Alec Levy

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Education

University of California, Santa Cruz – Bachelor of Science in Computer Engineering (3.89 GPA)   Expected May 2027
Relevant Coursework: Data Structures and Algorithms, C Programming, Computer Architecture, Discrete Math, Data Science in Python, Differential Equations, Linear Algebra, Probability and Statistics

Skills

Languages: JavaScript, C++, Python, C, Java, HTML, CSS, MATLAB
Cloud/DevOps: AWS (EC2, S3, RDS), Docker, CI/CD
Frontend: React, CSS, Tailwind, Vitest
Backend: Flask, SQL, REST API, Node.js

Experience

Full Stack Developer   January 2024 – Present
jLab in Smart Sensing – Santa Cruz, CA

- Led development of DirtViz, an open-source data visualization platform built with **JavaScript**, **Python**, and **React**, supporting analysis of **20M+** sensor data points for 5 research labs (Stanford, Georgia Tech, Northwestern, UCSD, UCSC).
- Developed a data sharing system used by **40+** researchers, contributing to **3 published studies** on microbial fuel cells.
- Optimized scalability by managing **AWS** infrastructure (EC2, S3, RDS, CloudFront), allowing for **18x** data growth**.**
- Improved contributor engagement by utilizing **Docker** environments, enabling **15** open-source contributors to seamlessly set up development environments and accelerate feature implementation.
- Streamlined analysis with a data archive feature, reducing clutter by **30%** and enabling efficient storage of inactive data.
- Strengthened platform security by designing a profile login page with **OAuth 2.0**/API Keys, safeguarding **8** protected endpoints.

Projects

Slug Planner | Javascript, React, Python, SQL, Flask

- Built a React-based frontend with dynamic interfaces for generating personalized 4-year academic plans for UCSC students.
- Automated scheduling logic by using BeautifulSoup to web-scrape prerequisites and graduation requirements, saving students hours of manual planning.
- Used Python Scripting to automate updating large SQL datasets through Supabase, ensuring large scalability.

Auditus Manus | Python, Pydub, Mediapipe

- Developed an interactive audio manipulation tool that tracks hand gestures to control pitch, volume, and speed of inputted .wav files.
- Utilized Mediapipe for real-time hand tracking and Pydub for audio processing.

Vivant (Field Recorder) | Python, C++

- Created an edge device using a Raspberry Pi Micro to record audio, process speech using the Cheetah speech-to-text engine, and sync results with a text editor app via WiFi.

AI Robotic Arm | Python, C, Docker

- Developed object detection vision models for an AI-driven robotic arm, integrating ChatGPT for voice-command execution.
- Integrated a camera system using OpenCV, enabling the robotic arm to detect and track objects in real-time for precise manipulation tasks.

Non Technical Skillset

- Drip coffee enthusiast
- Regular Dune rereader
- Rubik's cube competitor, sometimes one-handed