Raymond Mooney.
Learnable Similarity Functions and Their Applications, defended July 2006.
— Prem Melville, Computer Sciences, Supervisor: Raymond Mooney
Creating Diverse Ensemble Classifiers to Reduce Supervision, defended November 2005.
— Joohyung Lee, Computer Sciences, Supervisor: Vladimir Lifschitz.
Automated Reasoning about Actions, defended May 2005.
— Brett Mitchell, Music, Supervisors: Byron Almén, Kevin Noe.
Mahler and the Art of Self-borrowing, defended May 2005.
— Joon Woo Kim, Electrical and Computer Engineering (ECE), Supervisor: K. Suzanne Barber.
Trusting Information and Sources in Open Multi-Agent Systems, defended November 2003.
— David Han, ECE, current. Supervisor: K. Suzanne Barber.
— Changhai Xu, Computer Science, current. Supervisor: Kristen Grauman.
— Jacob Schrum, Computer Science, current. Supervisor: Risto Miikkulainen.
— David Chen, Computer Science, current. Supervisor: Ray Mooney.

- Dmitry Kit, Computer Science, current. Supervisor: Dana Ballard.
- Bryan Silverthorn, Computer Science, current. Supervisor: Risto Miikkulainen.
- Andrew Hunter, ECE, current. Supervisor: Jeff Andrews.
- Chinmayi Krishnappa, Computer Science, current. Supervisor: Greg Plaxton.
- Jeremy Stober, Computer Science, current. Supervisors: Ben Kuipers, Risto Miikkulainen.
- Wenke Li, Neuroscience, current. Supervisor: Mike Mauk.

- **Doctoral Committee Member:** (External)
  - Matteo Leonetti, Ingegneria Informatica, University of Rome. Supervisor: Luca Iocchi. *Robot Teams for Multi-Objective Tasks*. November 2010.
  - Alessandro Lazaric, Elettronica e Informazione, Politecnico Di Milano. Supervisor: Andrea Bonarini. *Knowledge Transfer in Reinforcement Learning*. January 2008.
  - Min-Sub Kim, Computer Science and Engineering, University of New South Wales, Australia. Supervisor: Will Uther. *Reinforcement Learning by Incremental Patching*. January 2008.
  - Vittorio Ziparo, Ingegneria Informatica, University of Rome. Supervisor: Daniele Nardi. *Robot Teams for Multi-Objective Tasks*. November 2007.
  - Christian Quintero, Department of Electronics, Computer Science and Automatic Control, University of Girona. Supervisor: Josep Ll. de la Rosa. *Introspection on Control-grounded Capabilities. An Agent-inspired Approach for Control* . October 2007.
  - Robert Abbott, Computer Science, U. of New Mexico, current. Supervisor: Stephanie Forrest. *Automated Tactics Modeling: Techniques and Applications*. April 2007.
  - Jelle Kok, Computer Science, University of Amsterdam, Netherlands. Supervisor: Nikos Vlassis. *Coordination and Learning in Cooperative Multiagent Systems*. November 2006.
  - Michael Quinlan, University of Newcastle, Australia. Supervisor: Stephan Chalup. *Machine Learning on AIBO Robots*. June 2006.
  - Jeff Riley, RMIT, Australia. Supervisor: Victor Ciesielski. *Evolving Fuzzy Rules for Goal-Scoring Behaviour in a Robot Soccer Environment*. February 2006.

- **Masters Thesis Supervisor:** (The University of Texas at Austin)
  - Neda Shahidi, ECE, Summer 2010. *A Response Delayed Policy for Autonomous Intersection Management*.
  - Gurushyam Hariharan, ECE, Spring 2004. *News Mining Agent for Automated Stock Trading*.
  - Harish Subramanian, ECE, Summer 2004. *Evolutionary Algorithms in Optimization of Technical Rules for Automated Stock Trading*.

- **Masters Thesis Reader:** (The University of Texas at Austin)
  - Aravind Gowrisankar, Computer Sciences, Autumn 2008. Supervisor: Risto Miikkulainen. *Evolving Controllers for Simulated Car Racing Using Neuroevolution*.
  - Travis Mercker, Aerospace Engineering, Spring 2008. Supervisor: Maruthi Akella. *Self-Organization and Navigation Algorithms for Deployable Decentralized Sensor Networks*.
  - Karen Fullam, ECE, Autumn 2003. Supervisor: K. Suzanne Barber. *An Expressive Belief Revision Framework Based on Information Valuation*.

- **Undergraduate Honors Thesis Supervisor** (The University of Texas at Austin)
  - Chau Nguyen, Computer Science, Autumn 2009. *Constructing Drivability Maps From 3D Laser Range Data for Autonomous Vehicles*.
  - Adam Setapen, Computer Science, Spring 2009. *Exploiting Human Motor Skills for Training Bipedal Robots*.
  - Tarun Nimmagadda, Computer Sciences, Spring 2008. *Building an Autonomous Ground Traffic System*.
  - Ryan Madigan, Computer Sciences, Spring 2007. *Control Module for an Autonomous Mobile Robot Operating in an Urban Environment*.
  - Jan Ulrich, Computer Sciences, Spring 2006. *An Analysis of the 2005 TAC SCM Finals*.
  - Irvin Hwang, Computer Sciences, Spring 2005. *Discovering Conditions for Intermediate Reinforcement with Causal Models*.
  - Ellie Lin, Computer Sciences, Autumn 2003. *Creation of a Fine Controlled Action for a Robot*.

- **Undergraduate Thesis Reader:** (The University of Texas at Austin)
  – David Robson, Computer Science, Spring 2010. Supervisor: Risto Miikkulainen.
    Hierarchical Neural Networks for Behavior-Based Decision Making.
  – Laurel Issen, Computer Sciences, Spring 2006. Supervisor: Bill Geisler.
    Using Edge Statistics for Object Recognition.
  – Clare Richardson, Computer Sciences, Autumn 2005. Supervisor: Ben Kuipers.
    Rapid, High Precision Control in Tightly Constrained Environments.

OTHER ADVISING

- **Postdoctoral Fellows:** Noa Agmon (2010–present), Tsz-Chiu Au (2008–present), Michael Quinlan (2007–2011), Tobias Jung (2008–2010), Ian Fasel (2007–2008), Yaxin Liu (2004–2007), Bikramjit Banerjee (2006).
- **Other Current UT Austin Ph.D. students:** Samuel Barrett, Katie Genter, Matthew Hausknecht, Piyush Khandelwal, Patrick MacAlpine, Daniel Urieli.
- **Other UT Austin undergraduate research:** Nick Collins (2011), Art Richards (2011), Nicu Stiurca (2011), Adrian Lopez-Mobilia (2011), Francisco Barrera (2011), Bartley Gillan (2007), Mickey Ristroph (2007), Srinivas Ashok (2007), David Li (2007), David Reaves (2007), Thomas Nelson (2006–07), Augustine Mathew (2006–07), Ben Bradley (2004), Aashish Parekh (2004), Prashanth Govindarajan (2003), Bharat Kejriwal (2003), Justin Lallinger (2003), Ali Niaz (2003).
- **AT&T Labs – Research summer intern:** Paul Reitsma (2001).
- **CMU undergraduate research** (informal): Patrick Riley (1998–1999), Michael Bowling (1996).

