





Lance Ellis

Austin, TX

 github.com/lanc33llis |  [linkedin.com/in/lance-ellis](https://www.linkedin.com/in/lance-ellis) |  lanc33llis@gmail.com |  +1 210-323-3452

EDUCATION

University of Texas at Austin

Bachelor of Science in Astronomy

May 2021 - May 2025

EXPERIENCE

Amazon

May 2023 - August 2023

Software Development Engineering Internship

Sunnyvale, CA

- Developed a pivotal list sorting feature, enhancing user experience for over 50 million Alexa Mobile app customers
- Utilized React Native, TypeScript, Redux, and Apollo to design and implement the sorting feature
- Ensured Quality by validating the feature through comprehensive Jest unit testing and rigorous QA processes
- Contributed to the continuous enhancement of the Alexa Mobile app through features such as scroll persistence, UI improvements, and database migrations

Amazon

May 2022 - August 2022

Software Development Engineering Internship

Los Angeles, CA

- Developed linter to validate server-side renderings of the Amazon Alexa app served to 10s of millions of users to reduce developer error rate by 30%
- Implemented the linter API with Java using JSON schemas and tree traversal for speeds 10x faster than typical JSON Schema validators
- Created an interactive UI for Amazon Alexa developers, 1000 engineers, to validate and develop Amazon Alexa pages created with TypeScript, React, TailwindCSS, and Recoil for state management

Major League Hacking

May 2021 - Aug 2021

Production Engineering Fellowship

Remote

- Certified by the Linux Foundation in the essentials of system administration learning DevOps technologies: Docker, AWS, Bash, Python, and Linux
- Built full-stack Instagram clone using Flask and MongoDB for the user database
- Deployed app on an AWS EC2 using Docker-compose to containerize the app and orchestrate containers for monitoring using cAdvisor, reverse-proxying using Nginx, and data analytics using Prometheus visualized with Grafana
- Implemented CI/CD; automated linting, unit and integration testing, and deployment using GitHub Actions

PROJECTS

Hackathon Project

git.io/tabforcharity

Tab for Charity, Full-stack App

- Next.js full-stack web application mines cryptocurrency when users idle for charity donations
- Mines Monero efficiently using Web Assembly to generate 2 dollars per 1000 users per day
- Sign-in authorization through Google OAuth, hosted with Vercel, and Mongoose ORM for database

Personal Project

git.io/lemma

Lemma, Language Parser

- Built CLI parser using ANTLR4 to develop hard-typed language for units and functions
- Computes various quantum optics phenomena like polarizing beam splitters, BB84, B92, Malus' Law, with additional math functions for concepts like binary one-time pad

School Project

git.io/Reservoir-development-simulation

Inventors Program, Machine Learning Algorithm for Identifying Oil Wells

- Developed Pix2Pix model to identify wells using satellite image data to predict future well development
- Partnered with ConocoPhillips to train the model using DBSCAN to get an MAE of .772 and MSE of 3.8 on validation data

Other Projects

- **Personal Website**  : Full-stack Next.js web app built using React

TECHNICAL SKILLS

Programming Languages: C++, JavaScript, Python, Java

Web Technologies: Django, TypeScript, React, Next.js

DevOps: AWS, Lambda Functions, GitHub Actions, Docker

Miscellaneous: SQL, Git, Bash, Latex, Tauri, MongoDB

RELEVANT COURSEWORK

Computer Science: Data Structures & Algorithms, Web Development, Quantum Computing

Mathematics: Calculus 2 & 3, Linear Algebra, Differential Equations with Linear Algebra