

Aaron Chu

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EDUCATION

Rutgers University

May 2028

BS Computer Engineering

New Brunswick, NJ

- **Coursework:** Software Engineering, Data Structures, **Distributed Deep Learning**, Computer Architecture, Discrete Mathematics, Probability & Random Processes

EXPERIENCE

Magnefy

June 2026 – Aug. 2026

Software Engineering Intern

Palo Alto, CA

- Designed and built a scalable alerting pipeline in **Python** routing signals from multiple anomaly-detection modules through a dedupe stage to **PostgreSQL** and automated **AWS SES** email delivery, using stable alert IDs so reprocessing never spams operators; validated with **pytest** across the pipeline
- Automated notification triggers into the core data pipeline, then extended a **Streamlit** operator dashboard with dedicated analysis and alerting views for a faster, code-free path from raw signal to actionable alert
- Applied domain-specific reliability methodology to build a device health-scoring module in Python, adding dashboard visualizations of asset health trends over time
- Designed a 4-sensor time-difference-of-arrival localization approach (coarse grid initialization + Gauss–Newton/Levenberg–Marquardt optimization) with RMS and geometry-conditioning checks, and presented the architecture and prerequisites for future multi-sensor fault localization

University Nanosatellite Program

Sept. 2025 – Present

Systems Integration Engineer

New Brunswick, NJ

- Designed and built distributed **Python** data services on **Linux/Raspberry Pi** with **multithreaded** polling, timestamped logging, and structured sensor ingestion pipelines
- Developed integration tests and diagnostic tooling for hardware interfaces, analyzing failure cases to improve reliability of multi-sensor data collection on embedded systems
- Automated requirement-based verification scripts for synchronized collection and scheduled experiment workflows across distributed onboard services

Integem

June 2025 – Aug. 2025

Drone Support Intern

Cupertino, CA

- Developed and tested **Python** firmware for **ESP32** platforms, writing scripted integration workflows to validate control loops and sensor bring-up
- Integrated computer vision modules (**AprilTag**, optical flow) into an embedded navigation stack, applying algorithmic tradeoffs to enable autonomous flight features
- Built a scalable **IoT** telemetry pipeline streaming GPS/weather data over **Helium** to **InfluxDB/Grafana** for a high-altitude flight experiment

PROJECTS

PocketLab

- Built full-stack **IoT** lab platform (team of 4): **React/TypeScript** frontend, **WebSocket** backend, and **ESP32** edge devices for real-time experiment control
- Implemented real-time data pipelines with **Recharts/Three.js**, auth, offline fallback, and export APIs for classroom deployment

VeriStudent

- Built marketplace app with **React/Expo**, **TypeScript**, and **Supabase Postgres**; **Google OAuth**, normalized schema, and secure **REST APIs** for listings
- Integrated Auth, Storage, and Realtime chat; deployed web app to **Vercel** with **CI/CD** via **GitHub Actions**

SKILLS

Languages: Python, Java, TypeScript, JavaScript, C, SQL, HTML/CSS

Frameworks: React, FastAPI, Node.js, Expo, Supabase, PostgreSQL, Pandas, NumPy, Docker, AWS

ML/AI & Tools: PyTorch, TensorFlow, scikit-learn, XGBoost, pytest, Streamlit, Pydantic, Git, Linux