PROFESSIONAL ACTIVITIES

- **Major event coordination**:
  – **Video Track Chair**, IJCAI, July 2011.
  – **General co-chair**, Autonomous Agents and Multi-Agent Systems (AAMAS), May 2011.
  – **Tutorial co-chair**, AAAI, July 2008.
  – **Program co-chair**, Autonomous Agents and Multi-Agent Systems (AAMAS), May 2006.
  – **Workshop co-chair**, AAAI, July 2005.
  – **Chair**, RoboCup US Open simulation league committee, May 2005, April 2004.
  – **Tutorial chair**, IJCAI, August 2003.
  – **Entry coordinator**, Trading Agent Competition, October 2001.
  – **Associate chair** in charge of simulation events for RoboCup-2001, August 2001.
  – **Co-chair**, RoboCup simulator competition organizing committee, August 1997 – August 1999.
- **Workshop/Symposium coordination**:
  – **Program Co-chair**, Humanoids Workshop on *Humanoid Soccer Robots*, December 2010.
  – **Co-chair**, AAAI workshop on *Multiagent Learning*, July 2005.
  – **Co-chair**, ICML Workshop on *Physiological Data Mining Contest*, July 2004.
  – **Chair**, Information Science and Technology (ISAT) study on
    Distributed Cognitive Systems Focused on Team/Multiagent Learning, May 2005, June 2004.
  – **Co-chair**, IJCAI workshop on *Trading Agent Design and Analysis*, August 2003.
  – **Co-chair**, AAAI Fall Symposium on *Personalized Agents*, November 2002.
  – **Co-chair**, AAAI Spring Symposium on *Collaborative Learning Agents*, March 2002.
  – **Co-chair**, Agents Workshop on *Learning Agents*, May 2001.
  – **Co-chair**, RoboCup Workshop, August 2000.
  – **Co-chair**, Agents Workshop on *Learning Agents*, May 2000.
- **Editor-in-chief**, *J. of Autonomous Agents and Multi-Agent Systems* (JAAMAS), 2010–present.
- **Associate editor**:
  – *International Conference on Robotics and Automation* (ICRA), May 2011.
  – *Artificial Intelligence Journal* (AIJ), January 2007 – December 2014.
  – *J. of Autonomous Agents and Multi-Agent Systems* (JAAMAS), April 2003 – December 2009
  – *ACM Transactions on Internet Technology* (TOIT), January 2003 – December 2005.
  – *International Journal of Image and Graphics* (IJIG), November 2002 – March 2006.

- **Assistant editor**:
  - *ACM SIGecom Exchanges*, January 2004 – December 2005.
- **Editorial board**:
  - Springer Verlag's *Encyclopedia of Machine Learning*, October 2005 – 2010.
  - *Machine Learning Journal* (MLJ), May 2003 – December 2011.
  - *Journal of Artificial Intelligence Research* (JAIR), February 2002 – February 2005.
- **Organizing committee member**:
  - IJCAI Workshop on *General Game Playing*, July 2009.
  - 2nd *Reinforcement Learning Competition*, March 2008.
  - ICAPS Workshop on *AI Planning and Learning*, September 2007.
  - NIPS Workshop on *The Inaugural Reinforcement Learning Competition*, December 2006.
  - AAAI Fall Symposium on *Real Life Reinforcement Learning*, November 2004.
  - AAMAS Workshop on *Learning and Evolution in Agent Based Systems*, July 2004.
- **Trustee**, RoboCup Federation, July 2003 – present.
- **Executive committee member**, RoboCup Federation, August 1999 – present.
- **Panelist**, SxSW Interactive, Austin, TX on *AI 2010: Wall-e Or Rise Of The Machines?* March 2010.
- **Awards Committee**, IJCAI, August 2010–2015.
- **Advisory Committee**, IJCAI, July 2009.
- **Senior Steering Committee**, 2008 AAAI workshop on *Transfer Learning for Complex Tasks*.
- **Steering committee**:
  - Adaptive and Learning Agents Workshop (ALA), 2008–present.
  - 2007 Pacific Rim Trading Agent Competition.
  - IPTO Cognitive Systems Conference, 2005–2006.
- **Councilor**, Association for the Advancement of Artificial Intelligence (AAAI), July 2005–2008.
- **Board of directors**, Association for Trading Agent Research, August 2003–2009.
- **Guest editor**, ACM SIGecom Exchanges special issue on Trading Agent Design and Analysis, Winter 2004.
- **Consultant**, Information Science and Technology (ISAT) Summer Study on *Automated Intent Recognition on Distributed Organizations* (AIRDO), August 2003.
- **Co-editor**, IEEE Intelligent Systems special issue on "Agents and Markets," November 2003.
- **Advisory board**, Springer-Verlag book on *Balancing Reactivity and Social Deliberation in MAS*, September 2000 – January 2001.
- **Advisor**, National Academy of Engineering DARPA Prize Authority Workshop, December 2000.
- **Book reviewer**:
  - Synthesis Lecture Series, 2011.
  - Cambridge University Press, 2010.
  - John Wiley & Sons, 2007, 2006.
  - Morgan Kaufmann, 2001.
- **Journal article reviewer**:
  - *Adaptive Behavior*, 2006.
  - *Advanced Robotics Journal*, 1999.
  - *ACM Transactions on Intelligent Systems and Technology* (TIST), 2010
  - *AI Communication* (AICOM), 2005.
  - *AI Magazine*, 2010.
  - *Artificial Intelligence* (AIJ), 2006, 2005, 2002.
  - *Autonomous Agents and Multi-Agent Systems* (JAAMAS), 2002 – 2007, 2000.
  - *Autonomous Robots*, 1999.
  - *Communications of the ACM* (CACM), 2010, 2009.
  - *Computational Intelligence*, 2003.
  - *Data Mining and Knowledge Discovery* (DMKD) 2007.
  - *Decision Support Systems* (DSS), 2007, 2006, 2004, 2003.
  - *Electronic Commerce* (EC)
  - *Electronic Communication of the EASST* (ECEASST)
  - *Electronic Markets* (EM), 2002.
  - *IEEE Internet Computing*, 2006.

