Jackson Newman

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Work Experience

AMD **San Jose, CA**
Software Engineer Intern, Internal Development Tooling June 2023 - September 2023

- Accelerated Vivado constraint processing by 50% with a new C++ pattern matching function.
- Developed unit tests achieving 100% coverage to ensure performance and accuracy for Wildcard Matching.
- Reduced Vivado memory usage by 2% by refactoring code to utilize Tessil C++ Hash map package.
- Automated memory, encryption tests, and key upgrades using Python, cutting testing time by 50%.

Shellie.us **San Francisco, CA**
Full Stack Software Engineer Intern, MERN Stack June 2022 - September 2022

- Developed a React-based hierarchical UI with dynamic modals and edit functionality for exhibits.
- Created REST API integrations for editing and saving exhibit data in NoSQL backend database.
- Created reusable React components, improving maintainability and reducing development time by 30%.
- Used React and Redux for state management, enhancing data consistency and reducing errors by 20%.

Projects

Collaborative Full Stack Website | *Java, Javascript, SQL, Maven, Jest, Git, CI/CD, Jenkins, RESTful API*

- Collaborated in an Agile team to deploy 7 front-end and back-end features in a legacy codebase.
- Developed CRUD operations in a Java backend for PostgreSQL database, deploying 6 key functions.
- Reduced course search query volume by 60% by implementing search by instructor filters.
- Implemented local storage for user form metadata, reducing course search time by 30%.

Historical Stock Information Visualization Website | *Flask, Javascript, SQLite, CSS, Git, CI/CD, GitHub Actions, REST API*

- Developed a Flask-based REST API with 6+ endpoints for database retrieval, enabling real-time data.
- Enhanced initial front-end load by prerendering charts, reducing subsequent render times by 40%.
- Designed a custom Trie structure indexing 6000+ stocks by market cap for efficient search results.
- Improved stock info retrieval time by 80% through optimized API design and local database storage.

Website for Daily Commute Information | *React, Javascript, CSS, Bootstrap, Google Auth, GCP, Firebase, Git*

- Created 3 CRUD APIs for user commute information, including time, address, and destination.
- Configured Firebase for 1000+ users for secure user authentication and database storage.
- Utilized GCP Functions and Google Maps API for scheduled email sending and fastest route info.
- Designed and styled interactive interfaces using CSS, increasing usability and readability by 20%.

AI Model Demonstration Wesbite | *Flask, AWS, GCP, LLM, REST API*

- Configured and deployed 3 AWS EC2 Linux VMs for website hosting and development and AI hosting.
- Deployed an end-to-end Flask web app with Nginx to showcase OpenAI-like LLM inference via HTTP.
- Developed a Flask API server capable of handling hundreds of image generation requests per second.

Education

University of California Santa Barbara **Santa Barbara, CA**
Bachelor of Science in Computer Engineering September 2020 - June 2024

3.7 GPA, Dean's Honors, Relevant Coursework:
Data Structures, Algorithms, Operating Systems, AI, Machine Learning, Full Stack Web Development, UI/UX Design

Technical Skills

Programming Languages: C++, Java, Python, C, PostgreSQL, SQL, SQLite, JavaScript, HTML, CSS, JSON, YAML
Frameworks: React, Node.js, Flask, Bootstrap, Material-UI, Storybook, Spring Boot
Developer Tools: Git, Docker, Jira, Google Cloud Platform, Confluence, Perforce, NPM, Firebase, GitHub Actions, MongoDB, Jenkins, Kubernetes
Libraries: pandas, NumPy, TensorFlow, PyTorch, Keras, Seaborn, matplotlib