

Nevin Kopp

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Experience

Embedded Software Engineer – Science Applications International Corporation (SAIC) 2026 – Present

- Wrote a custom packet analyzer for debugging and testing purposes that works with UART and UDP to confirm proper functionality of the embedded device during operation
- Packet analyzer also decrypts according to the AES protocol and uses CRC to ensure packet integrity

Robotics Engineering Intern – EV Bots 2025 – 2026

- Developed and refined motion control algorithms in C++, implementing PID loops and kinematics for precise manipulator positioning in a teleoperated environment with a space mouse

Graduate Robotics Researcher – University of California, Riverside 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

Projects

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

- Leviathan is a custom AUV designed from scratch and implements the full-stack of robotics architecture, from low-level firmware to high-level autonomous mission logic
- Personal contributions include PCB design for power supply and battery management system
- Other contributions include working with Gazebo/ROS2 to simulate an environment to validate control laws and computer vision pipelines
- Additionally, I helped to implement autonomous navigation algorithms using ROS2, enabling the vehicle to perform complex underwater tasks such as gate traversal using IMU integration

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

- 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 for trajectory optimization
- Successfully demonstrated task completion by navigating the map, avoiding obstacles and pushing a ball into the goal

Education

University of California, Riverside – M.S. in Robotics 2024

University of California, Riverside – B.S. in Electrical Engineering 2023

Skills

Robotics Frameworks: ROS/ROS2, Isaac Sim, Gazebo

Programming Languages: C++, Python, Rust (Embedded), Embassy

AI/ML: Autonomous Navigation, SLAM, Sensor Fusion, Computer Vision, Trajectory Optimization

Hardware: I2C, UART, SPI, STM32

Electrical Laboratory: Solder, Power Supply, Oscilloscope, Multimeter, Laser Cutting, 3D Printing