- *IEEE Transactions on Intelligent Transportation Systems*, 2010.
- *IEEE Transactions on Knowledge and Data Engineering* (IEEE TKDE), 2002, 1999.
- *IEEE Transactions on Robotics* (IEEE TRO), 2004 – 2007.
- *IEEE Transactions on Robotics and Automation* (IEEE TRA), 2002, 2001.
- *INFORMS Journal on Computing*, 2006.
- *Journal of Artificial Intelligence Research* (JAIR), 2000 – 2005.
- *Journal of Behavioral Robotics*, 2009.
- *Journal of Intelligent Traffic Systems* (JITS), 2010.
- *Journal of Machine Learning Research* (JMLR), 2009, 2005, 2003.
- *Knowledge and Information Systems* (KAIS), 2002, 2000.
- *Knowledge Engineering Review*, 2003.
- *Machine Learning Journal* (MLJ), 2005–2010, 2003.
- *Neural Networks* (NN), 2008, 2007.
- *Robotics and Autonomous Systems* (RAS), 2007, 2003.
- *Systems, Man and Cybernetics* (SMC), 2005.
- *Transportation Research Part C* (TRC), 2010.
- *Wiley Interdisciplinary Reviews: Cognitive Science*, 2009.

- **Area chair**:
  - International Joint Conference on Artificial Intelligence (IJCAI), July 2009.
  - European Conference on Machine Learning (ECML), October 2005.
  - International Conference on Machine Learning (ICML), August 2003.

- **Senior program committee member**:
  - Autonomous Agents and Multiagent Systems (AAMAS), May 2007, July 2004, July 2003.
  - International Joint Conference on Artificial Intelligence (IJCAI), January 2007.
  - International Conference on Machine Learning (ICML), June 2006.
  - National Conference on Artificial Intelligence (AAAI), July 2004, July 2002.

- **Conference program committee member**:
  - Nat'l Conf. on Artificial Intelligence (AAAI), July 2010, July 2007 (II Track), July 2000.
  - International Conference on Machine Learning (ICML), June 2010, June 2008, June 2000.
  - Autonomous Agents and Multiagent Systems (AAMAS), May 2008
  - Int'l Conf. on Automated Planning and Scheduling. (ICAPS), September 2007, June 2003.
  - Robotics: Science and Systems (RSS), August 2006.
  - International Joint Conference on Artificial Intelligence (IJCAI), August 2005, 2003, 2001.
  - International Conference on Autonomic Computing (ICAC), June 2005, May 2004.
  - ACM Conference on Electionic Commerce (EC), May 2005.
  - Neural Information Processing Systems (NIPS), December 2003, December 2002.
  - European Conference on Machine Learning (ECML), Sept. 2003, August 2002, Sept. 2001.
  - Autonomous Intelligent Networks and Systems Conference (AINS), June 2003.
  - Distributed Autonomous Robotic Systems (DARS), June 2002, October 2000.
  - Intelligent Autonomous Systems (IAS), March 2002.
  - International Conference on Artificial Intelligence (IC-AI), June 2001
  - Autonomous Agents (AA), May 2001, May 2000.
  - International Conference on Multi-Agent Systems (ICMAS), July 2000.
  - International Conference on Enterprise Information Systems (ICEIS), July 2000.

- **Conference paper reviewer**
  - Neural Information Processing Systems (NIPS), December 2011.
  - Autonomous Agents and Multiagent Systems (AAMAS), May 2010.
  - IEEE International Conference on Robotics and Automation (ICRA), May 2010, May 2009, May 2008, April 2005.
  - IEEE Conference on Intelligent Transportation Systems (ITSC), October 2009.

- **Workshop/symposium program committee member**:
  - AAAI *Doctoral Consortium*, August 2011.
  - IEEE International Symposium on *Robot and Human Interaction Communciation* (Ro-Man) — associate editor, July 2011.
  - IJCAI workshop on *Trading Agent Design and Analysis* (TADA), July 2011.

- ECAI workshop on *Benchmarking Intelligent (Multi-)Robot Systems* (BIMRS), August 2010.
- AAAI *AI video competition*, July 2010.
- AAMAS 2010 workshop on *Agents in Real-Time and Dynamic Environments*, May 2010.
- IJCAI *AI video competition*, July 2009.
- AAAI workshop on *Trading Agent Design and Analysis* (TADA), July 2008.
- ECAI workshop on *Cognitive Robotics*, July 2008.
- AAMAS workshop on *Formal Models and Methods for Multi-Robot Systems*, May 2008.
- ICAPS workshop on *AI Planning and Learning* (AIPL), September 2007.
- ICAC workshop on *Adaptive Methods in Autonomic Computing* (AMACS), June 2007.
- Second workshop on *Tackling Computer Systems Problems with Machine Learning Techniques* (SysML), January 2007.
- ICML workshop on *Structural Knowledge Transfer for Machine Learning*, June 2006.
- 3rd International IEEE Latin American Robotic Symposium (LARS), October 2006.
- AAMAS workshop on *Agent Mediated Electronic Commerce* (AMEC/TADA), May 2006.
- IJCAI workshop on *Planning and Learning in A Priori Unknown or Dynamic Domains*
- IJCAI workshop on *Trading Agent Design and Analysis* (TADA), August 2005.
- IJCAI workshop on *Agents in Real-Time and Dynamic Environments*, August 2005.
- AAMAS workshop on *Learning and Adaptation in MAS* (LAMAS), July 2005.
- AAMAS workshop on *Teaching Multiagent Systems* (TeachMAS), July 2005.
- AAMAS workshop on *Trading Agent Design and Analysis* (TADA), July 2004.
- ICML workshop on *Predictive Representations of World State*, July 2004.
- RoboCup Symposium, June 2010, July 2005, July 2004, July 2003, June 2002, August 2001.
- IJCAI Workshop on *Agents in Dynamic Real-Time Environments*, August 2003.
- AAMAS Workshop on *Resource, Role, and Task Allocation in MAS*, July 2003.
- Pacific Rim MultiAgent Workshop (PRIMA), August 2002, July 2001, August 2000.
- AAMAS Workshop on *Coalitions and Team Formation*, July 2002.
- AAMAS Workshop on *MAS Problem Spaces and Their Implications to Achieving Globally Coherent Behavior Coalitions and Team Formation*, July 2002.
- *Agents, Theories, Architectures, and Languages* (ATAL), August 2001.
- Agents Workshop on *Infrastructure for Agents, Multi-Agent Systems, and Scalable Multi-Agent Systems*, May 2001.
- ECAI Workshop on *Balancing Reactivity and Social Deliberation in Multi-Agent Systems*, August 2000.
- ICMAS *Collective Robotics* Workshop, July 1998.
- IROS Workshop on *RoboCup*, November 1996.

