

# Nevin Kopp

nevinkopp@gmail.com | nevinkopp.github.io | github.com/nevinkopp

## Education

**University of California, Riverside** – MS in Robotics 2024

**University of California, Riverside** – BS in Electrical Engineering 2023

## Experience

**Robotics Tutor** – Online 2025 – Present

- Guided tutees through troubleshooting, improving their ability to resolve technical challenges.
- Introduced students to sensors, automation and control systems enabling successful autonomous builds.
- Provided feedback on technical and teamwork skills, improving collaboration and project outcomes.

**Graduate Student Researcher** – University of California, Riverside CA 2023 – 2024

- Researched methods to improve the performance of machine learning models for marine life tracking
- Trained modern open air models on underwater images both with raw and enhanced datasets
- Results concluded with a performance increase of 10-15% with the enhanced image dataset

**Engineering Teacher Assistant** – University of California, Riverside CA 2023 – 2024

- Assisted engineering professors with grading, holding office hours, and running electrical engineering labs
- Briefed students on theories regarding components such as diodes, operational amplifiers and transistors
- Assisted students with using power supplies, oscilloscopes, and multimeters to complete experiments

## Projects

**Leviathan – Autonomous Underwater Vehicle (AUV)** nevinkopp.github.io/projects/1\_project/

- Participated in a multidisciplinary student club to develop an AUV for use in an international competition
- Used Gazebo and ROS for simulation and control to validate functionality within a hardware in the loop environment
- Designed and delivered motor controller and battery management PCBs for use in the AUV prototype

**Autonomous Mobile Robot Navigation with PID Controller** nevinkopp.github.io/projects/5\_project/

- Graduate-level course required autonomous navigation within an obstacle-laden environment to complete a task
- Applied the A\* search algorithm for optimal path planning, ensuring efficient obstacle avoidance
- Developed a PID control system to maintain accurate and stable motion throughout the robot's trajectory
- Integrated polynomial time scaling to enhance trajectory smoothness
- Successfully demonstrated task completion by navigating the map, avoiding obstacles and pushing a ball into the goal

**Industrial Robotic Arm Analysis and Design** nevinkopp.github.io/projects/6\_project/

- Analysis and design of a four-joint robotic arm for palletizing tasks in industrial settings for a graduate analysis course
- Solved forward, inverse, and velocity kinematics, as well as statics equations to create a realistic model
- Rendered a comprehensive and functional concept model in 3D which was able to effectively showcase the capability of the arm to perform palletizing tasks

## Skills

**Robotics:** Robot Operating System (ROS), Inverse Kinematics, Forward Kinematics, Artificial Intelligence (AI), Machine Learning (ML), Perception, Path Planning

**Electrical Engineering:** Embedded Systems, I2C, UART, SPI, Altium, PID Control, ARM, AVR, Ethernet, SPICE

**Analysis:** Finite State Machine (FSM), Git, MATLAB Simulink, Bash, OpenCV, PyTorch, scikit-learn, C++, C, Python, HIL

**CAD:** SolidWorks, FreeCAD

**Technical:** Solder Station, Power Supply, Oscilloscope, Multimeter, Laser Cutting, 3D printing