SAMUEL (SAM) MILHAVEN

Curriculum Vitae

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ACADEMIC AND RESEARCH INTERESTS

I am broadly interested in autonomous vehicles/mobile robotics, terrain navigation, and control systems. I have conducted research into autonomous motorcycles navigating on uneven terrain, which culminated in physical prototypes that can be used to test safety systems for human riders. In addition to motorcycle research, I'm currently working on a passively grasping foot to allow quadruped platforms to traverse narrow paths.

EDUCATION

Northeastern University, Boston, MA *Expected Spring 2026*
M.S. in Robotics with a concentration in Mechanical Engineering
GPA: 3.92
Areas of Interest: Autonomous vehicles/mobile robots, terrain navigation, and control systems

Lafayette College, Easton, PA *2024*
B.S. in Integrative Engineering with a concentration in Robotics
GPA: 3.40 | Honors in Integrative Engineering
Undergraduate Honors Thesis: Autonomous Motorcycle Stabilization on Uneven Terrain

RESEARCH EXPERIENCE

Honors Thesis Scholar, Mechanical Engineering, Northeastern University *September 2025-present*
Advisor: Dr. Alireza Ramezani, Kaushik Venkatesh Krishnamurthy

Graduate Research Assistant, SiliconSynapse Lab, Boston, MA *November 2024-present*
Advisor: Kaushik Venkatesh Krishnamurthy, Dr. Alireza Ramezani

Independent Researcher *September 2024-present*
Collaborator: Dr. Alexander Brown
Simulating the Effects of a Virtual Motorcycle Passenger on Vehicle Motion and Rider Effort

Honors Thesis Scholar, Integrative Engineering, Lafayette College *August 2023- May 2024*
Advisors: Dr. Alexander Brown, Dr. Connor Ligeikis, Dr. Michael Nees, Dr. Brett Utter
Autonomous Motorcycle Stabilization on Uneven Terrain

Research Assistant, DRIVe Lab, Easton, PA *January 2023- May 2024*
Advisor: Dr. Alexander Brown

CONFERENCE PUBLICATIONS

S. Milhaven, W. Li, R. McClosky, and A. Brown. Simulating the Effects of a Virtual Motorcycle Passenger on Vehicle Motion and Rider Effort, IEEE Intelligent Vehicles Symposium, June 22-25, 2025

AWARDS, HONORS, AND GRANTS

Daniel O'Neil Award ($3,000) *Fall 2023*

- Research funding award given by Lafayette College's Department of Engineering

PROFESSIONAL EXPERIENCE

Robotics R&D Intern, HITT Contracting Inc., Falls Church, VA *Summer 2025*

Collaborated on the Virtual Superintendent project by designing and installing a custom Spot payload that included a 6-DOF arm and tablet to assist in telecommunication on-site.

SKILLS

Proficient in Python, ROS 2, Arduino, Matlab, Simulink, Java, Autodesk Fusion360, Solidworks, Webots (3D physics-based simulator), Control Systems, Drive Systems, Wiring/Soldering, PCB Design, Rapid-prototyping/ FDM printing, and GD&T

PROFESSIONAL MEMBERSHIP

IEEE Young Professionals, Member *2024-present*
ASME, Student member *2022-present*
IEEE, Student member *2022-present*

REFERENCES

Dr. Alireza Ramezani
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