

ISSAC ROY

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Education

University of California San Diego (4.0 GPA)

June 2027

B.S. Data Science | Math Minor | Cognitive Science Minor

San Diego, CA

Projects

OnlyDance | OpenCV, ModelPipe, React, React Three Fiber, TypeScript, Python, FastAPI

April 2025

- Won **1st place** (Advanced Track) 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 system using joint weighting, frame interpolation, and sliding window techniques for robust pose matching with cosine similarity.
- Captured and normalized user pose data with OpenCV and ModelPipe, ensuring fairness across diverse body types.
- Designed an intuitive, progressive learning experience to boost user confidence.

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

April 2025

- Developed an end-to-end ML pipeline to predict power outage severities using data from Purdue's LASCI Labs.
- Created insightful geospatial visualizations with Folium to communicate key findings effectively.
- Performed data cleaning, exploratory data analysis, hypothesis testing, and feature engineering from temporal and categorical attributes.
- Built and tuned Random Forest models, achieving 78% test accuracy; conducted fairness evaluations using permutation tests and bias analysis across U.S. states.

YipYap, the Chat App for Yappers | React, MongoDB, Express, SocketIO, TypeScript, Figma

August 2024

- Developed and deployed a full-stack chat application enabling real-time communication through SocketIO with a MongoDB and Express.js backend.
- Designed user interfaces in Figma, built RESTful APIs, and integrated Minstral AI models for intelligent conversation suggestions, enhancing user engagement.
- Expanded skills in backend architecture, database management, authentication, UI/UX design, and large-scale system development and deployment.

Experience

Neurocrine Biosciences | Analytics Engineer, Clinical Solutions Intern

June 2025 – Present

- Creating monitoring and review metrics/reports for clinical sites in our ongoing studies.
- Operationalizing study-specific AI agent/knowledge bases off our data repository to support study teams.
- Optimizing data pipeline processing and analytical database queries, improving insight delivery timelines.

Data Science Student Society (DS3) | Director of Software

October 2024 – Present

- Leading the design, development, and deployment of new websites for UCSD clubs, enhancing campus tech initiatives.
- Boosted productivity by introducing Agile methods, streamlining sprint planning, and improving deliverable quality.
- Led technical workshops on web development and Git fundamentals, empowering new members with essential development skills.

San Diego Taxpayer's Association | Data Science Intern

October 2024 – January 2025

- Built social media scraper to collect public sentiment data on county policies, contributing to a sentiment analysis tool for taxpayers and policymakers.
- Collaborated with policy researchers to define sentiment analysis objectives, aligning technical deliverables with real-world policy impact and public communication goals.

Leadership / Extracurricular

SANDY Youth Group | President | San Diego Malayalee Association (SANMA)

Summer 2024 – Present

- Elected President of a 30-member youth group, organizing monthly activities and community volunteering efforts.
- Collaborating weekly with San Diego Malayalee Association leaders to plan and organize events.

FIRST Robotics | Software Lead | Westview High School

Fall 2020 – Spring 2023

- Led a small team to program autonomous tasks for FIRST Robotics, improving efficiency by 10x over the season.
- Completed over 100 hours of mentoring, contributing to the team's Regional Engineering Inspiration Award win.

Technical Skills

Languages: Python, SQL, Java, HTML/CSS, TypeScript, C, C++, Go, Lua, C#

Developer Tools: VS Code, MongoDB, Postgres, Postman, Figma, Eclipse, Roblox Studios

Technologies/Frameworks: Git, React, Express, Scikit-Learn, NodeJS, PyTorch, Pandas, Numpy, JUnit, Linux