

Jimbo Cai

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EDUCATION

University of California San Diego

La Jolla, CA

Bachelor of Science in Data Science (GPA: 3.79/4.0)

Sep. 2024 – Jun. 2028

- **Relevant Coursework:** Data Structures & Algorithms, Data Management, Probability Theory, Statistical Inference Hypothesis Testing, Data Visualization, Foundations of Machine Learning, Graph Theory, Scalable Analytics Systems.

SKILLS

Frameworks & Libraries: React, FastAPI, Express.js, Firebase, pandas, NumPy, Matplotlib, SciPy, Scikit-learn, ruptures, Plotly, Chart.js, D3.js, Tailwind CSS, Web3

Databases & Cloud: MongoDB Atlas, PostgreSQL, MySQL, Firebase Auth, Vercel, Render, Railway

ML & Data: HDBSCAN, PCA, LDA, Hypothesis Testing, Bootstrap Resampling, Monte Carlo Simulation, Changepoint Detection, Jupyter Notebook

Developer Tools: Git, GitHub, REST APIs, OAuth 2.0 / JWT, VS Code, Claude Code, Alchemy API, Vite, Arduino C++

EXPERIENCE

Campus Ambassador

Oct. 2026 – Present

Intern Insider Technologies Inc.

San Diego, CA

- Promote **Intern Insider**, an internship discovery platform, to university students through campus marketing campaigns, poster distribution, and direct outreach to increase brand awareness and student engagement.
- Engage with student organizations, campus clubs, and career services to introduce internship resources, explore promotional opportunities, and expand the platform's visibility across the university community.

Crew Member

Jun. 2022 – Dec. 2022

McDonald's Canada

Richmond, Canada

- Handled drive-thru and front-counter orders in a fast-paced environment, communicating with customers and coordinating with team members to ensure accurate order processing, service, and a positive customer experience.

Research Assistant

Nov. 2024 – Jun. 2025

Nanomaterials & Nanomedicine Laboratory (Dr. Liangfang Zhang), UC San Diego

La Jolla, CA

- Quantified protein expression across **150+** Western blot samples using ImageJ-based image analysis, generating structured datasets for downstream statistical comparison.

PROJECTS

Rubik's Cube Solve Time Analyzer (SolveStats)

- Built a full-stack speedcubing analytics platform (**React, FastAPI, MongoDB**) that parses a **4,999-solve** CSV/csTimer export in **142 ms** into **5** interactive **Chart.js** visualizations.
- Engineered a **SciPy/NumPy** statistics engine with **5** resampling simulations (**10,000** trials each), PELT changepoint detection, and Welch's t-test; WCA placement simulations return in **139 ms** median.
- Shipped **8** account/session endpoints (**7** **Firebase**-authenticated) on **MongoDB Atlas** for multi-device sync and public profiles, integrating the live **WCA API**; deployed on **Vercel** and **Render**.

Phone Jail Cell Build Project (LockedIn)

- Built a phone-lockbox focus tool pairing a **React/TypeScript** web app with **ESP32 Arduino C++** firmware, exposing **4 HTTP endpoints** to start, pause, stop, and report lock state.
- Wrote firmware syncing the device countdown with the web app via **2-second** status polling, mirroring the timer live on an **I²C LCD** and releasing the lock at zero.
- Drove a **12V solenoid lock** from **3.3V ESP32 GPIO** through a relay circuit; housed the electronics in a **3D-printed and laser-cut enclosure**.

Real-Time Japanese Reading Assistant (Mirume)

- Built a macOS overlay in **Tauri/Rust, React/TypeScript**, and **FastAPI** that reads Japanese under the cursor and grades each word by JLPT level against **274k+** dictionary entries and **232k+** example sentences.
- Read text with the macOS Accessibility API at **4.3 ms** median latency, falling back to Apple Vision OCR at **520 ms** median, which reached **99.4% character accuracy** on **72** light/dark, multi-size test images.
- Cached DeepL translations, cutting repeat lookups from **303 ms** to under **10 μ s**, and served **18 REST endpoints** for SM-2 spaced-repetition review.