- **Project reviewer:**
  - Science Foundation of Ireland (SFI) "Integrated Analysis of System of Systems," 2009.
  - European Commission (EC) "Ubiquitous Networking Robotics in Urban Settings," 2008, 2009.
  - UK EPSRC "Market-Based Control of Complex Computational Systems," 2008.

- **Proposal reviewer:**
  - Army Research Office (ARO) 2011.
  - Instituto de Telecomunicações (IT), Portugal, 2011.
  - National Science Foundation (NSF), 2011, 2010, 2009, 2008, 2004, 2003, 2002, 1999.
  - US-Israel Binational Science Foundation (BSF), 2007, 2003, 2000.
  - Microsoft Scholarship, 2007.
  - French Agence Nationale de la Recherche (ANR), 2006.
  - City University of New York internal research award program, 2006.
  - Research Council of Norway, 2003.
  - Israel Science Foundation (ISF), 2010, 2004, 2002.
  - Alberta Circle of Research Excellence (iCORE), 2000.

- **Departmental and university service:**
  - Mechanical Engineering recruiting committee for "Intelligent Physical Systems," 2011.
  - Selection committee for the University Best Dissertation award, 2011.
  - Chair, Special Events committee, 2010–11 2009–10, 2004–05.
  - Doctoral Admissions committee, 2009–10, 2007–08.

- Blunk Memorial Professorship award committee, 2010, 2009.
- AI lab steering committee, 2004–present.
- Graduate Studies Committee (GSC) of UT Austin ECE department, 2008–present.
- Turing Scholars committee, 2008.
- Faculty Recruiting committee, 2006–07.
- Ad hoc committee on the new WLC policy, 2006.
- Ad hoc Japan Prize committee, 2006.
- Doctoral Admissions committee, 2005–06.
- Ad hoc GSC committee on diversity proposals, 2005.
- Chair, Special Events committee, 2004–05.
- Evaluation of Graduate Programs committee, 2004–05.
- Faculty evaluation committee, 2003–04.
- Departmental Best Dissertation committee, 2003.

INVITED DISTINGUISHED LECTURES

- "Learning and Multiagent Reasoning for Autonomous Agents."
  UC Irvine Computer Science Department Distinguished Lecturer
  in Irvine, California. October 2009.
- "Teaching Teammates in Ad Hoc Teams."
  Keynote talk at 10th Bar-Ilan Symposium on the Foundations of Artificial Intelligence (BISFAI)
  in Ramat-Gan, Israel. June 2009.
- "Learning and Multiagent Reasoning for Autonomous Agents."
  Keynote talk at 4th IEEE Latin Amerinca Robotic Symposium (LARS) in Monterrey Mexico.
  November 2007.
- "Learning and Multiagent Reasoning for Autonomous Agents."
  UT Austin Visions of Computing Lecture in Austin, Texas. November 2007.
- "Learning and Multiagent Reasoning for Autonomous Agents."
  IJCAI Computers and Thought Award Lecture in Hyderabad, India. January 2007.
- "Robot Learning."
  National Academy of Sciences spring symposium in Washington, DC. April 2006.
- "Machine Learning on Physical Robots."
  Keynote talk at International Conference on Computing (CIC) in Mexico City. October 2004.
- "The Trading Agent Competition: Two Champion Adaptive Bidding Agents."
  Computer Games Conference in Edmonton, Alberta. July, 2002.

INVITED TALKS

- "Intersections of the Future: Using Fully Autonomous Vehicles"
  AAMAS 2011 Workshop on Agents and Data Mining Interaction in Taipei, Taiwan. May 2011.
- "Human-Assisted Reinforcement Learning"
  ONR Science of Autonomy Meeting in Arlington, VA. April 2011.
- "Machine Learning and Multiagent Reasoning: from robot soccer to autonomous traffic"
  Texas State Computer Science Department Seminar in San Marcos, TX. March 2011.
- "Machine Learning and Multiagent Reasoning: from robot soccer to autonomous traffic"
  Virginia Tech Computer Science Department Seminar in Blacksburg, VA. March 2011.
- "Machine Learning and Multiagent Reasoning: from robot soccer to autonomous traffic"
  Baylor Physics Department Seminar in Waco, TX. December 2010.
- "Machine Learning and Multiagent Reasoning: From Robot Soccer to Autonomous Traffic'
  Johns Hopkins Computer Science Seminar in Baltimore, MD. November 2010.
- "Autonomous Robots Playing Soccer and Traversing Intersections"
  Hot Science - Cool Talks Outreach Lecture Series in Austin, Texas. October 2010.
- "Learning and Multiagent Reasoning for Autonomous Agents"
  Blue Knot Austin in Austin, Texas. July 2010.
- "Intersections of the Future: Using Fully Autonomous Vehicles"
  Taiwan Agent Summer School in Hsinchu, Taiwan. June 2010.

