Lee Milburn

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EDUCATION

University of Pennsylvania, School of Engineering and Applied Science, Philadelphia, PA — *May 2025*
Master of Science in Engineering in Robotics — *GPA*: 3.8

Northeastern University, College of Engineering, Boston, MA — *May 2023*
Bachelor of Science in Computer Engineering and Computer Science — *GPA*: 3.8
Selected Awards: ECE Capstone 1st Place; Fung Leadership Award; PEAK: Summit Award; Northeastern Achievement Award

RELEVANT RESEARCH/WORK EXPERIENCE

Safe Autonomous Systems Lab, Philadelphia, PA — *Advisor: Dr. Rahul Mangharam*
Research Assistant at University of Pennsylvania — *May 2024 – Present*

- Closed Sim2Real Gap by learning residuals transition function in custom 3D Isaac Lab Simulation scenes from IRL data
- Used Vision Language Foundation Models to zero-shot friction estimate on out of distribution data on F1Tenth
- Teacher's Assistant for ESE 6150 F1/10 Autonomous Racing Course

Scalable Autonomous Robots Lab, Philadelphia, PA — *Advisor: Dr. M. Ani Hsieh*
Research Assistant at University of Pennsylvania — *Sept 2023 – May 2024*

- Implemented a physics-informed Koopman Operator to estimate a non-linear quadrotor system
- Applied a Non-Linear Model Predictive Control (NMPC) based on the Koopman Operator's system model

Vinum-EU, Genova, Italy — *Advisor: Dr. Claudio Semini*
Guest Researcher at Italian Institute of Technology — *July - December 2022*

- Implemented artificial intelligence for a quadruped robot to autonomously navigate unknown vineyard environments
- Tested navigation stack on Dynamic Legged System's HYQReal in vineyard environment and on Aliengo in lab

Scientific Systems, Woburn, MA
Autonomous Systems Co-op — *July 2021 – July 2022*

- Software developer for multi-target pursuit-evasion and implemented AI task-determining structures for SRM project
- Researched modeling search algorithms for optimizing multi-robot task allocation scheduled towards a time horizon

Robotics and Intelligent Vehicles Lab, Boston, MA — *Advisor: Dr. Taskin Padir*
Undergraduate Researcher at Northeastern University — *June 2020 - April 2022*

- Prototyped an autonomous UAV-UGV system to identify and pick up trash in unknown environments
- Won first prize in Northeastern's ECE Capstone Competition
- Wrote system's ROS network, decision making, and GUI for Human-Robot Collaboration

PUBLICATIONS & CONFERENCES

First Author workshop paper in ICRA 2025; First Author publication in RAAI 2023; First Author publication in IEEE-ICARSC 2023; First Author extended abstract and presentation in IRIM 2022; Publication in IEEE-HST 2022; Presented in DARS 2022;

TECHNICAL SKILLS

Programming Languages: Python, C++, ROS2, Java, Bash, SQL, LaTex
Concepts: Control, Machine Learning, Behavior Trees, Finite State Machines, Robotics Simulation, System Integration

Interests: Through-hiked the Pacific Crest Trail (2025), Backpacked Southeast Asia (2018)