




# 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*

## Experience

**UCSD Computer Vision Lab | Research Assistant**

**January 2026 – Present**

- Developing a generative 3D pipeline that enhances coarse geometry by integrating Blender-based synthetic rendering with Latent Diffusion Models (Flux/Stable Diffusion) to synthesize high-fidelity details.
- Implementing inverse rendering algorithms to decompose generated imagery into physically based rendering (PBR) textures (Albedo, Depth, Roughness) for automated 3D asset reconstruction.

**Neurocrine Biosciences | Data Engineer Intern**

**June 2025 – September 2025**

- Architected a containerized web scraper on AWS ECS and Lambda to automate competitive intelligence data gathering, eliminating dependency on third-party vendors and saving \$200k in annual OpEx.
- Developed an AI-driven data pipeline with AWS Bedrock to convert raw patient data into study-specific narratives, streamlining reporting and decision-making for study teams.
- Implemented DevOps workflows using Terraform (IaC), AWS Lambda, and multi-env CI/CD pipelines, collaborating with Jira and Confluence to directly support the Clinical Solution team's mission to enhance monitoring of clinical trials.

**San Diego County Taxpayers Association (SDCTA) | Data Science Intern**

**October 2024 – January 2025**

- Built an NLP-driven policy analysis pipeline, utilizing Playwright for data scraping and Hugging Face Transformers for sentiment analysis, supporting evidence-based recommendations for policymakers.
- Designed interactive visualizations using Python (Pandas, Plotly Dash) to communicate complex fiscal data to non-technical stakeholders, increasing transparency on municipal spending trends.

## Leadership

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

**October 2024 – Present**

- Managing a 10+ person engineering team to architect a centralized data platform for a 2,000+ member organization, aggregating siloed metrics (attendance, sales) to drive data-driven operational strategy.
- Designed and taught technical workshops on Git/GitHub to 50+ students, achieving a statistically significant confidence increase (+52%,  $d = 1.26$ ,  $p < 0.001$ ) and preparing members for industry-standard workflows.

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

**November 2025 – Present**

- Established UCSD's official AWS affiliate organization; designing and leading technical workshops on MLOps (Git, AWS, Docker, Terraform) to equip 200+ students with the practical skills to build and deploy scalable data and ML solutions.

## Projects

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

**December 2025**

- Trained a Generative Adversarial Network (GAN) to synthesize realistic flower images, achieving a FID score of 50.
- Built an interactive, full-stack web app challenging users to distinguish between real and GAN-generated flower images, engaging 100+ unique users.

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

**April 2025**

- Won 1st place at DataHacks 2025 against 50+ teams by developing an interactive full-stack app that teaches dance routines using 3D avatars and real-time feedback.
- Engineered a real-time similarity scoring algorithm using MediaPipe to extract 3D pose landmarks, implementing sliding window techniques and frame interpolation to quantify dance accuracy.

**Predicting Power Outage Severities | Python, Scikit-Learn, Pandas, Folium**

**December 2024**

- Created an ML pipeline to predict power outage severities across the U.S. with 78% accuracy, performing data cleaning, EDA, hypothesis testing, feature engineering, and fairness evaluations across states.

**Self Playing Guitar | Arduino, CAD, Laser Cutting, 3D Printing**

**December 2023**

- Won 1st place at IEEE's Fall Competition against 30+ teams by engineering a self-playing guitar with custom laser-cut and 3D printed parts, programming a note transcriber algorithm to map musical inputs to precise servo motions.

## Skills

**Languages:** Python, SQL, R, React, TypeScript, Java, C++

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

**Tools:** AWS, Git, MongoDB, Jira, Confluence, Terraform, PyTorch, SKLearn, Docker, Linux, Apache Spark, Selenium

**Hobbies:** 3D Printing, Robotics, Guitar, Rubik's Cube (PB: 26.50s), Pool (Tracked every shot for 700+ games)