Issac Roy

U.S. Citizen, San Diego, CA

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Education

University of California San Diego (3.98 GPA) **March 2027**

B.S. Data Science | *Math Minor* | *Cognitive Science Minor* *San Diego, CA*

Courses: Data Structures, Computer Vision, Systems Programming, Computer Organization, Database Management

Experience

Neurocrine Biosciences | *Software Engineer Intern (Data Infrastructure)* **June 2025 – September 2025**

- Architected, deployed, and maintained a serverless application on AWS (ECS, Lambda) to automate data ingestion, decoupling system components and reducing operational costs by $200k annually.
- Engineered a production backend pipeline using Python and AWS Bedrock, integrating LLM endpoints with relational databases (Redshift) to automate complex document generation.
- Implemented Infrastructure as Code (IaC) using Terraform and built multi-environment CI/CD pipelines, enforcing DevOps best practices and reducing deployment latency.

San Diego County Taxpayers Association | *Technical Intern* **October 2024 – January 2025**

- Developed a robust data ingestion pipeline using Playwright (Python) to harvest data from dynamic web pages, engineering solutions for rate-limiting and edge cases.
- Developed a high-performance frontend dashboard using Plotly Dash (React-based), implementing client-side caching and callback optimization to render large-scale datasets with sub-second latency to inform policy recommendations.

Projects

Turbo 3D Engine | *C++, SDL2, Linear Algebra* **March 2025**

- Built a 3D graphics engine from scratch in C++, implementing a custom rasterization pipeline, matrix transformations for camera space, texture mapping, and lighting without external graphics libraries.
- Optimized rendering performance through manual memory management and efficient vertex processing algorithms and a custom linear algebra library.
- Wrote an OBJ file parser to load and render 3D models from file, implementing a custom material system, texture mapping, and multiple lighting models for realistic rendering.

Project Daedalus (Avionics System) | *C++, OpenRocket, Arduino* **October 2025 – Present**

- Engineering the avionics package for a G-class rocket, programming an Arduino in C++ to interface with IMU, GPS, and sensor array via I2C for telemetry and high-frequency flight logging.
- Designed a custom 3D-printed fairing to protect electronics under high-G launch loads and integrated a custom PCB for sensor isolation and power management for safe operation.

Leadership

AWS Cloud Club at UCSD | *Founder & VP Technical* **November 2025 – Present**

- Established UCSD's official AWS affiliate organization, fostering a technical community focused on upskilling students in cloud computing, serverless architecture, and industry best practices.
- Curating and leading technical workshops on core AWS services (S3, Lambda, SageMaker), equipping 200+ members with the practical skills to build and deploy scalable cloud infrastructure.

Data Science Student Society (DS3) | *Director of Software* **October 2024 – Present**

- Directing a team of 10+ engineers to build full-stack web applications for a 1,000+ member community, enforcing Agile workflows and CI/CD standards through Github Actions.
- Architected the backend for the centralized membership portal, implementing secure authentication flows and managing complex SQL database schemas on Supabase/Postgres.

Technical Skills

Languages: C++, C, C#, Python, Java, SQL, React, Bash, JavaScript, HTML/CSS
Embedded & Systems: Raspberry Pi, Arduino, I2C/SPI, Linux, SDL2, Make, GCC
Tools: AWS, Terraform, Docker, Git, CI/CD, Postgres, MongoDB, Jira, Confluence
Certifications: AWS Cloud Practitioner, AWS AI Practitioner, AWS Solutions Architect Associate
Hobbies: 3D Printing, Robotics, Guitar, Rubik's Cube (PB: 26.50s), Pool (Tracked every shot for 700+ games)