S. Violet Killy

portfolio: violetkilly.com | violetk@mit.edu

Education

Massachusetts Institute of Technology (MIT)
Cambridge, MA

Candidate for Master of Science in Mechanical Engineering (SMME) — 2020-2022

- Thesis research in autonomous robot visual navigation with Prof. John Leonard's Marine Robotics Group
- *Relevant Coursework:* Mechatronics, Robotic Manipulation, Computer Vision, Biomechanics

Bachelor of Science in Mechanical Engineering with Concentration in Robotics | GPA: 4.9/5.0 — 2016-2020

- *Relevant Coursework*: Product Engineering Processes, Bio-inspired Robotics, Artificial Intelligence, Design and Manufacturing, Mechanics and Materials, Dynamics and Control, Thermal Fluids Engineering, Numerical Computation, Electronics for Mechanical Systems, Fundamentals of Programming, Instrumentation and Measurement

Experience

The Aerospace Corporation
El Segundo, CA

Graduate Data Science and Artificial Intelligence Intern — Sep 2021-present

- Exploring optical flow algorithms to be implemented in an electro-optical sensor simulation toolbox

Graduate Engineering Applications Intern — June 2021-Aug 2021

- Implemented SLAM (Simultaneous Localization and Mapping) capabilities on a CubeSat RPOD (Rendezvous Proximity Operations and Docking) testbed platform
- Characterized sensor performance and visualized real-time sensor data feeds in ROS

MIT Mechanical Engineering Department
Cambridge, MA

Teaching Assistant (*Electronics for Mechanical Systems, Dynamics and Control)* — June 2020 – present

- Supervised 85+ students while they learned electronics fundamentals, completed practical lab experiments, and successfully soldered Printed Circuit Boards (PCBs)

Sistine Solar
Somerville, MA

Product Design Intern — May 2019 – Aug 2019

- Fabricated and scaled up a novel mechanical device used to apply a patented technology (SolarSkin) to solar panels, which enables them to aesthetically blend in with roofing tiles

MIT Media Lab: Affective Computing Group
Cambridge, MA

Undergraduate Researcher — June 2017 – Sep 2018

- Engineered Cube Puzzles: a tangible platform that tracks the placement and orientation of colored wooden blocks, specifically targeted at individuals with neurodevelopmental differences including autism and ADHD
- Designed and machined a wooden housing for the embedded electronics
- Assembled printed circuit boards and integrated them into the system, enabling collection of real-time data

Leadership

Gordon-MIT Engineering Leadership Program
Cambridge, MA

Team Coach, Section Leader, Teaching Assistant (present) — Sep 2018 - present

- Developed leadership, teamwork, and communication skills in a selective leadership development program
- Engaged in scenario-based practice in preparation for industry engineering contexts complementing MIT coursework
- Oversaw and coached 100+ students as they navigated the program

Skills and Interests

- *Software/Programming*: SolidWorks, Fusion360, Arduino, Raspi, Python, MATLAB, Java, Blender, ROS
- *Electronics/Machining*: Soldering, Injection Molding, Thermoforming, CNC Milling, Rapid Prototyping, PCB Design

Honors

- Rhodes Scholarship Finalist
- Pi Tau Sigma (International Mechanical Engineering Honors Society)

MIT Activities

- MIT Varsity Fencing: Dedicated 10+ hours per week to train and compete while balancing a full academic course load
- MIT Global Teaching Labs: Taught physics, math, and computer science to students in Hamburg, Germany
- MIT MakerLodge: Supervised freshmen 4 hours per week in a makerspace and taught basic shop safety skills