- "Learning and Multiagent Reasoning for Autonomous Agents"
  Taiwan Agent Summer School in Hsinchu, Taiwan. June 2010.
- "Machine Learning on Physical Robots"
  Seminar in **Mechanical Engineering Department**, UT Austin. April 2010.
- "Autonomous Robots Playing Soccer and Traversing Intersections"
  TEDxUT in Austin, Texas. April 2010.
- "Learning and Multiagent Reasoning for Autonomous Agents"
  National Instruments in Austin, Texas. January 2010.
- "Intersections of the Future: Using Fully Autonomous Vehicles"
  IEEE Latin-American Summer School on Robotics in Santiago, Chile. December 2009.
- "Learning and Multiagent Reasoning for Autonomous Agents"
  IEEE Latin-American Summer School on Robotics in Santiago, Chile. December 2009.
- "Intersections of the Future: Using Fully Autonomous Vehicles"
  Robotics Seminar at **University Polytecnica de Catalonya** in Barcelona, Spain. November 2009.
- "Teaching Teammates in Ad Hoc Teams"
  UT Department of Computer Sciences Forum for AI and UTCS Colloquium in Austin, Texas.
  September 2009.
- "Learning and Multiagent Reasoning for Autonomous Agents."
  Technion CS Department Pixel Club lecture in Haifa, Israel. June 2009.
- "How Machines Learn: From Robot Soccer to Autonomous Traffic"
  HEMDA Center for Science Education in Tel Aviv, Israel. June 2009.
- "Teaching Teammates in Ad Hoc Teams."
  Game theory seminar at **Hebrew University Center for Rationality** in Jerusalem, Israel. May 2009.
- "Teaching Teammates in Ad Hoc Teams."
  AAMAS 2009 workshop on Adaptive Learning Agents in Budapest, Hungary. May 2009.
- "Generalization in Reinforcement Learning."
  Hebrew University Machine Learning Club Talk in Jerusalem, Israel. April 2009. 4/23/09
- "Machine Learning on Physical Robots."
  Hebrew University CS Coloquium in Jerusalem, Israel. April 2009.
- "Generalization in Reinforcement Learning."
  Technion EE Guest Lecture in Haifa, Israel, March 2009.
- "Machine Learning on Physical Robots."
  Haifa Mini-Workshop on Machine Learning: Theory and Practice in Haifa, Israel. March 2009.
- "Learning and Multiagent Reasoning for Autonomous Agents."
  Ben Gurion University in Beér Sheva, Israel. February 2009.
- "Learning and Multiagent Reasoning for Autonomous Agents."
  IBM Haifa Research Lab in Haifa, Israel. December 2009.
- "Learning and Multiagent Reasoning for Autonomous Agents."
  The Israel Association for Artificial Intelligence Symposium in Ashkelon, Israel. November 2008.
- "Learning and Multiagent Reasoning for Autonomous Agents."
  International Workshop on Market-Based Control of Complex Computational Systems
  in Liverpool, UK. September 2008.
- "Learning and Multiagent Reasoning for Autonomous Agents."
  University of Alberta AI Seminar in Edmonton, Alberta. March 2007.
- "Learning and Multiagent Reasoning for Autonomous Agents."
  University of Southern Alabama in Mobile, Alabama. February 2007.
- "Embracing Mobility."
  DARPA kickoff meeting on Information Theory for Mobile Ad-Hoc Networks in Chicago, IL.
  November 2006.
- "Layered Learning on Physical Robots."
  University of Amsterdam in Amsterdam, The Netherlands. November 2006.
- "Robust Autonomous Color Learning on a Mobile Robot."
  Robotics Institute Seminar Series, **Carnegie Mellon University** in Pittsburgh, PA. October 2006.
- "Robust Autonomous Color Learning on a Mobile Robot."
  Center for Perceptual Systems Seminar Series, UT Austin. October 2006.

- "Machine Learning and Multiagent Systems: From robot soccer to autonomous traffic."
  Lockheed Martin Aeronautics, Fort Worth, TX. October 2006.
- "Machine Learning and Multiagent Systems: From robot soccer to autonomous traffic."
  IEEE MetroCon, Arlington, TX. October 2006.
- "RoboCup: The Robot Soccer World Cup."
  Department of Kinesiology and Health Education, UT Austin. September 2006.
- "State Abstraction Discovery, and Layered Learning on Physical Robots."
  AAMAS workshop on Hierarchical Autonomous Agents and Multiagent Systems in Hakodate, Japan. May 2006.
- "Machine Learning on Physical Robots."
  GRASP seminar series at **University of Pennsylvania**. March 2006.
- "Robot Learning."
  National Academy of Sciences Frontiers of Science Symposium in Irvine, CA. October 2005.
- "Reinforcement Learning for GGP."
  DARPA kickoff meeting on Transfer Learning, Palo Alto, CA. October 2005.
- "Behavior Transfer for Value-Function-Based Reinforcement Learning."
  Cognition & Perception Seminar Series, **Psychology Department**, UT Austin. September 2005.
- "Machine Learning and Multiagent Systems: From robot soccer to autonomic computing."
  IBM Technical Vitality Council in Austin, TX. September 2005.
- "The Trading Agent Competition: Two Champion Adaptive Bidding Agents."
  Intelligent Systems Seminar Series, **McCombs School of Business**, UT Austin. September 2005.
- "Practical Vision-Based Monte Carlo Localization on a Legged Robot."
  IJCAI Workshop on Reasoning with Uncertainty in Robotics in Edinburgh, Scotland. July 2005.
- "RoboCup as an Introduction to Multiagent Systems and Research."
  AAMAS Workshop on Teaching Multiagent Systems in Utrecht, Netherlands. July 2005.
- "Multi-Robot Learning for Continuous Area Sweeping."
  AAMAS Workshop on Learning and Adaptation in Multiagent Systems in Utrecht, Netherlands. July 2005.
- "Speeding up Reinforcement Learning with Behavior Transfer."
  RoboCup US Open in Atlanta, GA. May 2005.
- "Scaling Up Reinforcement Learning via Task Transfer."
  DARPA bidder's conference on Transfer Learning in Washington, DC. March 2005.
- "Machine Learning on Physical Robots."
  Bar Ilan University in Ramat Gan, Israel. December 2004.
- "Adversarial Agents and Other Agent Topics."
  Air Force Research Lab in Rome, New York. July 2004.
- "Embodied Agents."
  Americas' School on Agents and Multiagent Systems in New York, New York. July 2004.
- "Coaching, Advising, and Task Transfer for Multiagent Learning."
  Information Science and Technology (ISAT) study on Multiagent/Distributed Learning in Boston, Massachusetts. June 2004.
- "Robot soccer: competitions and research."
  National Instruments Scholarship for Excellence reception in Austin, Texas. June 2004.
- "The RoboCup Challenge: Progress and Research Results in Robot Soccer."
  UT Mechanical Engineering Dept. Robotics Research Group in Austin, Texas. May 2004.
- "The RoboCup Challenge: Progress and Research Results in Robot Soccer."
  UT Department of Computer Sciences Forum for AI in Austin, Texas. November 2003.
- "Policy Gradient Reinforcement Learning for Fast Quadrupedal Locomotion."
  DARPA PI Meeting on Navigation, Locomotion, and Articulation in Washington, DC. Nov. 2003.
- "Autonomous Learning Agents in Dynamic, Multiagent Environments."
  IROS-2003 Workshop on Learning and Evolution in MAS in Las Vegas, Nevada. October, 2003.
- "The RoboCup Challenge: Progress and Research Results in Robot Soccer."
  University of Science and Technology China (USTC) in Hefei, China. October, 2003.
- "Layered Learning towards Autonomic Computing."
  IJCAI-2003 Workshop on AI and Autonomic Computing in Acapulco, Mexico. August 2003.

