

Justin Ly

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Technical Skills

Programming Languages: SQL (SQLite, MySQL, PostgreSQL), Python, C++, JavaScript

Web Authoring, Frameworks, & Libraries: Pandas, HTML, CSS, Flask, Selenium, BeautifulSoup, PyTorch, NumPy

Technologies: Power BI, MS Office Suite, Firebase, Docker, AWS S3, MinIO

Work Experience

Berkeley Risk & Security Lab

Berkeley, CA

AI Red Team Intern

June 2025-August 2025

- Constructed a hypersonic missile flight simulation model using Flask, NumPy and Matplotlib, allowing researchers to easily visualize missile threat areas with 8 different parameters
- Created a repository of 50+ AI red teaming prompt datasets and 30+ evaluation protocols, addressing the fragmentation of red teaming efforts and enabling users to cross-reference attacks with evaluations
- Conducted analysis of collected prompt datasets, identifying a coverage gap of image and code red teaming, allowing researchers to do targeted database developments in the future to fill these gaps

The Morning Star Company

Merced, CA

Database Developer Intern

January 2025-May 2025

- Engineered a PostgreSQL database paired with Redis for an automated seedling counting system, reducing labor times from ~10 minutes per 450 seedling tray to under 1 minute
- Collaborated with ML engineers to integrate DINOv2 and SVM machine learning outputs/inputs with PostgreSQL database and MinIO
- Developed 15+ database functions allowing for historical trend analysis, tray anomaly detection, etc. increasing plant health monitoring accuracy by ~70%

University of California Merced

Merced, CA

Software Engineer

January 2024-May 2025

- Took project from concept to deployment as sole developer, achieving 400+ active users within 2 semesters while ensuring data integrity through bcrypt and protection against SQL injections
- Tackled inefficient course registration affecting 9000+ students by developing a course recommendation system using SQLite and Python frameworks to reduce academic advisor workload
- Addressed manual data processing concerns by building an end-to-end ETL pipeline with BeautifulSoup, Selenium and data cleaning on the backend, lowering database update time to under 5 minutes

Projects

Brain Tumor Classification Model ([Link](#)) | Python, PyTorch, Scikit-learn, NumPy

March 2024-May 2024

- Trained and developed a brain tumor classification model using PyTorch, achieving a test accuracy of 94% over 20 epochs in identifying MRI images with no tumor and pituitary tumor
- Optimized model training by preprocessing 1,500+ MRI images with data augmentation techniques including random rotations
- Monitored model performance with metrics including a precision of 92% and F1-score of 93%, allowing for clear and reliable feedback

Employ.ai ([Link](#)) | JavaScript, TypeScript, Material UI, React, Next.js, Express.js

March 2024-September 2024

- Built an AI powered job board using JavaScript with OpenAI and Adzuna API, creating personalized job recommendations for candidates
- Implemented resume parsing system, capable of scanning 1000+ resumes per hour, in order to streamline manual reviews and job applications
- Designed RESTful APIs with automated testing that includes 95% code coverage, allowing for simple integration of third party recruitment platforms

Education

University of California Merced Chancellor's List

August 2021-May 2025

Bachelor of Science, Computer Science & Engineering Major