SEAN GILLEN

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EDUCATION

University of California Santa Barbara　　　　　　　　　September 2017 - Present
MS/PhD Electrical And Computer Engineering　　　　　　　　　　　　　　GPA: 4.0

University of Maryland College Park　　　　　　　　September 2013 - May 2017
BS Electrical Engineering　　　　　　　　　　　　　　　　　　　　　GPA: 3.5

TECHNICAL SKILLS

Languages　　Python, C, C++, MATLAB, Bash, Mathematica, Elisp, LaTeX
Libraries　　ROS/Gazebo, OpenCV, Pytorch, Tensorflow

WORK HISTORY

University of California Santa Barbara　　　　　　　　September 2017 - Present
Graduate Student Researcher

· Conducting research fusing traditional control theory with deep reinforcement learning (**Python, C++, Matlab**), focusing on the control of under-actuated dynamic systems, and legged locomotion in particular.

Veoneer　　　　　　　　　　　　　　　　　　　　June 2019 - February 2020
Robotics Consultant

· Wrote a device driver **C++** and **ROS** node for a new automotive camera system.
· Implemented camera authentication on an external msp430.

Northrop Grumman　　　　　　　　　　　　　　June 2016 - September 2016
Electrical Engineer

· System level integration of several sensor payloads in an unmanned underwater vehicle (UUV).
· Wrote software (**Python**) to collect, clean, and analyze sensor/log data from the UUV.

Horn Point Laboratory　　　　　　　　　　　　　　June 2014 - June 2015
Software Engineer

· Wrote software (**C++**) for a Remus 600 UUV to provide altitude control, user defined acoustic modem messages, augmented data simulation, and adaptive mission planning to the vehicle.

Naval Air Systems Command (NAVAIR)　　　　　　June 2015 - September 2015
Electrical Engineer

· Developed a prototype vision system capable of imaging in extremely turbid underwater environments.
· Heavily modified a commercial underwater vehicle to house and control aforementioned visioning system.

University Of Maryland　　　　　　　　　　　　September 2015 - June 2016
Undergraduate Student Researcher

· Implemented computer simulation of nematic liquid crystals using **Matlab** and **Mathematica**

SIDE PROJECTS

Project Qubo

· Collaborated with several other engineers to build an autonomous underwater octocoptor from scratch. The vehicle can autonomously navigate to various targets.
· Wrote majority of the vision (**OpenCV**), control (**C++**), autonomy (**Python**), and embedded (**Arduino**) software, using **ROS** as a middleware.

Compressed air engine

· Manufactured a small compressed air engine, using manual and CNC Machine tools.

PUBLICATIONS

Sean Gillen and Katie Byl. Mesh based analysis of low fractal dimension reinforcement learning policies. *International Conference on Robotics and Automation*, 2021

Sean Gillen and Katie Byl. Explicitly encouraging low fractional dimensional trajectories via reinforcement learning. *4th Conference of Robotic Learning*, 2020

Sean Gillen, Marco Molnar, and Katie Byl. Combining deep reinforcement learning and local control for the acrobot swing-up and balance task. *59th IEEE Conference on Decision and Control*, 2020

TEACHING

Intermediate C programming (Spring & Fall 2016)
Introduction to Circuits (Fall 2017)
Digital Control (Winter 2017)
Introduction to Probability & Statistics (Spring 2017)
Robotic Modeling & Control (Fall 2018)
Operating Systems (Spring 2019)
Compilers (Fall 2020)
Algorithms & Data Structures (Winter 2021, Spring 2021)

HONORS & AWARDS

Bodharamik Engineering scholarship (2016)

Sikorsky Corporate Partners scholarship (2016)

Outstanding TA award (2017)