Harris Song

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🎓 Education

B.S. Computer Science, *Concentration in Business* **June 2027**
University of California, Los Angeles (UCLA) **3.82 GPA**
Coursework and Activities: LA Hacks Marketing/Data Director, Agile/Scrum, Jira, Confluence, CAD, FEA Analysis
C++, JavaScript, Golang, AWS, MongoDB, PostgresSQL, Networking/IP/TCP, Distributed Systems, Data Structures/Mining, Unix
Skills and Interests: PLO/Texas Holdem/Euchre/*Sheng Ji*, Skiing, Badminton, Scuba Diving, Combat Robotics

🏛 Experience

LA Hacks, UCLA, CA: *Marketing and Data Director* **Sep 2024 - Present**
- Aggregating 📷 f 🐦 marketing retention stats with internal application data; Check it out at *data.lahacks.com*!
- Wrote in previous **Golang** Backend, integrated with **Python Flask** and **TCP/IP Networked DigitalOcean** Server
- Deployed with CI/CD on **Docker and PostgreSQL**, upgrading to **React/Next.js** and OAuth2 for data security

Bruin Capital Management, UCLA, CA: *Investment Analyst, FinTech Sector Head* **Jan 2025 - Mar 2025**
- **Managed a team of five analysts** to conduct research on SoFi, focusing on financial services, estate products
- Analyzed real estate-related (e.g., mortgages, home loans) to evaluate portfolio risk, geographic exposure
- Created pitch materials and forecasted upside via DCF and public comps; recommended BUY with 51% upside

Leidos, Washington, DC: *Software Engineering Intern* **Sep 2024 - Dec 2024**
- Worked on *Sea Archer*, a lightweight implementation of *Sea Hunter* that has already circumnavigated the world
- Converted server-grade **Kubernetes** DevOps to a light-weight **Docker, RHEL/Rocky 8**, enabling autonomous startup/stop
- Debugged **Ansible Playbooks** and **System C++ Architecture**, reducing GUI simulation, built on NVIDIA-like edge hardware

BANSHEE UAV (Lockhead Martin), Cal Poly Pomona, CA: *Embedded Systems Researcher* **Aug 2022 - May 2024**
- Published Journal Paper on wireless communication, experience with & Hardware/Software In the Loop (HIL/SIL) systems
- Worked w/ Dr. Yu & MIT Engineer Lai to develop **VTOL, UAV** software for custom flight computer-vision autonomy stack
- Developed with the **Pixhwak, NVIDIA Jetson Nano, Arduino C** for flight-test validation, circuit design and landing automation

Office of Naval Research (US Navy), Crane, IN: *Software Engineering Intern* **Jun 2023 - Aug 2023**
- Developed vision-based systems on UGVs for IEDs found in the Iraq War w/ zero-shot YOLOv8 object detection

📂 Activites/Projects

Kalshi/Polymarket Algorithm-based Retail Trading, Los Angeles, CA: *Software Engineer* **Jul 2025 - Present**
- Built infrastructure for Kalshi, Polymarket events contracts trading; Check it out at *harris-song.github.io/ect*
- Developed on **Python, FastAPI, PostgreSQL** w/ Async Batching API calls, optimized for external API rate limits
- Developed RESTful APIs, Used **OpenAI Structured Outputs**/Prompt Engineering for market similarity analysis

UCLA Events, UCLA, CA: *Software Engineer* **Jan 2025 - Mar 2025**
- Built an event management platform with **Next.js 13+**, **Prisma ORM**, and **PostgreSQL (Neon)**, posting nearby UCLA events
- Implemented features including event creation, RSVP tracking, iCal generation, and social sharing using microservices
- Developed protected API routes and responsive UI with **Tailwind CSS** and **Lucide React** icons, setup Clerk middleware/auth

FIRST Robotics, Los Angeles, CA: *Team Captain and Mentor* **Aug 2019 - May 2023**
- Led 10-member team to scope and deliver software, mechanical, and electrical subsystems on time
- **1st in the Nation (of 7000+) teams** *twice in 2021, 2023*, built reliable software to win the World Champs

📖 Selected Publications

1. **Avi: A 3D Vision-Language Action Model Architecture generating Action from Volumetric Inference**
   Harris Song, Long Le | ***NeurIPS 2025*** - *Embodied World Models for Decision Making, 2025* | *Project Website*, *PDF*

2. **Reconstruction Using the Invisible: Intuition from NIR and Metadata for Enhanced 3D Gaussian Splatting**
   Gyusam Chang, Tuan-Anh Vu, Vivek Alumootil, **Harris Song**, Deanna Pham, Sangpil Kim, M. Khalid Jawed
   CVPR 2025 - *2nd Workshop on Neural Fields Beyond Conventional Cameras* | *Conference Website*, *PDF*