




ISSAC ROY


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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

Relevant Coursework: Data Structures, Systems Programming, Database Management Systems, Web Development

Experience

Neurocrine Biosciences | *Software Engineer Intern (Data Infrastructure)*

June 2025 – September 2025

- Architected, deployed, and maintained a serverless event-driven microservice on AWS (ECS, Lambda) to automate data ingestion streams, optimizing system throughput and reducing annual OpEx by \$200k.
- Built a production-grade backend API using Python and AWS Bedrock, integrating Generative AI endpoints with a Redshift data warehouse to programmatically generate complex study narratives.
- Implemented Infrastructure as Code (IaC) using Terraform to deploy multi-environment CI/CD pipelines, reducing deployment latency and enforcing immutable infrastructure patterns.

San Diego County Taxpayers Association | *Technical Intern*

October 2024 – January 2025

- Developed a distributed data ingestion pipeline using Playwright, implementing concurrency controls and proxy rotation to harvest data from dynamic web applications.
- Engineered a high-performance dashboard using React-based libraries, implementing client-side caching and callback optimization to render large-scale datasets with sub-second latency.

Projects

DS3 Internal Membership Portal | *React, TypeScript, Supabase, Postgres*

July 2025 – Present

- Architected a centralized membership and admin portals for a 1,000+ member organization, replacing legacy spreadsheet workflows with a secure, responsive web application.
- Implemented complex security policies using Row Level Security (RLS) and Role-Based Access Control (RBAC) in Postgres to secure sensitive user data.
- Designed a normalized database schema and wrote performant SQL queries to handle member tracking, event attendance, and analytics.

Neural Nector | *React, TypeScript, PyTorch, Python, FastAPI, Postgres*

December 2025

- Developed a full-stack web application serving 100+ users, featuring a React frontend and a RESTful FastAPI backend deployed on cloud infrastructure to challenge users to distinguish between real and GAN-generated flower images.
- Optimized API performance for real-time model inference, managing asynchronous tasks and database transactions to track user game states and leaderboards.

OnlyDance | *React Three Fiber, TypeScript, Python, OpenCV, MediaPipe, FastAPI*

April 2025

- Won 1st place at DataHacks 2025 (50+ teams) by building an interactive 3D web app that provides real-time motion feedback using browser-based computer vision with MediaPipe.
- Engineered a low-latency feedback loop, processing video frames in the browser and rendering 3D avatars at 60 FPS using React Three Fiber.

YipYap Chat Application | *React, TypeScript, MongoDB, WebSockets*

August 2024

- Architected a real-time messaging application using Socket.IO for bi-directional event-based communication and Express.js for RESTful API endpoints.
- Implemented JWT authentication for secure session management and designed a MongoDB schema to efficiently store chat history and user relationships.

Leadership

AWS Cloud Club at UCSD | *Founder & VP Technical*

November 2025 – Present

- Established UCSD's official AWS affiliate organization, leading workshops on Serverless Architecture, Containers, and CI/CD to upskill 200+ students in modern cloud practices.

Data Science Student Society (DS3) | *Director of Software*

October 2024 – Present

- Directing a team of 10+ engineers to deliver full-stack web solutions to organizations on campus, reviewing code (PRs) and enforcing Agile workflows (Jira, Sprints) to ensure production-quality releases.

Technical Skills

Languages: TypeScript, Python, SQL, C++, Java, Bash

Certifications: AWS Cloud Practitioner, AWS AI Practitioner, AWS Solutions Architect Associate

Tools: AWS, PostgreSQL, MongoDB, Docker, Terraform, CI/CD, Git, Jira, Confluence

Web Development: React, Node.js, Express.js, FastAPI, Next.js, Tailwind CSS