Ariel Anders PhD

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Objective

I am a recent MIT Computer Science PhD graduate interested in full-time positions. I want to program robots in unstructured domains. My expertise lies at the intersection of planning, programming, learning, and robotics.

Experience

Researcher with the Learning and Intelligent Systems, CSAIL MIT   **2012-2019**

- I researched robot manipulation for household helpers when there is considerable uncertainty due to inaccurate sensing, imperfect actuation, and lack of knowledge of the environment properties (eg. mass and pressure distribution of objects). The majority of my research projects were implemented on a Willow Garage PR2 robot, which I programmed using the Robot Operating system (ROS), python, and C++.

Autonomous Vehicles Course Instructor, MIT   **2016-2017**

- The MIT RACECAR is an open-source platform for robotics research and education; it has state-of-the-art sensors and computing hardware, placed on top of a powerful 1/10-scale mini race car. I instructed multiple team and project based courses with the MIT RACECAR: TA for MIT 6.141/16.405 (Spring 2016 & 2017), Lead Associate Instructor (2016) and Technical Instructor (2017) for MIT BeaverWorks Summer Institute.

- I implemented laboratory assignments, provided office hours, and gave lectures on planning and computer vision. I received the MIT EECS Frederick C. Hennie III Teaching Award recipient in Spring 2017.

Researcher with the Bionics Lab, UC Santa Cruz   **2010-2012**

- Advised by Jacob Rosen. Research focus: CAD/CAM applications in dentistry, autonomous control with mechanical systems, and UI development for robotic programs. Developed a workflow to execute dental crowning and implant placement procedures on static dental models that I verified experimentally. Worked on a system to implement dynamic dental procedures.

Education

Computer Science SM and PhD, Massachusetts Institute of Technology   **2012-2019**

Graduate research advised by Leslie P. Kaelbling and Tomas Lozano-Perez on reliably arranging objects using conformant planning. More information about my doctorate thesis is available here: https://arii.github.io/phd/

Computer Engineering BS, University of California: Santa Cruz   **2008-2012**

Capstone team project: improving the performance of arithmetic functions for Oracle numbers within the Oracle Database; this project was implemented in C and used code profilers to find performance bottle necks and applied vectorized hardware instructions (SSE) and different number representations to achieve speedup.

Skills

Languages Python, C, C++, Matlab, shell script, Javascript, Swift. **OSs** Unix, Linux, Mac, Windows
Robot platforms Denso VM-series, PR2, TurtleBot, DuckieBot, 6.141 Racecar, Kinova Movo
Embedded Systems Arduino, Raspberry Pi, Jetson TX1 and TK1, Pandaboard, Microchip PIC 32, Virtex5 FPGA, and 68HC11E1 Microcontroller