- "Autonomous Bidding Agents and the Power of Threats." (with Michael Littman)
  CMU Machine Learning Lunch Seminar in Pittsburgh, Pennsylvania. April 2003.
- "Machine Learning Research in the RoboCup Simulation League."
  First RoboCup American Open Workshop in Pittsburgh, Pennsylvania. April 2003.
- "Autonomous Learning Agents in Dynamic, Multiagent Environments."
  UT College of Natural Sciences Advisory Council Meeting in Austin, Texas. April 2003.
- "Scaling Reinforcement Learning toward RoboCup Soccer."
  NIPS 2002 workshop on Multi-Agent Learning in Whistler, British Columbia. December 2002.
- "Autonomous Learning Agents in Dynamic, Multiagent Environments."
  University of Texas School of Library and Information Science in Austin, Texas. September 2002.
- "The Trading Agent Competition: Two Champion Adaptive Bidding Agents."
  UT Department of Computer Sciences Forum for AI in Austin, Texas. September 2002.
- "Multiagent Competitions and Research: Lessons from RoboCup and TAC."
  Trading Agent Competition Workshop in Edmonton, Alberta. July, 2002.
- "Autonomous Learning Agents in Dynamic, Multiagent Environments: Auctions and Soccer."
  Santa Fe Institute Collective Cognition Workshop in Santa Fe, New Mexico. January 2002.
- "Autonomous Learning Agents in Dynamic, Multiagent Environments: Auctions and Soccer."
  University of Alberta AI Seminar in Edmonton, Alberta. November 2001.
- "Autonomous Bidding Agents."
  Brookings Institution Workshop on Multi-Agent Computation in Natural and Artificial Economies in Washington, DC. October 2001.
- "Layered Learning in Multi-Agent Systems: A Winning Approach to Robotic Soccer."
  IEEE Computer Society and DigiPen Institute of Technology in Seattle, Washington. July 2001.
- "Layered Learning in Multi-Agent Systems: A Winning Approach to Robotic Soccer."
  The Boeing Company in Seattle, Washington. July 2001.
- "Layered Learning in Multi-Agent Systems."
  Multi-Strategy Learning Workshop in Guimarães, Portugal. June 2000.
- "The RoboCup Challenge."
  NASA Goddard Space Flight Center in Greenbelt, Maryland. March 2000.
- "The RoboCup Challenge."
  Ohio University in Athens, Ohio. February 2000.
- "The RoboCup Challenge."
  IEEE Real-Time Systems Symposium in Phoenix, Arizona. December, 1999.
- "Layered Learning in Multi-Agent Systems."
  Machines That Learn Workshop in Snowbird, Utah. April 1998.
- "Layered Learning in Multi-Agent Systems."
  SRI International in Palo Alto, California. November 1997.
- "Layered Learning in Multi-Agent Systems."
  University of Washington in Seattle, Washington. November 1997.
- "Task Decomposition and Dynamic Role Assignment for Real-Time Strategic Teamwork."
  Electrotechnical Laboratory (ETL) in Tsukuba, Japan. August 1997.
- "Machine Learning for Agent Control in Real-time Multi-Agent Domains."
  Workshop on Intelligent Robotic Agents in Porto Alegre, Brazil. March 1997.
- "Layered Learning in the Soccer Server."
  Electrotechnical Laboratory (ETL) in Tsukuba, Japan. November 1996.
- "Layered Learning in the RoboCup Soccer Server."
  Osaka University in Osaka, Japan. November 1996.
- "Building a Dedicated Robotic Soccer System."
  Korean Advanced Institute of Science and Technology (KAIST) in Taejon, Korea. August 1996.
- "Towards Collaborative and Adversarial Learning: A Case Study in Robotic Soccer."
  Naval Research Labs (NRL) in Washington DC. July 1996.
- "FLECS: Planning with a Flexible Commitment Strategy."
  Jet Propulsion Laboratory (JPL) in Pasadena, California. July 1995.
- "FLECS: Planning with a Flexible Commitment Strategy."
  USC Intelligent Software Institute (ISI) in Marina Del Rey, California. July 1995.

PUBLICATIONS

All listed publications are available and cross-listed by *type*, *date*, *topic*, and *co-author* at
http://www.cs.utexas.edu/users/pstone/papers.html

Books

1. Kagan Tumer, Pinar Yolum, Liz Sonenberg, and **Peter Stone**, editors. *Proceedings of the Tenth International Conference on Autonomous Agents and Multiagent Systems*. International Foundation for Autonomous Agents and Multiagent Systems (IFAAMAS), May 2011.

2. Michael P. Wellman, Amy Greenwald, and **Peter Stone**. *Autonomous Bidding Agents: Strategies and Lessons from the Trading Agent Competition*. MIT Press, 2007. (monograph)

3. **Peter Stone**. *Intelligent Autonomous Robotics: A Robot Soccer Case Study*. Synthesis Lectures on Artificial Intelligence and Machine Learning. Morgan & Claypool Publishers, 2007. (monograph)

4. **Peter Stone** and Gerhard Weiss, editors. *Proceedings of the Fifth International Joint Conference on Autonomous Agents and Multiagent Systems*. Association for Computing Machinery (ACM), May 2006.

5. **Peter Stone**, Tucker Balch, and Gerhard Kraetzschmar, editors. *RoboCup-2000: Robot Soccer World Cup IV*. volume 2019 of Lecture Notes in Artificial Intelligence. Springer Verlag, Berlin, 2001.

6. **Peter Stone**. *Layered Learning in Multiagent Systems: A Winning Approach to Robotic Soccer*. MIT Press, 2000. (monograph)

Journal Articles

7. Shivaram Kalyanakrishnan and **Peter Stone**. Characterizing reinforcement learning methods through parameterized learning problems. *Machine Learning (MLJ)*, 2011. To appear.

8. David Fajardo, Tsz-Chiu Au, Travis Waller, **Peter Stone**, and David Yang. Automated intersection control: Performance of a future innovation versus current traffic signal control. *Transportation Research Record (TRR)*, 2011. To appear.

9. Tobias Jung, Daniel Polani, and **Peter Stone**. Empowerment for continuous agent-environment systems. *Adaptive Behavior*, 19(1):16–39, 2011.

10. David Pardoe, **Peter Stone**, Maytal Saar-Tsechansky, Tayfun Keskin, and Kerem Tomak. Adaptive auction mechanism design and the incorporation of prior knowledge. *INFORMS Journal on Computing*, 22(3):353–370, Summer 2010.

11. Jonathan Wildstrom, **Peter Stone**, and Emmett Witchel. Autonomous return on investment analysis of additional processing resources. *International Journal on Autonomic Computing*, 1(3), 2010.

12. Matthew E. Taylor and **Peter Stone**. Transfer learning for reinforcement learning domains: A survey. *Journal of Machine Learning Research*, 10(1):1633–1685, 2009.

13. Shimon Whiteson, Matthew E. Taylor, and **Peter Stone**. Critical factors in the empirical performance of temporal difference and evolutionary methods for reinforcement learning. *Journal of Autonomous Agents and Multi-Agent Systems*, 21(1):1–27, 2010.

14. Mohan Sridharan and **Peter Stone**. Color learning and illumination invariance on mobile robots: A survey. *Robotics and Autonomous Systems (RAS) Journal*, 57(6-7):629–44, June 2009.

