

Dominic K. Olson

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EDUCATION

University of California, Los Angeles (UCLA)

Master of Science, Electrical and Computer Engineering 09/2024 - expected 12/2025

Bachelor of Science, Electrical Engineering; GPA 3.95; *magna cum laude* 09/2020 - 03/2024

Relevant Coursework: Wireless Communication Systems, Optimization, Stochastic Processes, Deep Learning, Signal Processing, Control Systems, RF Systems, Antennas, Computer Architecture, Analog & Digital Circuits

EXPERIENCE

UCLA ECE | Teaching Assistant for Embedded Signal Processing and Machine Learning 09/2024 - present

- Head teaching assistant for undergraduate capstone course, gave lectures, led labs and projects
- Expanded curriculum to include modern DSP and AI techniques for edge computing applications

NVIDIA | Tegra Systems Software Intern 06/2024 - 09/2024

- Worked on embedded software and tools for safety and security features on autonomous vehicles
- Profiled algorithms on RISC-V core, automated static analysis fixing with scripting and generative AI

Nuro | Radar Signal Processing Software Engineering Intern 06/2022 - 09/2022; 06/2023 - 09/2023

- Developed features to log and process radar data on autonomous delivery vehicles in C and C++
- Improved radar performance by researching, implementing and evaluating detection algorithms
- Boosted execution speed for the radar signal processing pipeline and for raw data collection
- Created interactive Python tools to calculate and visualize range, velocity, and azimuth from radar data

Digital Microwave Lab at UCLA | Undergraduate Researcher (PI: Y. E. Wang, PhD) 01/2023 - 06/2024

- Developed low noise receivers with broadband noise matching for electrically small antennas
- Designed and simulated amplifiers with Keysight ADS, tested with tools including network analyzer

IEEE at UCLA | R&D Lead, Projects and Lab Manager, Micromouse Project Lead 05/2021 - 05/2024

- Managed electronics lab space, placed parts orders, mentored students' personal projects
- Assisted in developing projects, provided feedback on hardware and software designs and curriculum
- Taught 70+ students PCB design, embedded programming, control algorithms, sensors, SMD soldering
- Hosted work sessions, lectures, trainings, and lab hours to assist club members and officers

PROJECTS

Wireless Communication System | IEEE at UCLA WRAP Hardware and DSP Team Member 10/2022 - 06/2024

- Simulated BPSK communication system with PLL, timing recovery, and packet detection in MATLAB
- Wrote embedded software in C to implement the system on a pair of STM32 microcontrollers
- Designed amplifiers, oscillators, mixers, and filters, simulated in LTSpice, assembled and tested boards

Embedded Digital String Instrument | Low-latency embedded audio signal processing 10/2023 - 03/2024

- Designed small music synthesizer to produce string sounds with tunable distortion and reverb effects
- Utilized MATLAB for algorithm prototyping and C on STM32 for real-time embedded system

Micromouse | Autonomous maze-solving robot, first place at IEEE at UCLA's competition 10/2020 - 05/2021

- Designed system with custom circuit boards for motor control, IR sensing, gyroscope
- Implemented PID control and the Floodfill maze solving algorithm in C on an STM32 microcontroller

SKILLS

Languages & Software: C, C++, Python, MATLAB, SystemVerilog, TensorFlow, CUDA, Bash, ADS, LTSpice, KiCAD
Tools: Oscilloscope, Vector Network Analyzer, Spectrum Analyzer, Logic Analyzer, Software-Defined Radio