

Stephen Brawner, PhD, PE

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Academic

- Ph.D, Computer Science. Brown University. Providence, RI** 2018
Advisor: Michael L. Littman
Thesis:
– *Personalization in AI, and its Applications to Robotics*
- Sc.M., Computer Science. Brown University. Providence, RI** 2014
– Robotics, artificial intelligence, natural language processing, machine learning
- B.S., Engineering. Harvey Mudd College. Claremont, CA** 2007
– Microprocessor design, digital/analog electronics and mechanical engineering

Professional

- Software Engineering Intern, iRobot Corporation. Bedford, MA** 2015
– I developed a solution to a common sensor issue facing autonomous driving robots. The contribution helped eliminate the inclusion of other costly and problematic sensors.
– Developed an autonomous behavior to enable telepresence robots to navigate conference rooms and select the most appropriate parking location.
- Software Engineering Intern, Bot & Dolly, Inc. San Francisco, CA** 2013
– Designed and built BD Build, a system of components designed for the Grasshopper plugin in Rhinoceros 5 to manipulate a group of robots, single-axis tracks, tools and other forms of IO
- Software Research Intern, Open Source Robotics Foundation, Inc. Mountain View, CA** 2012-2013
– Researched and built Robust, a markup language and continuous integration framework for robot testing in ROS to facilitate proof-by-reproducibility in research
- Software Engineering Intern, Willow Garage. Menlo Park, CA** 2012
– Developed a SolidWorks add-in to export a complex robot design to a ROS-compatible Unified Robot Description Format (URDF) file
- Consulting Engineer. Los Angeles, CA** 2010-2011
– Designed and built compact device to coordinate still cameras, 3D stereoscopic sliders, grow lights and imaging lights for 3D time lapse video
– Designed and built concussion monitoring system for use in youth football
- Project Engineer. eSolar, Inc. Pasadena, CA** 2008-2010
– Developed heliostat cleaning system to clean 12,000 mirrors nightly with only two operators
– Designed, built and tested a semi-autonomous heliostat cleaning vehicle as key feature of system design to restore mirror cleanliness to 95% with minimal operator intervention
Patent: WO 2010093876 A2, "Heliostat Field Cleaning System", First Inventor

Teaching and Mentoring Experience

- Instructor, Intro to Computation for Humanities and Social Sciences. Brown University 2017
– Graduate Teaching Assistant, Introduction to Artificial Intelligence. Brown University 2014
– Graduate Teaching Assistant, Human Robot Interaction. Brown University 2013
– Machine Shop Proctor. Harvey Mudd College 2005-07
– Undergraduate Tutor/Grader, Introduction to Computer Science. Harvey Mudd College 2005

Awards

- Brown Breakthrough Lab Invited Participant 2018
– Brown Venture Prize Finalist 2018
– ICRA Mobile Manipulation Challenge Participant 2012
– Brown University Fellowship 2010-11
– Patent: WO 2010093876 A2, "Heliostat Field Cleaning System", First Inventor 2010
– NASA Reduced Gravity Student Flight Program 2005-06

Publications and Presentations

- Stephen Brawner, Michael L. Littman. “Personalizing Language Groundings for If-This-Then-That Programs”. *NIPS 2018*, Montreal, Canada. In Review
- David Abel, Edward C. Williams, Stephen Brawner and Michael Littman. “Bandit-Based Solar Panel Control”. *IAAI 2018*, New Orleans, LA.
- Stephen Brawner, Michael L. Littman. “Learning Household Organization via Context-based Collaborative Filtering”. *IntRS@RecSys 2016*, Boston, MA
- Mark K Ho, James MacGlashan, Amy Greenwald, Michael L. Littman, Elizabeth M. Hilliard, Carl Trimbach, Stephen Brawner, Joshua B. Tenenbaum, Max Kleiman-Weiner, Joseph L. Austerweil. “Feature-based Joint Planning and Norm Learning in Collaborative Games”. *CogSci 2016*. Philadelphia, PA
- Blase Ur, Sarah Mennicken, Melwyn Pak Yong Ho, Stephen Brawner, Jiyun Lee, Noah Picard, Diane Schulze, Michael L. Littman. “Trigger-Action Programming in the Wild: An Analysis of 200,000 IFTTT Recipes”. *CHI 2016*. San Jose, CA
- David Abel, Gabriel Barth-Maron, David Hershkowitz, Stephen Brawner, Kevin O’Farrell, James Macglashan and Stefanie Tellex. “Goal-Based Action Priors”. *ICAPS 2015*. Jerusalem, Israel
- Stephen Brawner, Kevin O’Farrell, Lee Painton, Stefanie Tellex, and Michael Littman. “Coplanning via Inverse Reinforcement Learning”. *NERC 2014*. Providence RI
- Stephen Brawner. “Converting SolidWorks Parts and Assemblies to ROS Friendly Files”. *ROSCON 2013*. Stuttgart, Germany.

Programming Languages

Python, C++, Java, C#, Javascript, MATLAB

Open Source Software

- SW2URDF: bitbucket.org/brawner/sw2urdf
- Baxter H2R Packages: github.com/h2r/baxter_h2r_packages
- Collision Map Creator: bitbucket.org/brawner/collision_map_creator_plugin