Lawrence Ng

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Background

Computer Science graduate student with 3+ years of experience in software development and web APIs actively seeking a Software Engineer position.

Education

M.S. Computer Science - University of San Francisco, In Progress
Certificate in Full Stack Web Development - University of California, Berkeley Extension, 2018
B.S. Aerospace and Mechanical Engineering - University of California, Irvine, 2014

Professional Experience

Implementation Engineer

Adyen | San Francisco, CA | December 2021 – August 2022

- Led technical integration efforts for customers adopting Adyen's payment solutions, ensuring seamless implementation and user satisfaction.
- Collaborated closely with sales and account management teams to drive customer growth and expand business opportunities.
- Served as a subject matter expert on Adyen's Point of Sale (POS) solution, providing strategic guidance and technical support.
- Developed and maintained sandbox applications in JavaScript and Python Flask for pre-sales demonstrations, enhancing the sales process.
- Prioritized customer feature requests, identified potential roadblocks, and facilitated the successful deployment of Adyen's solutions.

Technical Support Engineer (Point of Sale)

Adyen | San Francisco, CA | June 2019 – December 2021

- Delivered prompt and efficient operational support for customers during integration and daily usage of Adyen's Point of Sale (POS) terminals.
- Diagnosed and resolved hardware and software issues on POS terminals, collaborating directly with merchants to ensure smooth operation.
- Tested new features, identified and reported bugs, and contributed to the revision of technical documentation.
- Automated routine tasks using Python, JavaScript, and Bash, and developed a Java application for internal testing purposes.
- Monitored platform performance, escalated critical issues to on-call developers, and acted as the primary contact for external resources during emergencies.
- Mentored new engineers, conducted onboarding sessions, and played a key role in expanding the North American POS technical support team.

Teaching Experience

Teaching Assistant

University of San Francisco | San Francisco, CA | September 2023 – December 2024

- Assisted in teaching object-oriented programming, data structures, and graduate-level algorithms courses.
- Supported students by troubleshooting coding issues, offering detailed feedback on assignments and projects to enhance their understanding and skills.

Development/Project Experiences

Duets.ai

University of San Francisco | San Francisco, CA | September 2024 - Present

- Led a cross-functional team of 6 undergraduate and graduate students, driving project milestones and facilitating collaboration.
- Designed and implemented **Zoom OAuth integration** in the backend, enabling seamless account linking, webhook management, and audio processing capabilities.
- Developed and deployed **Stripe subscription payment workflows**, streamlining user registration and monetization.
- Refactored and extended backend architecture to enhance **error handling**, optimize performance, and support

new feature rollouts.
- Architected and built a robust **user authentication system** (registration, login, logout) to improve security and user experience.
- Enhanced AI-driven **Student Learning Insight reports** by refining prompt engineering for greater report accuracy and relevance.
- Successfully achieved **beta app publication** on the Zoom App Marketplace, advancing the product's reach and adoption.

CodingWithBoba.com
University of San Francisco | San Francisco, CA | Fall 2024
- Designed, developed, and deployed a **cloud-native AI-powered React application** to solve Leetcode coding problems, leveraging **Amazon Web Services (AWS)** infrastructure for scalability and efficiency.
- Architected and implemented cloud services, including **S3 (storage)**, **API Gateway (routing)**, **RDS (database management)**, **CloudFront (content delivery)**, and **AWS Lambda (serverless execution)** for a highly modular and cost-effective solution.
- Integrated with **Leetcode's GraphQL API** to dynamically fetch coding problems and test cases in real-time.
- Engineered advanced **prompting workflows** with **Google Gemini AI**, optimizing prompt engineering and refinement for accurate problem-solving.
- Deployed an automated verification pipeline using **JDoodle API** to execute AI-generated code and validate correctness against Leetcode test cases.

Wildfire Prediction Project
University of San Francisco | San Francisco, CA | Fall 2022 - August 2024
- Volunteered as a student assistant, analyzing and interpreting complex GIS datasets using ArcGIS to support wildfire prediction efforts.
- Developed and optimized Python scripts to identify patterns in wildfire data, focusing on the detection of fires with increasing sizes.
- Performed data cleaning and preprocessing to enhance the accuracy and reliability of wildfire models.
- Contributed to the construction of a preliminary predictive model for wildfire occurrence, aiding in early detection and response strategies.

