Dominic K. Olson

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EDUCATION

University of California, Los Angeles (UCLA)

Master of Science, Electrical and Computer Engineering *09/2024 - expected 03/2026*

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

Relevant Coursework: Wireless, RF Systems, Antennas, Stochastic Processes, Deep Learning, Signal Processing, Convex Optimization, Information Theory, Estimation Theory, Controls, Computer Architecture, Analog Circuits

EXPERIENCE

Wireless Lab at UCLA | Graduate Researcher (PI: Ian Roberts, PhD) *01/2025 - present*

- Researched novel methods for millimeter-wave MIMO wireless systems with hardware impairments
- Developed wireless communication and radar testbed with phased arrays and software-defined radios
- Investigated active machine learning and robust optimization techniques for phased array systems

Qualcomm | Modem Machine Learning Firmware Intern *06/2025 - 09/2025*

- Contributed to toolchain, kernel code, and simulators to improve edge AI inference on cellular modems
- Prototyped memory management strategies for future generations of ML hardware and firmware

UCLA ECE | Teaching Assistant for Embedded DSP & ML, Intro to EE *09/2024 - present*

- Led labs and projects for signal processing design capstone course and introductory EE course

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 student projects, and reviewed designs
- 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

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

- Designed system with custom hardware and embedded C for sensing, motor control, maze algorithms

SKILLS

Languages & Software: C, C++, Python, MATLAB, SystemVerilog, PyTorch, CUDA, Bash, ADS, LTSpice, KiCAD

Tools: Software-Defined Radio, Oscilloscope, Vector Network Analyzer, Spectrum Analyzer, Logic Analyzer