Ali Sao

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EDUCATION

University of California, Irvine **June 2027**

B.S in Computer Engineering

- *Relevant Coursework: Data Structure and Algorithm, Operating System, Computer Networks, Software Engineering, Databases, AI/ML*

Technical Skills

Programming Languages: *C/C++, Python, JavaScript/TypeScript, Java, Go, SQL, HTML/CSS, Bash*

Frameworks/Tools: *React, Next.js, Node.js, Express.js, FastAPI, Tailwind, Docker, Kubernetes, NGINX, PostgreSQL, AWS, Git/GitHub*

Experience

Full Stack Software Engineering Intern **Irvine, CA**

Panasonic Avionics Corporation *06/25 - 09/05/2025*

- **Built the first fault export tool for aircraft LRUs** using JavaScript/CSS, giving technicians a one-click way to pull reports straight off live airplane racks.
- **Wrote backend APIs in Node.js and C++** to pull, format, and deliver fault data; used daily across multiple airline fleets.
- Translated low-level C++ data into JSON and wired it into the frontend so logs always showed up clean and exportable.
- **Optimized** fault export workflows by profiling and refactoring C++ parsing logic, **cutting average report generation time by 40% and improving technician turnaround during live maintenance**.

Undergraduate Research Assistance Software Engineer **Irvine, CA**

Wayne Hayes Lab, UCI *01/25 - Present*

- **Launched a web interface for SANA (C++ network aligner)** with React/TypeScript + Express/Supabase, cutting researcher setup from **hours in CLI to minutes in browser.**
- Built **REST APIs** connecting **React calls to compute-heavy C++ jobs,** letting global users run alignment jobs and see results (EC, S^3) without touching code.
- Deployed on Ubuntu servers with **Docker + NGINX + CI/CD**, making the system stable enough to handle constant heavy jobs.
- Cut researcher error-tracking overhead by 60% by adding UI visualizations, error messages, and monitoring.

Technical DIrector **Irvine, CA**

Engineering Student Council (ESC) *05/23 - 04/25*

- Founded and led the **first Tech Team** (5 developers), building systems now used by **3,000+ students and 500+ faculty**.
- Built a room booking platform from scratch in **Next.js/TypeScript/Tailwind** with a custom calendar (no libraries), replacing scattered manual sign-ups.
- Added **Firebase OAuth** so only engineering students could book; backend logic prevented double-bookings.
- Taught underclassmen frontend practices and Git workflows; left a team that can maintain the platform after I graduated.

Projects

Financial Integrity Platform – U.S. Senator Transparency Dashboard

Skills: Go, Node.js, REST APIs, PostgreSQL, React, Data Visualization, Security

- Started a platform to track senator finances, making FEC data clear to the public.
- Built a **Go + Node.js API** with PostgreSQL to store and serve disclosures; automated ingestion of OpenFEC data, cutting processing from **days to minutes**.
- Frontend in React visualized spending patterns; designed for scale and reliability.

Lost in Translation – Subtitle Alignment & Analysis Platform

Skills: C++, AI/ML (embeddings, NLP), JavaScript (React, Next.js), Node.js, Data Processing

- Wrote a **C++ pipeline** to parse and align Japanese ↔ English subtitles, surfacing where meaning diverged.
- Added AI modules that flagged tone/emotion shifts (e.g., polite vs blunt) so researchers could see how translation changes impact audience experience.

High Frequency Trading (HFT) System — UCI Senior Design Project

Skills: C++, FPGA (Verilog/VHDL), React, Node.js, Low-Latency Systems

- **Engineered** UCI's first student-led HFT platform, combining FPGA hardware acceleration with C++ backend logic to simulate industry-grade order execution.
- implemented a matching engine on FPGA for nanosecond-level trade processing, then integrated with C++ services to handle order books and risk checks.
- Developed a React frontend with live market visualizations, allowing real-time monitoring of trade flows, spreads, and latency.