15. Juhyun Lee, W. Bradley Knox, and **Peter Stone**. Inter-classifier feedback for human-robot interaction in a domestic setting. *Journal of Physical Agents*, 2(2):41–50, July 2008. Special Issue on Human Interaction with Domestic Robots.

16. Patrick Beeson, Jack O'Quin, Bartley Gillan, Tarun Nimmagadda, Mickey Ristroph, David Li, and **Peter Stone**. Multiagent interactions in urban driving. *Journal of Physical Agents*, 2(1):15–30, March 2008. Special issue on Multi-Robot Systems.

17. Kurt Dresner and **Peter Stone**. A multiagent approach to autonomous intersection management. *Journal of Artificial Intelligence Research*, 31:591–656, March 2008.

18. Daniel Stronger and **Peter Stone**. Polynomial regression with automated degree: A function approximator for autonomous agents. *International Journal on Artificial Intelligence Tools*, 17(1):159–174, 2008.
    Based on earlier version in *The 18th IEEE International Conference on Tools with Artificial Intelligence*, November 2006. **Nominee for Best Paper Award.**

19. Matthew E. Taylor, **Peter Stone**, and Yaxin Liu. Transfer learning via inter-task mappings for temporal difference learning. *Journal of Machine Learning Research*, 8(1):2125–2167, 2007.

20. Mohan Sridharan and **Peter Stone**. Planning actions to enable color learning on a mobile robot. *International Journal of Information and Systems Sciences*, 3(3):510–25, 2007.

21. Mohan Sridharan and **Peter Stone**. Structure-Based Color Learning on a Mobile Robot under Changing Illumination. *Autonomous Robots*, 23(3):161–182, 2007.

22. **Peter Stone**. Multiagent learning is not the answer. it is the question. *Artificial Intelligence*, 171:402–405, 2007.

23. Shimon Whiteson, Matthew E. Taylor, and **Peter Stone**. Empirical studies in action selection for reinforcement learning. *Adaptive Behavior*, 15(1):33–50, 2007.

24. **Peter Stone**, Mohan Sridharan, Daniel Stronger, Gregory Kuhlmann, Nate Kohl, Peggy Fidelman, and Nicholas K. Jong. From pixels to multi-robot decision-making: A study in uncertainty. *Robotics and Autonomous Systems* (RAS), 54(11):933–43, November 2006. Special issue on Planning Under Uncertainty in Robotics.

25. Daniel Stronger and **Peter Stone**. Towards autonomous sensor and actuator model induction on a mobile robot. *Connection Science Journal* (CSJ), 18(2):97–119, June 2006. Special Issue on Developmental Robotics.
    Based on "Simultaneous calibration of action and sensor models on a mobile robot." In *IEEE International Conference on Robotics and Automation* (ICRA), April 2005.

26. Shimon Whiteson and **Peter Stone**. Evolutionary Function Approximation for Reinforcement Learning. *Journal of Machine Learning Research* (JMLR), 7:877–917, May 2006.

27. Charles Lee Isbell Jr., Michael Kearns, Dave Kormann, Satinder Singh, and **Peter Stone**. Cobot in LambdaMOO: an adaptive social statistics agent. *Journal of Autonomous Agents and Multi-Agent Systems* (JAAMAS), 13(3):327–354, November, 2006.
    Based on "Cobot in LambdaMOO: A social statistics agent." In *Proceedings of the Seventeenth National Conference on Artificial Intelligence* (AAAI), pages 36–41, 2001.

28. **Peter Stone**, Richard S. Sutton, and Gregory Kuhlmann. Reinforcement learning for RoboCup-soccer keepaway. *Adaptive Behavior* (AB), 13(2):165–188, 2005.
    Based on "Scaling reinforcement learning toward RoboCup soccer." In *Proceedings of the Eighteenth International Conference on Machine Learning* (ICML), 2001.

29. Shimon Whiteson, Nate Kohl, Risto Miikkulainen, and **Peter Stone**. Evolving keepaway soccer players through task decomposition. *Machine Learning* (MLJ), 59(1):5–30, May 2005.
    Based on earlier version in *Proceedings of the Genetic and Evolutionary Computation Conference* (GECCO), July 2003.

30. Michael Littman and **Peter Stone**. A Polynomial-time Nash Equilibrium Algorithm for Repeated Games. *Decision Support Systems* (DSS), 39:55–66, 2005.
Based on earlier version in *Proceedings of the fourth annual ACM Conference on Electronic Commerce* (EC), June 2003.

31. **Peter Stone** and Amy Greenwald. The first international trading agent competition: Autonomous bidding agents. *Electronic Commerce Research* (EC), 5(2):229–65, April 2005.

32. Shimon Whiteson and **Peter Stone**. Towards autonomic computing: Adaptive job routing and scheduling. *Engineering Applications of Artificial Intelligence special issue on Autonomic Computing and Automation* (EAAI), 17(7):855–69, October 2004.
Based on earlier version in *Proceedings of the Sixteenth Innovative Applications of AI Conference* (IAAI), San Jose, CA, July 2004.

33. Elizabeth Sklar, Simon Parsons, and **Peter Stone**. Using RoboCup in university-level computer science education. *Journal of Educational Resources in Computing* (JERIC), 4:2, June 2004. Special Issue on Robotics in Undergraduate Education, Part 1.

34. **Peter Stone**, Robert E. Schapire, Michael L. Littman, János A. Csirik, and David McAllester. Decision-theoretic bidding based on learned density models in simultaneous, interacting auctions. *Journal of Artificial Intelligence Research* (JAIR), 19:209–242, September 2003.

35. Itsuki Noda and **Peter Stone**. The RoboCup soccer server and CMUnited clients: Implemented infrastructure for MAS research. *Autonomous Agents and Multi-Agent Systems* (JAAMAS), 7(1–2):101–120, July–September 2003.

36. Michael P. Wellman, Amy Greenwald, **Peter Stone**, and Peter R. Wurman. The 2001 trading agent competition. *Electronic Markets* (EM), 13(1):4–12, May 2003.

37. **Peter Stone**, Michael L. Littman, Satinder Singh, and Michael Kearns. ATTac-2000: An adaptive autonomous bidding agent. *Journal of Artificial Intelligence Research* (JAIR), 15:189–206, June 2001.
Based on earlier version in *Proceedings of the Fifth International Conference on Autonomous Agents*, 2001.

38. **Peter Stone** and Manuela Veloso. Multiagent systems: A survey from a machine learning perspective. *Autonomous Robots*, 8(3):345–383, July 2000.
Also in Tucker Balch and Lynne E. Parker, editors, *Robot Teams: From Diversity to Polymorphism*. AK Peters Ltd, 2002.

