

# SEAN O'CONNOR

sean@soconnor.dev  
sso005@bucknell.edu  
<https://soconnor.dev>

## EDUCATION

### BUCKNELL UNIVERSITY

#### Bachelor of Science in Computer Science and Engineering

Engineering GPA: 3.86/4.0 • Dean's List: Fall 2022, Fall 2023, Spring 2024, Fall 2024, Spring 2025

LEWISBURG, PA

Expected May 2026

## EXPERIENCE

### RIVERHEAD RACEWAY

#### Software Developer

RIVERHEAD, NY

Oct 2020 – Present

- Developed real-time statistics platform serving 1500+ concurrent users and 250k monthly website visits
- Built payment processing platform handling \$100,000+ in transactions with automated content management
- Modernized infrastructure through containerization and automation for reliable operations

### BUCKNELL UNIVERSITY

#### Computer Science Researcher - Human-Robot Interaction

LEWISBURG, PA

Jan 2023 – Present

- Led research and authored first-author papers at IEEE RO-MAN 2024 and 2025 conferences
- Developed web-based HRISudio platform addressing reproducibility challenges in Wizard-of-Oz studies

#### Computer Science Research Assistant - Chemical Engineering Department

Aug 2023 – May 2025

- Built automated data collection tools enabling researchers to focus on analysis over manual gathering

#### Teaching Assistant & Engineering Tutor

Aug 2023 - Present

- Mentored 200+ students across CS, engineering, and physics connecting theory to real-world applications
- Created automated testing frameworks with personalized feedback streamlining assessment processes

## ACTIVITIES

### AICHE CHEM-E-CAR COMPETITION TEAM

#### Former President, Electrical and Mechanical Team Lead

BUCKNELL UNIVERSITY

Jan 2023 – Present

- Designed custom microcontroller control system for hydrogen fuel cell regulation using finite state machine architecture

### BUCKNELL COFFEE SOCIETY

#### Co-Founder and Treasurer

BUCKNELL UNIVERSITY

Oct 2023 – Present

- Manage financial operations, budgeting, and event coordination for campus coffee organization

## SELECTED PROJECTS

### beinvoice - Professional Invoicing Application

TypeScript/Next.js

- Built full-stack invoicing app with secure authentication, client management, and invoice generation

### Formula One Performance Prediction Using Machine Learning

Python/ML

- Developed ensemble machine learning models (LightGBM, XGBoost, Random Forest) to predict F1 lap times with high accuracy

### HRISudio Research Platform

Next.js/TypeScript

- Developed web-based platform for Wizard-of-Oz experiments with WebSocket-based robot control and comprehensive data logging

## RELEVANT COURSEWORK

**Artificial Intelligence & Data Science:** Data Mining, Algorithm Design & Analysis

**Systems & Software Engineering:** Software Engineering & Design, Computer Systems, Operating Systems Design, Programming Language Design

**Research & Analysis:** Research Methods in Computer Science, Probability & Statistics, Experimental Design

**Mathematics & Theory:** Linear Algebra, Discrete Mathematics

**Networks & Security:** Computer Networks & Security

## TECHNICAL SKILLS

**Programming Languages:** Python, C/C++, JavaScript/TypeScript, Java, MATLAB, SQL, Bash, LaTeX

**Robotics & HRI:** ROS/ROS2, Gazebo, NAO/Pepper SDK, WebSockets, Robot Operating System (ROS)

**Machine Learning & AI:** PyTorch, TensorFlow, scikit-learn, LightGBM, XGBoost, OpenCV, pandas, numpy, Jupyter

**Research Tools:** Git/GitHub, Docker, Statistical Analysis (R), Experimental Design, Data Visualization

**Web & Systems:** React, Node.js, Next.js, REST APIs, PostgreSQL, Linux, Cloud Computing, Distributed Systems

**Hardware/Embedded:** Arduino, Raspberry Pi, I2C/SPI, Sensor Integration, Real-time Systems