Sourish Saswade

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EDUCATION

University of California, Los Angeles (UCLA) **Expected June 2026**

- **Computer Engineering, B.S.**
- Fast Track ECE Honors Program, Dean's List 2023
- **Relevant Coursework:** Operating Systems, Distributed Systems, Parallel/Distributed Computing, Advanced GPU Microarchitecture (Graduate-level), Computer Architecture, Computer Networks, Deep Learning, Digital Signal Processing, Analog Circuits, Digital Circuits, Communication Systems
- **Technical Breadth:** Computer Science

SKILLS

- **Technical Languages**: **C++, C, Python, Go, Rust**, Java, HTML/CSS, Javascript, x86-64 Assembly, MATLAB, SystemVerilog, SQL
- **Tools:** Git, PyTorch, CUDA, Sklearn, Pandas, OpenMP, MPI, Vitis HLS (C++), Vim/Emacs, Linux, Shell Scripting, Jupyter Notebooks, Xcode, Docker, React, Node, Express, MongoDB, PostgreSQL, Firebase, Postman, RESTful API, Cadence Virtuoso
- **Languages**: **Marathi** (100% Proficiency), **Spanish** (50% Proficiency)

EXPERIENCE

Software Engineering Intern | *Apple (Cloud Compute)* June '25 – Sept.'25

- Designed and implemented a benchmarking & performance service (Go, Python) for a large-scale internal batch compute platform
  - Crafted SQL queries to efficiently fetch benchmarking results data from remote PostgreSQL database
  - Updated existing Docker environment to support benchmarking tooling, debugged distributed service with Splunk log analysis
- Created baseline performance data for representative workloads to compare with observed performance in a production environment
- Analyzed change in benchmark data (total execution time & average power consumption) over time on the same node to gain insights on effects of new software/hardware changes on VM performance on x86 servers and to drive decision-making on these changes

Software Engineering Intern | *Apple (Core OS)* June '24 – Sept.'24

- Wrote kernel software (C++) for host-side Apple Silicon drivers for PCIE, a high-speed, low-latency data transfer protocol
- Implemented Inter-Host Communication as part of IO Sharing in a Multi-Host PCIE topology
  - Tested memory operation performance (read, write, gathered write) across a PCIE switch connecting two hosts
  - Added fault tolerance mechanisms (switch reset, error injections) to enhance robustness of the IO Sharing
- Developed a new software debugging framework to track kernel events leading to system crash to maximize error reproducibility
  - Ideated a reliable, lightweight design with low CPU overhead to minimize time spent in PCIE debugging process

Software Engineering Intern | *Human-Centered Computing & Intelligent-Sensing Lab @ UCLA* June '23 – Sept.'23

- Built end-to-end system to analyze urban road conditions with machine learning and sensor fusion via electric scooters
  - Collected data via Android app (Java) on e-scooter, pipelined through Firebase cloud database (7000+ total data points)
  - Trained 3 neural networks (CNN) and a Random Forest model (Python/PyTorch) on data to classify road quality & type
- Achieved road classification accuracies of 88% (image data), 68% (audio), 53% (acceleration time-series)

PROJECTS

DeepCool – UCLA IdeaHacks 2024 (1st Place) | MongoDB, Express, React, Node, Python | DevPost January '24

- Minimizes food waste by monitoring your fridge's contents & recommending real-time recipes that prioritize expiring items
- Classified food items in fridge via CNN and transfer learning w/ input data from Raspberry Pi + Camera feed, stored in MongoDB
- Developed website (MERN-stack) with real-time feed of user's fridge and automatic recipe generation via external API

SafeScoot – UCLA IdeaHacks 2023 | Python, C++ | DevPost January '23

- Improves e-scooter user safety by producing a "safety score" by comparing user's path to destination to the safest path, led team of 5
- Employed Overpass API to find safest path's coordinates, used GPS w/ ESP-32 microcontroller to record user's path in Firebase DB

Real-Time Language Translator | C November '22

- Implemented neural network in C to create hand-worn device that recognizes the character drawn, translates to English letter
- Used STM-32 microcontroller & STM SensorTile equipped with accelerometer & gyroscope to classify hand strokes as letters

INVOLVEMENT

Academic Mentor | Intro to IoT/Machine Learning (Engineering 96i) @ *UCLA* Sept. '23 – Dec '23
President | *First Robotics Competition (FRC) Team #2854* March '21 – April '22