

Work Experience

Amazon, Seattle WA Aug. 2021 - Mar 2024

Software Development Engineer 2 | Applied AI Aug. 2023 - Mar 2024

- Integrated an internal PyTorch acceleration library into public AWS deep learning containers, which was launched as the [smart sifting Sagemaker feature](#). External beta customers regularly saw up to 40% reductions in training time with minimal performance loss as a result.
- Designed and implemented method of running the above algorithm, originally designed to run exclusively within PyTorch, in other popular ML frameworks, such as HuggingFace. Multiple large companies were able to incorporate the algorithm as a result.

Software Development Engineer 1 | Applied AI Sep. 2022 - Aug. 2023

- Implemented multiple core features and optimizations for a Python library that accelerates PyTorch training by reserving expensive GPU back-propagations for the most valuable samples.
- Designed and implemented the integration of the above algorithm into the Amazon Search product ranking PyTorch Lightning pipeline. As a direct result of this integration, multiple 2023 production models experienced a 45% reduction in training time with no degradation in critical accuracy metrics.

Software Development Engineer 1 | Alexa AI Evaluations Aug. 2021 - Sep.2022

- Proposed and implemented a new error reporting layer in a critical microservice within the Alexa evaluation pipeline. This layer identified and categorized invalid upstream configurations and surfaced the errors through a clear API, resulting in a 30% decrease in service tickets and improving the self-service debugging experience for customers.
- Implemented a distributed state management system on top of AWS which orchestrated the map-reduce evaluation jobs for Alexa NLU models. After switching to this new state manager, tickets from these race conditions dropped 100%, from 2 per week to zero.

Kod*lab at University of Pennsylvania, Philadelphia PA Oct. 2020 - Apr. 2021

Research Assistant Developer

- Developed a full stack web application that ran a simulation of a hexapedal robot's collection of geological data within desert dunes. Utilized React, Redux, Webpack, and WebGL.

Education

B.S.E. in Computer Science, University of Pennsylvania Graduated May 2021

- Relevant Coursework: *Algorithms, Systems Networking, Operating Systems, Compilers and Interpreters, Interactive Computer Graphics, Discrete Mathematics, Automata and Computability*
- TA for CIS 240 (Intro Computer Architecture) and CIT 593 (Intro Computer Systems)

Skills

Languages: C++, C, Javascript, TypeScript, Python, Java, C#

Technologies: AWS, React, Redux, Unreal Engine, Unity, Pytorch, Docker, Git, OpenGL

Projects

- [Browser](#): A rendering engine and browser written from the ground up in Java.
- [GBA Emulator](#): A GameBoy Advance emulator in TypeScript for ARMv4T GBA games.
- [Terminal Emulator](#): A terminal emulator in OpenGL and C with ANSI command support.
- [Minatrack](#): A minimal React Native mobile app plotting daily trends.