SAMUEL R. WISNOSKI

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EDUCATION

Olin College of Engineering – BS, Electrical and Computer Engineering – 4.0 | May 2027, Needham MA

Relevant Coursework: Advanced Circuits, Fundamentals of Robotics, Signals, Software Design, Linear Algebra, Principles of Engineering, Discrete/Combinatorics, Multivariable Calculus, Differential Equations, Machine Learning

SKILLS

Computer: **Advanced:** Python, LTSpice, MATLAB, Arduino/Raspi **Intermediate:** C, HTML, ROS2, PyTorch/TensorFlow
Other: Machine Shop Proficiencies (Mill, Lathe, ShopBot), Conversational Spanish

EXPERIENCE

Barn Owl Technologies, *Electrical Integration Intern* — Oct. 2024 – Present

- **Prototyped** a series of 7 zapper circuits designed to attract and kill SWD flies for startup organization. **Measured** power consumption of circuit components, **optimized** circuit to lower battery consumption by 46%. **Programed** an **ESP-WROOM-32,** interfaced with solar panels to respond to variation in sunlight.
- **Tracked** number of SWD flies killed for 15 different mechanical designs. **Redesigned** electrical and mechanical systems to reduce manufacturing cost by 20%.
- Designed camera system to capture images of bug trap and upload images to our database. **Monitored** insect populations by processing images with a **machine learning algorithm** for bug classification.

Phoenix Farming Robotics Lab, *System Integration Engineer* — Sept. 2023 – Present

- **Designed** and **integrated** power and computing system centered around a **NUC** and **Arduinos.** Codesigned **ROS2 pipeline** between camera nodes, data processing, and robot/delta arm movements.
- Developed **python framework** utilizing **forward and inverse kinematics** to translate coordinates to delta arm motion. Improved accuracy of delta arm from 7mm to 3mm by implementing magnetic encoders.
- Used the **Scrum Sprint process** to **organize** semester long timelines. **Delegated** tasks to team of 9 students during meetings. Educated new members about electrical and software system design over 3 onboarding meetings.

Olin Baja SAE Racing Team, *Suspension and Electrical Engineer* — Sept. 2023 – Sept. 2024

- Developed **full electrical system**, ensuring reliable power distribution and proper integration of safety requirements. Mounted battery box, **wired** 3 emergency stops to engine, **wired** break lights. **Soldered and configured** brake pressure, fuel level, and wheel speed sensors.
- **Modified and rebuilt** rear suspension and footbox to double braking power. Designed and implemented a custom axle extension spacer after testing and refining failed welded solutions. **Machined** 10+ parts on mill and lathe.

Olin Residential Life, *Resident Resource (RA)* — May 2024 – Present

- **Managed** and **supported** a floor of 30 people. **Hosted** 6 events with average attendance of 60 people. Used **communication, organization,** and **management skills** to foster a positive community environment.

Olin Student Affairs and Resources, *Summer Intern* — May 2024 – Aug. 2024

- Supported Student Affairs, Post Graduate Planning, and Library offices by **planning** and **marketing** fall programs, **updating** safety/disciplinary procedures, and **redesigning** crucial student spaces.

PROJECTS

SuperSpot (Robotic Dog) — Fall 2024

Worked as the **electrical/software lead** to design a mobile robotic pet that responds to voice commands. Arduino R4 interfaced with 10 joints to allow SuperSpot to perform tasks such as sit, paw, heel, and fetch.
Skills: Circuit Design, Wiring, Python, Arduino, HTML, Project Management

BettaFish (Chess Bot) — Fall 2024

Employed the MiniMax Algorithm to create a chess bot in python that plays at 1700 ELO.
Skills: Discrete Mathematics, Graph Theory, Python, Optimization

AWARDS & ACTIVITES

- **Phoenix Farming Robotics Lab** won $10,000 grand prize in the Farming Robotics Challenge (2024)
- **Olin Merit Scholarship** – $120,000 Awarded (2023)
- **Scouts of America – Eagle Scout** (2023), 250+ hrs of community service as a Scout

- **Changemaking in Education Research** under Prof. Stephanos Matsumoto (Aug 2024 – Present)
- **Olin Honor Board** – Chair (Fall 2024), Vice Chair (Spring 2024)