Justin Ly

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Education

University of California, Merced *Chancellor's List* August 2021-May 2025
Bachelor of Science, Computer Science & Engineering Major
Relevant Courses: Data Structures, Algorithm Design & Analysis, Calculus, Discrete Mathematics, Full Stack Web Development
Organizations: HackMerced, Association of Computing Machinery, Solar Energy Association, Vietnamese Student Association

Work Experience

Full Stack Web Developer, University of California, Merced *(Merced, CA)* January 2024-Present
- Spearheaded database development by leveraging BeautifulSoup and Selenium to scrape data from the UCM course catalog, resulting in a streamlined database that significantly improved data accessibility and accuracy by 97.83%
- Held meetings with a board of 7 academic advisors to receive feedback for functionalities that would benefit 9000+ student's studies
- Developed a system using Python & SQLite, generating personalized course recommendations by querying user enrollment history, identifying untaken courses, verifying prerequisites, and compiling a refined list of suitable courses to streamline semi-annual student registrations.

Tutor/Grader, Kumon North America Inc. *(Burlingame, CA)* July 2019-August 2021
- Evaluated and graded student worksheets promptly, ensuring timely feedback and error correction. Demonstrated strong attention to detail and efficiency, skills crucial for software development and debugging processes.
- Conducted periodic assessments and benchmark tests to track student progress. Utilized data analysis to identify areas for improvement, reflecting the analytical skills needed for problem-solving and optimizing algorithms in CSE roles.

Projects

Brain Tumor Classification Model (Link) | Python, PyTorch, Google Colab August 2024-September 2024
- Designed and trained a brain tumor classification model using PyTorch with a custom TinyVGG architecture, achieving a test accuracy of 94% over 20 epochs in classifying 'no tumor' and 'pituitary tumor' MRI images
- Optimized training and validation workflows by preprocessing 1,500+ MRI images with data augmentation techniques, improving model generalization and reducing overfitting by 25% through dropout and batch normalization
- Monitored model performance using precision, F1-score, and accuracy metrics, achieving a precision of 92% and an F1-score of 93%, ensuring reliable model predictions

AI Customer Support (Link) | TypeScript, CSS, JavaScript, OpenAI API, React August 2024-August 2024
- Implemented backend functionality with Express.js and Node.js, ensuring secure and efficient handling of user data and real-time chat messages
- Integrated OpenAI's GPT model to enhance the chat application's capability, enabling AI-driven responses and interactions, which improved user engagement by 50%

Hackathon Agricultural Review Tool (Link) | *HTML, CSS, JavaScript, BeautifulSoup, Python, Flask, SQLite* March 2024-March 2024
- Constructed an application leveraging data scraped from the USDA database on all 50 states, facilitating efficient data analysis and visualization capabilities for agricultural data sets, thus streamlining the process of accessing and interpreting agricultural data
- Analyzed accumulated data, enabling the derivation of actionable insights and trends, thereby providing valuable information on crop performance, market trends, and profitability metrics, empowering data-driven decision-making for agricultural stakeholders
- Automated data collection using BeautifulSoup and Python scripts to streamline agricultural data collection

Technical Skills

Programming Languages: Python, C++, JavaScript, Java, TypeScript
Web Authoring, Frameworks, & Libraries: HTML, CSS, Flask, Selenium, BeautifulSoup, Next.js, React, PyTorch
Databases: SQLite, Firebase