Wind Speed and Energy Prediction Project
University of San Francisco | San Francisco, CA | Spring 2024
- Collaborated with a team to develop and implement a machine learning model predicting wind speed and energy production using historical data from the ERA5 dataset.
- Utilized Google Colab, Google Earth Engine, and Python libraries including sklearn and PyTorch for data analysis, feature engineering, and model training.
- Conducted extensive data preprocessing, including cleaning and imputing missing values in large datasets of wind turbine locations and power curves.
- Built and validated a CNN-LSTM model to forecast wind speeds, achieving a test Mean Squared Error (MSE) of 1.13.
- Converted wind speed predictions into energy production estimates, focusing on wind turbines in the San Francisco Bay Area.
- Benchmarked model predictions against Pyrecast (NBM) predictions, with results visualized in Google Earth Engine maps.

Evaluating the Effectiveness of Bandwidth Measurement Tools in the Presence of a Deceptive ISP
University of San Francisco | San Francisco, CA | Spring 2024
- Conducted in-depth analysis of **bandwidth measurement tools** by performing **packet inspections** using **tcpdump** and **Wireshark**, identifying tool-specific packet patterns and behaviors.
- Designed and implemented a **packet classification system** to distinguish measurement tool-related packets from regular network traffic, enabling selective access to unthrottled network speeds.
- Explored the implications of ISP throttling on network measurement accuracy, contributing to insights on the reliability of bandwidth testing tools.

Taxi Meter Mobile Application and Web Dashboard
University of San Francisco | San Francisco, CA | Fall 2023
- Designed and developed a **cross-platform mobile application** for iOS and Android, enabling real-time distance and time tracking using GPS for accurate fare calculation.
- Integrated features allowing users to calculate trip costs dynamically and review comprehensive trip summaries, including per-trip and daily totals.

- Built an online portal with **Google Maps integration**, providing taxi companies with visualization and analysis tools for fleet data management.
- Implemented secure data storage using **Firebase** and email trip summary functionality through **EmailJS**, enhancing usability and reliability.

GAYA

University of San Francisco | San Francisco, CA | Summer 2023

- Developed a full stack web application serving as the launch platform for a women's health supplement startup, focusing on user-friendly frontend design.
- Designed and implemented the frontend using React.js to ensure an engaging and responsive user experience.
- Architected the backend infrastructure and deployed the application on AWS, ensuring scalability and public accessibility.

At-Risk Drug Use Prediction Using Demographics and Personality Measures with Focus in AI Ethics and Auditability

San Francisco State University | San Francisco, CA | Fall 2022

- Led a 3-member team to design and implement a **Random Forest model** that predicts at-risk drug use based on demographic and personality data.
- Conducted a comprehensive **audit of data, model architecture, and results** to identify and mitigate potential biases, ensuring ethical AI practices and fostering model transparency.
- Evaluated the **trustworthiness and societal impact** of the model, analyzing potential downstream effects and ethical considerations for real-world deployment.
- Implemented rigorous **data validation and preprocessing pipelines** to enhance data quality and reduce the influence of skewed or incomplete datasets.

AcceptMyCrypto.com

San Francisco, CA | November 2018 – June 2019

- Developed and deployed the alpha build of an online marketplace enabling cryptocurrency transactions, hosted on Heroku.
- Managed and optimized MySQL database operations, streamlining server-side routes for efficient data retrieval.
- Conducted team workshops on website deployment strategies and the implementation of Redux, enhancing overall team proficiency.

Thought Parcel

San Francisco, CA | October 2018 – March 2019

- Designed and implemented the server-side and client-side architecture for a video-sharing web application using Node.js, MySQL, and React.
- Deployed and maintained the application on Heroku, integrating AWS S3 for secure cloud storage.
- Implemented robust user authentication using bcrypt.js and JSON Web Tokens, ensuring data security and user privacy.
- Led QA testing efforts, identifying and resolving issues to ensure a seamless user experience.