

# Jack Dao

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## EDUCATION

### University of California, Santa Cruz

Expected: June 2027

*Bachelor of Science in Computer Science*

*Santa Cruz, CA*

**Relevant Coursework:** Data Structures & Algorithms, Computer Systems & Design, Distributed Systems, Computer Architecture, Database Systems, Full Stack Web Development, Computer Networking, Machine Learning

## TECHNICAL SKILLS

**Languages:** JavaScript/TypeScript, HTML/CSS, SQL, Python, C, C++, C#

**Frameworks & Libraries:** Jest, React, Angular, Node.js/Express, Firebase, NgRx, RxJS, Socket.IO, Elasticsearch

**Databases & Platforms:** PostgreSQL, Docker, Git, Linux, Heroku

## EXPERIENCE

### Software Engineer Intern

*Wilmers Lab, UC Santa Cruz*

September 2025 – Present

*Santa Cruz, CA*

- Built Python GUI for schedule setup, start/stop, and CSV log export for a wildlife predator-deterrence speaker.
- Implemented UART/Bluetooth command-response in C (ACK/timeout, retries) to cut command failures by 30%.
- Delivered CSV logs and faster workflows, enabling 4+ researchers to run 10-15 weekly experiments.
- Added schedule import/export with validation and overlap checks to prevent invalid runs and operator errors.

### Software Engineer Intern

June 2025 – September 2025

*Remote*

*Knobull*

- Built real-time mentor chat app (React, Node/Express, Socket.IO, PostgreSQL) serving 1,000+ students.
- Modernized the React UI with responsive layouts and accessibility fixes, boosting cross-device usability.
- Scaled an Elasticsearch academic search engine to 5M+ sources with ad/SEO filtering, serving 5,000+ searches.
- Integrated Stripe checkout and Firebase Authentication for subscriptions and cross-device SSO.

### Full Stack Web Developer

March 2025 – September 2025

*Santa Cruz, CA*

*Tech4Good Lab, UC Santa Cruz*

- Built a student onboarding app in Angular with TypeScript and NgRx, cutting onboarding time 40% for 30+ users.
- Developed a task manager app on Firebase with Angular and NgRx to organize tasks and deadlines.
- Implemented NgRx Store/Effects with optimistic updates, caching, and error handling, improving UI stability.
- Implemented Firebase Authorization and Firestore security rules for role-based access and per-user data isolation.

## PROJECTS

### Multi-Threaded HTTP Server | C

September 2025 – November 2025

- Built a multi-threaded HTTP/1.1 server supporting GET and PUT with correct status handling.
- Implemented a thread-safe request queue to manage concurrent clients with bounded processing.
- Used semaphores for synchronization; stabilized via stress tests and targeted optimizations.

### SlothLab: Game AI | Unity (C#), Python, PCG, LLM APIs

Apr 2025 – Jun 2025

- Developed a Unity tutorial generator with LLM APIs to auto-create step-by-step instructions and hints.
- Implemented box-split grammar and heuristics for procedural terrain and settlements in the pipeline.
- Prototyped Python PCG (backtracking, heuristics, agent rules), increasing generation diversity by 20%.

### SluGarbage: Google DSC Club Solution Challenge | Flutter, Firebase

Jan 2024 – Mar 2024

- Built a cross-platform waste-sorting app with a Firebase backend; onboarded 150+ users and cataloged 250+ items.
- Implemented Firebase Authentication and Firestore/Storage with security rules and offline caching.
- Integrated Google Maps SDK to surface 60+ drop-off sites, driving 500+ lookups and 60+ visits.