Ashton Liu

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EDUCATION

University of California, Santa Cruz, GPA: 3.7 Santa Cruz, CA Expected June 2026
Bachelor of Science (B.S.) in Computer Science & **Bachelor of Science (B.S.) in Applied Mathematics**
Relevant Coursework: Machine Learning, Artificial Intelligence, Data Structures & Algorithms, Embedded Operating Systems

TECHNICAL SKILLS

Most Advanced Languages: Python, C, Golang, C++, Typescript, Javascript, Java
Technologies: REST API, AWS, Docker, Kubernetes, PyTorch, TensorFlow, Keras, ReactJS, OpenAI, OpenCV, pandas, Sklearn, MatPlotLib, PostgreSQL, MySQL, MongoDB, NumPy, Flask, Node.js, Kubernetes, Git, Shell Scripting, Beautiful Soup

EXPERIENCE

Clavata.ai - Software Engineer Intern San Francisco, CA June 2024-Sept 2024
Skills/Technologies: Python, **Golang**, **REST API, Docker, Kubernetes, AWS**, Slack API, Discord API, Git

- Architected a scalable, AI-powered moderation system by deploying a Python/Golang-based Slack and Discord bot on AWS EC2 instances with Kubernetes for fault-tolerant, auto-scaling deployment
- Integrated Slack/Discord APIs with Clavata's LLM models via REST APIs, introducing cross-platform functionality and opening opportunities to increase user engagement across 100+ client communities
- Collaborated with cross-functional teams to optimize machine learning algorithms for real-time content filtering, improving processing speed by 50%, and supporting moderation for over 10K messages per hour through servers

veb.ai - Lead Engineer and Product Manager Santa Cruz, CA April 2025-Present
Skills/Technologies: Python, FastAPI, REST APIs, Docker, Kubernetes, Firebase Firestore, OpenAI API, Sinch

- Led the production of a FastAPI backend in Python with Pydantic-validated endpoints for onboarding, LinkedIn scraping and Firestore storage, using background tasks for non-blocking data ingestion and vector embeddings persisted in Firestore
- Integrated AI and messaging pipelines by generating semantic embeddings with Google Generative AI, performing Firestore native vector similarity search, driving GPT-4o conversational workflows via OpenAI function-calling, and orchestrating two-way SMS interactions through the Sinch Conversation API

AIEA Lab, University of California Santa Cruz - AI Research Assistant Santa Cruz, CA Sept 2024-Present
Skills/Technologies: Python, Docker, Kubernetes, Stable Baselines, Conda, CARLA

- Spearhead the research initiative on Hierarchical Reinforcement Learning algorithms, enhancing autonomous vehicle navigation efficiency by 40% and reducing processing time by 30% across multiple driving scenarios
- Conduct testing and optimization of autonomous vehicle paths using Stable Baselines with Python and CARLA, incorporating Proximal Policy Optimization and Deep Deterministic Policy Gradient, ensuring efficient navigation

PROJECTS

SummarAIze April 2025
Skills/Technologies: Python, **FastAPI, Docker, Kubernetes, Firebase,** React, TypeScript, OpenAI API,

- Architected a high-throughput backend in Python using FastAPI and the OpenAI API for automated PDF summarization, keyword extraction and chatbot-style summary refinement, containerizing all services with Docker and Kubernetes clusters
- Built a responsive React and TypeScript front end integrated with Firebase (Firestore, Auth, Storage) to manage user sessions, persist video/audio metadata and trigger GTTS-powered audio and custom visuals-to-video pipelines

SlugScheduler Jan 2025
Skills/Technologies: Python, Flask, OpenAI, mongodb, RAG, pandas, Beautiful Soup, React, Node

- Constructed an AI-powered RAG pipeline, web scraping class quarter information with Beautiful Soup and leveraging Python, OpenAI, and MongoDB to enhance course prediction accuracy by 90%, optimizing student scheduling decisions
- Deployed a Flask-based API with React and Node for seamless user interaction, reducing data retrieval times by 150% and improving the platform's overall performance

DermaScan Oct 2024
Skills/Technologies: Python, PyTorch, Keras, TensorFlow, Vision Transformers, HTML, CSS, Flask, pandas, Git

- Developed an innovative Flask application that utilizes real-time facial scanning to identify various types of acne, providing tailored resources and actionable tips for effective treatment using Python, TensorFlow, and Keras for model training and dataset analysis, obtaining an 80% accuracy
- Engineered a chatbot that provides personalized remedy suggestions for different acne classifications, resulting in a 30% increase in user engagement and an overall satisfaction rate of 4.8/5 from beta testers