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

Work Experience

Berkeley Risk & Security Lab   **Berkeley, CA**
AI Red Team Intern   June 2025-Present
- 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

The Morning Star Company   **Merced, CA**
Database Developer Intern   January 2025-May 2025
- Engineered a PostgreSQL database 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**
Data Engineer   January 2024-May 2025
- Tackled inefficient course registration affecting 9000+ students by developing a course recommendation system using SQLite and Python frameworks to reduce academic advisor workload
- Achieved 400+ active users within 2 semesters of deployment while ensuring data integrity through bcrypt and protection against SQL injections
- Addressed manual data processing concerns through an 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