Oliver Wang

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University of California, Los Angeles (UCLA) — *Los Angeles, CA*

- B.S. Candidate in Electrical Engineering
- Expected: June 2026
- Cumulative GPA: 3.985 / 4.00
- Eta Kappa Nu (HKN) Electrical Engineering Honor Society
- Key Coursework: Neural Networks and Deep Learning, Digital Signal Processing, Digital Filter Design, Control Systems, VLSI, Circuit Design, Electrodynamics, Electromagnetics, Linear Algebra, Probability, Statistics, Computer Programming

RESEARCH INTERESTS

- Time series forecasting and foundation models
- Spectral analysis and signal processing for embedded and edge systems
- Machine learning for sensing, robotics, and healthcare applications
- Model efficiency and state-space architectures for time-series reasoning

PUBLICATIONS

- O. Wang, P. Quan, K. Yang, M. Srivastava, "Spectral Predictability as a Fast Reliability Indicator for Time Series Forecasting Model Selection," accepted to AAAI AI4TS 2026 Workshop. Available at https://arxiv.org/abs/2511.08884
- O. Wang, G. Cheng, L. Caspar, et al., "Robots Reading Recipes: Large Language Models as Translators Between Humans and Machines," presented at Artificial Life and Robotics Conference 2024. Published at *Artificial Life and Robotics*, Volume 30, Issue 3, 2025
- O. Wang [coauthor], "An Insertable Glucose Sensor Using a Compact and Cost-Effective Phosphorescence Lifetime Imager and Machine Learning," *ACS Nano*, Vol. 18, No. 34, 2024.
- O. Wang, C. Dovrolis, J. Lee, "LSOP: Layer-Scaled One-shot Pruning," *JSR*, Vol. 11, No. 1, 2022.

RESEARCH EXPERIENCE

NSF-Funded Researcher — Networked and Embedded Systems Laboratory (with Professor Mani Srivastava)

Jan 2024 – Present

- Integrated frequency-domain signal processing into deep-learning foundation models for forecasting tasks.
- Developed state-space architectures to improve model efficiency on edge devices.
- Applied methods to financial currency time series and radar-based vital sign sensing.
- Published manuscript on the relationship between spectral predictability and time series model performance to AAAI Workshop.

Researcher — Ozcan Research Group

Mar 2023 – Sep 2024

- Designed and calibrated compact glucose sensing systems using phosphorescence lifetime imaging.
- Implemented image segmentation and neural network models to reduce sensor variability.
- Co-authored publication demonstrating sensor feasibility for low-cost healthcare applications.

INDUSTRY & PROJECT EXPERIENCE

Machine Learning Lead — UCLA IEEE Digital Audio Visualizer

Sep 2024 – Jun 2025

- Led team to build real-time audio processing and visualization systems.
- Designed and validated spectral classifiers for 12 instrument classes with >70% accuracy in Python.
- Deployed classifier to FPGA hardware (Xilinx).

Research Intern — Cross Labs (*Kyoto, Japan*)

Jun 2023 – Sep 2023

- Developed LLM-based translator for human-robot collaboration.
- Delivered R&D feasibility reports to industry clients on novel communication interfaces.
- Presented findings at Artificial Life and Robotics conference.

Team Member — UCLA IEEE Micromouse Project

Sep 2022 – Jun 2023

- Built autonomous robotic maze-solving platform with custom PCB and IR sensors.
- Implemented flood-fill algorithms and embedded firmware.

LEADERSHIP & SERVICE

- **Managing Editor, Undergraduate Science Journal @ UCLA** — Reviewed an average of 20+ research submissions per quarter across engineering and sciences, managing a team of 25 staff reviewers. *Dec 2022 – Present*
- **Events Director/Advisor, ACM AI @ UCLA** — Organized networking and technical events for AI community, including outreach workshops, research fairs and industry talks with some drawing 300+ attendees per event. *Jan 2023 – Present*
- **Mentor, IEEE Student Branch** — Volunteer tutor in circuits, embedded systems, and ML. Helped organize annual hackathon. Presented at outreach tabling events at campus STEM events, local grade schools, and TedX events. *Sep 2023 – Present*
- **Clarinet Player** — Member of the UCLA Solid Gold Sound Marching Band, performed at every home game during football season. *Sep 2022 - Present*

SKILLS

- **Software:** Python, PyTorch, TensorFlow, C/C++, MATLAB, SystemVerilog, Logisim, Spice, Linux, Git, Hugging Face, CUDA, WandB
- **Hardware:** STM32, Jetson Nano, Raspberry Pi, Arduino, soldering, PCB design (Eagle CAD), oscilloscope/multimeter
- **Methodologies:** Signal processing, time-series forecasting, deep learning, state-space modeling, embedded systems

AWARDS

- 2025-2026 Kalosworks Scholarship
- 2025-2026 John DeGroff Haller Memorial Fund
- 2022-2025 Dean's Honors List
- 3rd Place, IEEE Solid State Circuits Society Arduino Contest (2023)
- 5th Place, All America Micromouse Competition (2023)
- 3rd Place, UCLA-UCR Research Symposium (2022)

SELECTED PROJECTS

- **Spectral Forecasting Framework**: Unified pipeline for analyzing predictability (Ω, entropy) vs model performance.
- **Edge AI Sensor System**: Low-cost FPGA deployment of audio classifiers.
- **Arduino Instrument**: Keyboard used to teach binary encoding schemes.
- **Autonomous Micromouse Robot**: Designed and implemented PCB and embedded algorithms for maze-solving robot.