39. Michael Bowling, Manuela Veloso, and **Peter Stone**. The CMUnited-98 champion small-robot team. *Advanced Robotics*, 13(8):753–766, 2000.

40. Manuela Veloso, **Peter Stone**, and Kwun Han. The CMUnited-97 robotic soccer team: Perception and multi-agent control. *Robotics and Autonomous Systems* (RAS), 29(2-3):133–143, 2000.
Based on earlier version in *Proceedings of the Second International Conference on Autonomous Agents*, May 1998.

41. **Peter Stone** and Manuela Veloso. Task decomposition, dynamic role assignment, and low-bandwidth communication for real-time strategic teamwork. *Artificial Intelligence* (AIJ), 110(2):241–273, June 1999.

42. **Peter Stone** and Manuela Veloso. A layered approach to learning client behaviors in the RoboCup soccer server. *Applied Artificial Intelligence* (AAI), 12:165–188, 1998.

43. Minoru Asada, Yasuo Kuniyoshi, Alexis Drogoul, Hajime Asama, Maja Mataric, Dominique Duhaut, **Peter Stone**, and Hiroaki Kitano. The RoboCup physical agent challenge: Phase-I. *Applied Artificial Intelligence* (AAI), 12.2:251–263, March 1998.

44. **Peter Stone** and Manuela Veloso. Towards collaborative and adversarial learning: A case study in robotic soccer. *International Journal of Human-Computer Studies* (IJHCS), 48(1):83–104, January 1998.

45. Manuela Veloso and **Peter Stone**. FLECS: Planning with a flexible commitment strategy. *Journal of Artificial Intelligence Research* (JAIR), 3:25–52, June 1995.

Book Chapters

46. Piyush Khandelwal and **Peter Stone**. A low cost ground truth detection system for RoboCup. In T. Roefer, N.M. Mayer, J. Savage, and U. Saranli, editors, *RoboCup-2011: Robot Soccer World Cup XV*, Lecture Notes in Artificial Intelligence. Springer Verlag, 2012. To appear.

47. Todd Hester and **Peter Stone**. The use of models. in Marco Wiering and Martijn van Otterlo, editors, *Reinforcement Learning: State of the Art*, Springer Verlag, 2011.

48. Matthew Hausknecht and **Peter Stone**. Learning powerful kicks on the aibo ers-7: The quest for a striker. In Javier Ruiz-del-Solar, Eric Chown and Paul G. Plöger, editors, *RoboCup-2010: Robot Soccer World Cup XIV*, Lecture Notes in Artificial Intelligence. Springer Verlag, pages 254–65, 2011.

49. **Peter Stone**, Michael Quinlan, and Todd Hester. Can robots play soccer? In Ted Richards, editor, *Soccer and Philosophy: Beautiful Thoughts on the Beautiful Game*, volume 51 of *Popular Culture and Philosophy*, pages 75–88. Open Court Publishing Company, 2010.

50. Itsuki Noda, **Peter Stone**, Tomohisa Yamashita, and Koichi Kurumatani. Multi-Agent Social Simulation. In Nakashima, H., Aghajan, H., & Augusto, J. C., editor, *Handbook of Ambient Intelligence and Smart Environments*, pages 703–729. 2010.

51. **Peter Stone**, Gal A. Kaminka, and Jeffrey S. Rosenschein. Leading a best-response teammate in an ad hoc team. In Esther David, Enrico Gerding, David Sarne, and Onn Shehory, editors, *Agent-Mediated Electronic Commerce: Designing Trading Strategies and Mechanisms for Electronic Markets*, pages 132–146, November 2010.

52. David Pardoe and Peter Stone. The 2007 tac scm prediction challenge. In Wolfgang Ketter, Han La Poutré, Norman Sadeh, Onn Shehory, and William Walsh, editors, *Agent-Mediated Electronic Commerce and Trading Agent Design and Alaysis*, volume 44 of *Lecture Notes in Business Information Processing (LNBIP)*, pages 175–89. 2010.

53. Shivaram Kalyanakrishnan and **Peter Stone**. Learning complementary multiagent behaviors: A case study. In *Proceedings of the RoboCup International Symposium 2009*. Springer Verlag, 2009. **Winner of Best Student Paper Award.**

54. Shivaram Kalyanakrishnan, Todd Hester, Michael Quinlan, Yinon Bentor, and **Peter Stone**. Three humanoid soccer platforms: Comparison and synthesis. In *Proceedings of the RoboCup International Symposium 2009*. Springer Verlag, 2009. To appear.

55. Kurt Dresner, Mark VanMiddlesworth, and **Peter Stone**. An unmanaged intersection protocol and improved intersection safety for autonomous vehicles. In Ana L. C. Bazzan and Franziska Klugl, editors, *Multi-Agent System for Traffic and Traffic Engineering*, pages 193–217. IGI Global, Hershey, PA, 2009.

56. W. Bradley Knox, Juhyun Lee, and **Peter Stone**. Domestic interaction on a segway base. In Luca Iocchi, Hitoshi Matsubara, Alfredo Weitzenfeld, and Changjiu Zhou, editors, *RoboCup-2008: Robot Soccer World Cup XII*, Lecture Notes in Artificial Intelligence. Springer Verlag, Berlin, 2008.

57. David Pardoe and **Peter Stone**. An autonomous agent for supply chain management. In Gedas Adomavicius and Alok Gupta, editors, *Handbooks in Information Systems Series: Business Computing*. Elsevier, 2007.

58. David Pardoe and **Peter Stone**. Adapting price predictions in TAC SCM. In John Collins, Peyman Faratin, Simon Parsons, Juan A. Rodriguez-Aguilar, Norman M. Sadeh, Onn Shehory, and Elizabeth Sklar, editors, *Agent-Mediated Electronic Commerce and Trading Agent Design and Analysis*, volume 13 of *Lecture Notes in Business Information Processing*, pages 30–45. 2009.

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PROFESSIONAL MEMBERSHIPS

- American Association for the Advancement of Science (AAAS)
- Association for Computing Machinery (ACM)
- Association for the Advancement of Artificial Intelligence (AAAI)
- Institute of Electrical and Electronic Engineers (IEEE)

PRESS

Interviewed and quoted regarding research several times on television, on radio, and in magazines and newspapers including the New York Times, Wall Street Journal, USA Today, Pittsburgh Post-Gazette, Scientific American, and Austin American Statesman. Appeared on PBS *Scientific American Frontiers* hosted by Alan Alda.

PERSONAL

Married, three children — born 1998, 2000, 2002.
Citizenship: U.S.

- Violin — performed with the CMU philharmonic in Carnegie Hall, NY.
- Soccer — played in a semi-professional league, tried out for Major League Soccer.
- Languages — English (native), French and Hebrew (conversational).