Leo Lee

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EDUCATION

University of Southern California   Los Angeles, CA
Master of Science in Computer Science - Data Science   *August 2023 - May 2025*

University of California, Santa Cruz   Santa Cruz, CA
Bachelor of Science in Computer Science, GPA: 3.82   *October 2020 - June 2023*
Honors: Cum Laude with Highest Honor in the Major.

EXPERIENCE

AMD (Advanced Micro Devices)   San Jose, CA
Software Engineer Intern: Internal Tools Team   *May 2024 - August 2024*

- Architected and developed a comprehensive dashboard using Python, Flask, MySQL, and Javascript, which enabled Product Verification and Test Engineers to monitor test pattern health and device performance over time.
- Optimized dashboard loading time from 13 seconds to 0.2 second by leveraging SQLalchemy, Redis, and asynchronous data loading to streamline data queries and reduce response times.
- Utilized asynchronous tasks from Celery to implement customized notification system for streamlined management of alerts and providing important insights to assist the users with better decision making.

University of Southern California   Los Angeles, CA
Machine Learning Research Intern: FORTIS Lab   *September 2023 - May 2024*

- Conducted benchmarking on various state-of-the-art outlier detection algorithms to evaluate their performance on large textual documents by importing Python library PyOD.
- Utilized the Machine Learning library SkLearn to preprocess and label various datasets into a suitable format for analysis.
- Coordinated team workflow and completed a paper in IEEE format and presented it in front of live audience in class.

PROJECTS

PresidentTalksChess

- Built a chess broadcasting system that analyzes gameplay and delivers commentary as subtitles. Utilized cloned celebrity voices, computer vision, chess engine analysis, and advanced voice synthesis to create an engaging experience.
- Used Python and Ultralytics YOLO, fine-tuned on a custom dataset to detect all 12 chess piece classes and convert board states into FEN notation; integrated Stockfish to evaluate positions and generate tactical insights.
- Generated dynamic and expressive commentary using Edge-TTS for high-quality text-to-speech conversion, followed by RVC (Retrieval-based Voice Conversion) to accurately mimic celebrity voice profiles for enhanced realism.

Moodify

- Collaborated with teammates to develop Moodify, a standalone web service that uses the Google Gemini Pro Vision API to identify the theme and mood of uploaded photos, then suggests the top 10 songs that match accordingly.
- Integrated the Spotify API to ensure a smooth and secure login experience, allowing users to access Spotify's extensive collection of daily updated playlists.
- Utilized Reflex, a pure Python web framework, to develop a responsive and user friendly frontend and backend.

Slack Clone

- Created a messaging app similar to Slack using React and MUI, and adhering to Test Driven Development principles
- Implemented workspace, channel, and messaging functionality connected to server through RESTful API.
- Developed a comprehensive and robust testing suite with React Testing Library, Supertest, Jest, and Swagger.
- Designed well written schemas for PostgreSQL database featuring normalization techniques using yaml files.

SKILLS

Languages: Python, SQL, JavaScript, TypeScript, Swift, C++, Kotlin, React Native, C, Bash, Java, Go

Tools: React.js, Next.js, Express.js, Node.js, Deno, React Testing Library, Supertest, Jest, Playwright, BeautifulSoup, Swagger, MySQL, PostgreSQL, SQLite, MariaDB, JIRA, Confluence, Pylint, MyPy, Flask, Celery, Redis, ECharts, AJAX, jQuery, Agile, Docker, GIT, JUnit

Machine Learning: PyTorch, PyOD, OpenCV, Ultralytics YOLO, Scikit-learn