408-981-1841
San Diego, CA
cguzikowski@ucsd.edu

Connor Guzikowski

GitHub: connorguzi.github.io
LinkedIn: connor-guzikowski

Education

Master's of Science in Electrical and Computer Engineering **09/2024 - Present**
Concentration in Intelligent Systems, Robotics, and Controls
University of California San Diego

- Main courses: Mathematics for Robotics, Sensing and Estimation for Robotics, Advanced Image Synthesis
- Member of ARClab
  - Conducting research on the revival of the functionally extinct Northern White Rhino species through the use of a robotic catheter for embryo implantation into Southern White Rhino surrogates.

Bachelor's of Science in Robotics Engineering **09/2020 - 06/2024**
University of California Santa Cruz
GPA: 3.68 - Highest Honors in Major

- Main courses: Robot Manipulation, Mechatronics, Microcontroller Design, UAV Theory and Practice, Sensing and Sensor Technologies, Data Structures and Algorithms, Feedback Control Systems, Brain Inspired Machine Learning, Probability and Statistics for Engineers
- Member of engineering honors society Tau Beta Pi.

Work Experience

Undergraduate Research Assistant - UCSC H.A.R.E Lab **02/2023 - 09/2024**
UCSC ECE Department *Santa Cruz, CA*

- Student drone pilot
- Modified plant simulator for more accurate plant health simulations
- Researched using plant health simulations to train neural network for disease detection
- Aided in development of ROS2 packages and Linux environment setup for robotic systems

Individual and Group Tutoring **09/2022 - 12/2022, 01/2024 - 03/2024**
UCSC ECE Department *Santa Cruz, CA*

- Tutored for ECE13: *Computer Systems and C Programming* and ECE167: *Sensing and Sensor Technologies*
- Led office hours solo and in conjunction with teaching assistants

CITRIS Research Intern **06/2022 - 08/2022**
Environmental Defense Fund *Remote*

- Researched robotic applications within the agriculture industry and analyzed their environmental impact.
- Worked as a team to create a company report.

Projects

Utilizing Synthetic Plant Health Data to Train Neural Networks **06/2024**
Undergraduate Thesis and Research

- Modified plant health simulator to accurately model a plant's spectral response to water deprivation
- Conducted experiment where a plant's spectral reaction was measured
- Created algorithm to generate field of both healthy and stressed plants

Imitation Learning for Ball Catching **03/2024**
Deep Learning and Robotic Manipulation

- Implemented imitation learning model to teach robot arm to catch a ball in simulation
- Model learned how to correlate ball position in cameras with target destination for arm

Event Based Object Detection - Self Driving Application **11/2023**
Neuromorphic Computing and Spiking Neural Networks

- Expanded on previous work to detect pedestrians, two wheelers, cars, trucks, buses, traffic signs, and traffic lights on data from neuromorphic camera.
- Modified previous work to utilize an event-based neural network on the event-based data

Power Glove **06/2023**
Software and Circuit Design

- Glove that turns on and interacts with various devices using finger taps and motion of hand
- Incorporates capacitive touch sensors, IR sensors, and IMU
- Devices included laptop, RGB LED, servo motor, and piezo speaker

UAV Waypoint Following and Orbiting **03/2023**
Controls and Software Design

- Runs simulation to guide a UAV to various waypoints
- UAV orbits said waypoints for a specified duration before redirecting to other waypoints.

Skills

Programming	Python, C, C++, Git, LaTeX, Matlab, OpenCV, PyTorch, ROS/ROS2, Matlab
Hardware Design	Verilog, Oscilloscope/Multimeter proficiency, Circuit Design, Embedded System Development
Other	Github, Linux, Solidworks, Fusion360, QGIS, Drone Flying