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

Work Experience

Full Stack Web Developer, University of California, Merced *(Merced, CA)* January 2024-Present
- Designed and deployed an end-to-end course recommendation engine using Python and SQL, improving the registration efficiency for over 9,000 students by automating complex prerequisites validation and personalized course matching.
- Spearheaded data management by integrating BeautifulSoup and Selenium to scrape and update university course catalogs, enhancing database accuracy by 97.83%.
- Fostered collaborative problem-solving in meetings with academic advisors, ensuring new software features met institutional and student needs, reflecting a user-focused approach to software development.

Projects

Coffee Sales Dashboard (Link) | *Excel* January 2025-January 2025
- Delivered actionable insights into coffee sales by utilizing advanced Excel formulas (XLOOKUP, IF, INDEX-MATCH) to identify trends in customer purchasing behavior, enabling data-driven decisions
- Designed a dynamic sales dashboard using pivot tables, timelines and slicers to incorporate key metrics such as top-performing products, customer segmentation, and monthly revenue trends, ensuring users could make strategic decisions at a glance
- Streamlined analysis processes by cleaning and transforming raw data using Power Query, reducing manual data preparation time

Patient Waitlist Analytics Dashboard (Link) | *Power BI* January 2025-January 2025
- Transformed raw, inconsistent healthcare data using Power Query Editor with transformations such as appending tables, cleaning values, and creating custom columns, enabling accurate and efficient analysis
- Engineered advanced DAX calculations to uncover critical KPIs, such as trends in monthly and yearly patient waitlists, while introducing toggled metrics for average and median calculations

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

Hackathon Agricultural Review Tool (Link) | *HTML, CSS, JavaScript, BeautifulSoup, Python, Flask, SQL* 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: SQL, Firebase
Applications: Power BI, Excel