Pol Rosello

See prosello.com for contact information and selected projects.

PERSONAL PROFILE

Software engineer interested in the research and development of autonomous real-time systems, particularly in environments with limited computational resources.

EDUCATION

Stanford University, School of Engineering, Stanford, CA (4.11 GPA)
Master of Science in Computer Science — *June 2017*

Cornell University, College of Engineering, Ithaca, NY (3.90 GPA)
Bachelor of Science in Electrical and Computer Engineering — *May 2015*
Bachelor of Science in Computer Science — *May 2015*

WORK EXPERIENCE

Software Engineer II — *Sept 2017 – present*
SpaceX, Hawthorne, CA — *Summer 2015, Summer 2016 (intern)*

Lead developer on laser-based inter-satellite communication system R&D project.
Lead fairing recovery developer for 2 years leading up to successful catch. Implemented GNC algorithms on a constrained system while adapting firmware for two major avionics architecture redesigns. Supported rapid software development and test to enable progress every flight.
Implemented fault-tolerance improvements to IMU inertial propagation algorithm, reducing likelihood of autonomous flight termination.
Developed an FPGA-based, highly-accurate six-axis accelerometer and gyroscope sensor and fault simulator for in-house IMU. Used in closed-loop, real-time mission simulations.

Graduate Researcher — *Jan 2017 – June 2017*
Stanford Intelligent Systems Laboratory, Stanford University
Developed a novel multi-agent reinforcement learning formulation of multi-object tracking, leading to a 2018 AAMAS conference publication. Research in autonomous driving funded by SAIC.

Undergraduate Researcher — *Jan 2014 – Dec 2014*
Batten Group, Cornell University
Writing and optimizing benchmark applications for a novel high-performance, energy-efficient parallel computing microarchitecture by mapping them to a research ISA. Contributions acknowledged in two 2014 IEEE MICRO papers.

Software Engineering Intern — *Jun 2014 – Aug 2014*
Cisco Systems, San Jose, CA
Developed suites in C# to automate the zero-touch deployment, tunnel provisioning, and firmware upgrades of field routers; automated testing of the front-end functionality of the product.

Teaching Assistant — *Aug 2013 – Dec 2014*
Cornell University
Held office hours and review sessions, graded student projects and exams for ECE 4750/CS 4420: Computer Architecture (Fall 2014), ECE 3140/CS 3420: Embedded Systems (Spring 2014) and CS 2110: Object-Oriented Programming and Data Structures (Fall 2013).

Research Assistant — *Oct 2012 – May 2013*
Molnar Group, Cornell University
Programmed an FPGA and designed a printed circuit board as a testing platform for a very low power, very low noise multi-electrode array (MEA) for electrophysiological neural recordings.

RELEVANT SKILLS

Coursework: Embedded Systems • Computer Architecture • Machine Learning • AI • Design with Microcontrollers • Computer Vision • Signal Processing • Neural Networks • Reinforcement Learning • Natural Language Processing • Discrete Mathematics

Technologies: C/C++ • Python/SciPy • ARM • Verilog • OpenCV • OCaml

PUBLICATIONS AND AWARDS

Rosello, P., & Kochenderfer, M. "Multi-Agent Reinforcement Learning for Multi-Object Tracking." In *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2018.
Cornell College of Engineering Jacobs Scholar