Bryce Richard

brycerichard26@gmail.com ❖ (385) 233-7360 ❖ Portfolio: https://brycemr.github.io/br

Education

Carnegie Mellon University — Pittsburgh, PA

M.S. in Mechanical Engineering - Research | *QPA: 3.9/4.0* — *Anticipated Graduation: May 2025*

Relevant Coursework:

- Advanced Computer Vision
- Trustworthy AI
- Systems & Toolchains for AI Engineers
- Intermediate Deep Learning

Brigham Young University — Provo, UT

B.S. in Mechanical Engineering; Minor in Computer Science | *GPA: 3.9/4.0* — *April 2023*

Skills

Programming Languages: Python (proficient), C++ (advanced)
Frameworks/Tools: OpenCV, Pytorch, ROS, Linux, AWS, Solidworks
Languages: English (Native Speaker), Spanish (Conversational)

Experience

Carnegie Mellon University - Biorobotics Lab — Pittsburgh, PA

MattLab Graduate Research Assistant — *August 2023 - Present*

- Developed a U-net semantic segmentation model for classifying 10 distinct components, enhancing average IoU from 0.794 to 0.934 through rigorous optimization.
- Engineered a live segmentation pipeline utilizing multiprocessing to increase image processing speed by 62.4%.
- Integrated a ROS-based system with a SCARA robot and vision system for automated component sorting, ensuring precise control with a suction end effector.
- Led dataset collection and annotation using the Segment Anything Model for high-quality mask generation, training a YOLOv8 model for real-time detection and tracking of E-waste components.

Juni Learning — Remote

Senior Computer Science Instructor — *August 2021 - September 2023*

- Instructed students in a one-on-one setting on the theory and application of machine learning libraries in Python.
- Taught students to organize and manipulate large datasets for analysis using Pandas and Scikit-learn in Python.

Brigham Young University - FLOW Lab — Provo, UT

Research Assistant — *August 2022 - May 2023*

- Developed optimization tools that integrated bathymetry data to minimize the LCOE of offshore wind farms.

Projects

Mini Offshore Wind Turbine

2023 D.O.E Collegiate Wind Competition — *August 2022 - May 2023*

- Collaborated with a team of 13 students in the Department of Energy's Collegiate Wind Competition to design and implement a control system for a wind turbine, enhancing its power regulation and safety capabilities.
- Designed and programmed a control system using an Arduino to adjust turbine blade pitch, regulate generator power output, and dynamically manage load conditions, contributing to a 7th-place finish in turbine testing.

Hobbies

Soccer | Rock Climbing | Snowboarding | Triathlons | Bass | Game Design