Ricardo Zamora

9567392477 | ricky.zamora769@gmail.com | linkedin | github.com/rzamora2 | ricardozamora.dev

Education

St. Mary's University San Antonio, TX
Bachelor of Science in Physics, Biophysics Concentration *Aug. 2018 – May 2022*

Experience

Software Engineering Resident January 2025 – Present
Headstarter *San Francisco, CA*

- Engaged in 17-week residency program, completing 14 AI/ML and full-stack projects in a startup-like environment
- Collaboration and workshops with mentors from leading tech companies, including Google, to strengthen networking, technical and interview skills
- Completing interview preparation, which includes 400+ Leetcode problems and AI mock interviews

Summer Research Assistant - Department of Energy June 2021 – Aug. 2021
Lawrence Berkeley National Laboratory *Berkeley, CA*

- Contributed to the development of ARTEMIS (Adaptive mesh Refinement Time-domain ElectrodynaMIcs Solver), an open-source, high-performance solver for modeling signals in microelectronic circuitry.
- Ran large-scale circuit simulations on the NERSC Cori Supercomputer using slurm job scheduling and optimized parallel computing techniques to reduce simulation runtimes
- Used Python to automate generation of Excitation Flag Functions used in modeling circuit structure for complex electromagnetic simulations, reducing simulation file build time by 20%
- Promoted the internship's goals of training the next generation of scientists to Secretary of Energy Jennifer Granholm in front of a live audience

Research Assistant - Unmanned Aerial Systems Lab June 2021 – May 2022
St. Mary's University *San Antonio, TX*

- Developed pipeline for processing, visualizing and classifying EEG data for motor imagery using MNE-Python instead of OpenVibe, increasing data processing speed by 10%
- Contributions to the lab led to future projects to test if MNE-Python code will yield more accurate classification of motor imagery for brain-controlled drone control
- Presented at the University Research Seminar, promoting findings and future work to 200+ visitors

Research Assistant - Department of Physics June 2020 – July 2021
St. Mary's University *San Antonio, TX*

- Simulated luminescent solar concentrator (LSC) with different sized quantum dots (QDs) to test solar optical efficiency (SOE) using Monte Carlo methods in Matlab, with 2.0nm QDs nearing 10% SOE
- Developed method to apply Forster Resonance Energy Transfer (FRET) to simulation using two different QDs with overlapping emission/absorption spectra, as FRET in the LSC could increase SOE
- Research part of EPA People, Planet and Prosperity grant, where we promoted the possible increase in energy efficiency of solar power with LSCs in a virtual competition and research seminar

Projects

Codee | *the AI assistant built on Judge0* January 2025 – Present

- Implemented an AI chat bot on the open-source Judge0 IDE to increase user productivity and coding efficiency
- Applied OpenAI chatGPT 4o mini model to chat bot, leveraging existing API and prioritizing speed of chatbot response
- Developed Node.js and Express backend to support OpenAI API calls
- Current developments include in-line code suggestions and AI model selection via OpenRouter

Inventory Management App July 2024 – Present

- Created simple inventory management app for recording inventory by user, including item name and count
- Integrated Firebase firestore and authentication to handle data storage per user so only authenticated users have access to edit inventory
- Implemented frontend with Next.js, and using Material UI for simple, powerful UI components
- Deployment handled using Vercel, utilizing CI/CD pipelines for automatic builds and seamless deployment

Technical Skills

Languages: *Proficient*: Python, R *Familiar*: JavaScript, TypeScript, SQL, HTML/CSS
Frameworks: React, Node.js, Material-UI, Next.js, Vite, Vercel, Express
Developer Tools: Git, Cloudflare, Firebase, Supabase, VS Code, Jupyter, Spyder