

SEAN O'CONNOR

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EDUCATION

BOSTON UNIVERSITY
Master of Science in Computer Engineering

BOSTON, MA
Expected May 2027

BUCKNELL UNIVERSITY
Bachelor of Science in Computer Science and Engineering, Honors

LEWISBURG, PA
May 2026

Engineering GPA: 3.92/4.0 • Overall GPA: 3.71/4.0 • Magna Cum Laude • Dean's List: Seven Semesters

James M. Pommersheim Research & Innovation in Engineering Award — awarded to the engineering student who has achieved through creative effort outstanding work of scholarship or invention

PUBLICATIONS

First Author, IEEE International Conference on Robot & Human Interactive Communication (RO-MAN)

- O'Connor, S. & Perrone, L.F. "A Web-Based Wizard-of-Oz Platform for Collaborative and Reproducible HRI Research" *IEEE RO-MAN 2025*, Eindhoven, The Netherlands
- O'Connor, S. & Perrone, L.F. "HRIStudio: A Framework for Wizard-of-Oz Experiments in HRI Studies" *IEEE RO-MAN 2024*, Pasadena, CA
- O'Connor, S. "A Web-Based Wizard-of-Oz Platform for Collaborative and Reproducible HRI Research" *Bachelor's Honors Thesis*, Bucknell University, 2026

RESEARCH EXPERIENCE

BUCKNELL UNIVERSITY
Human-Robot Interaction Researcher

LEWISBURG, PA
Jan 2023 – May 2026

- Published 2 first-author papers at IEEE RO-MAN (2024, 2025) on HRIStudio, a web-based Wizard-of-Oz platform enabling reproducible HRI studies across multiple robot platforms
- Completed honors thesis evaluating HRIStudio via pilot study: achieved 100% design fidelity and 96.7 execution reliability vs. 66.7 baseline; SUS score 76.7 vs. 59.2 for Choregraphe
- Architected modular plugin system with WebSocket teleoperation and RESTful API integrating ROS for NAO, Pepper, and custom robots

PROFESSIONAL EXPERIENCE

RIVERHEAD RACEWAY
Software Developer

RIVERHEAD, NY
Oct 2020 – May 2026

- Architected and deployed full-stack real-time statistics platform serving 1500+ concurrent users and 250k+ monthly visitors using Next.js, TypeScript, PostgreSQL, and Docker
- Designed and implemented RESTful APIs for mobile applications and third-party integrations, processing 10M+ API requests monthly
- Built automated CI/CD pipelines with GitHub Actions and monitoring systems, maintaining 99.9% uptime across racing season

BUCKNELL UNIVERSITY
Teaching Assistant – Software Engineering & Engineering Design

LEWISBURG, PA
Aug 2023 – May 2026

- Mentored 150+ students across software engineering, design patterns, and embedded systems (Arduino, microcontrollers)
- Developed automated testing frameworks and grading tools, improving learning outcomes while streamlining assessment processes

SELECTED PROJECTS

HRIStudio Research Platform

Next.js/TypeScript/ROS

- Full-stack web application for managing HRI experiments with WebSocket robot control, role-based access, and comprehensive data logging for reproducibility

Autonomous Vehicle Control – Chem-E-Car Competition

C++/Arduino

- Led 15-member team; implemented embedded control system with real-time sensor fusion achieving ± 10 cm precision at AIChE National Competition (2nd place, 2024)

TECHNICAL SKILLS

Robotics & AI: ROS/ROS2, PyTorch, Weights & Biases, HuggingFace Transformers, OpenCV, Gazebo, NAO/Pepper SDK, Wizard-of-Oz Methodology, Computer Vision

Embedded Systems: C/C++, Arduino, Raspberry Pi, I2C/SPI Protocols, Real-time Control, Finite State Machines, Sensor Integration

Software Engineering: Python, JavaScript/TypeScript, Git/GitHub, Docker, PostgreSQL, Next.js, React, Node.js, REST APIs

Research Tools: MATLAB, R, LaTeX, Statistical Analysis, Experimental Design, Data Visualization, Jupyter