William Liu

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Education

Carnegie Mellon University
B.S. in Cognitive Science, Minor in Computer Science *// Aug 2016— May 2020*

Experience

Amazon *// Palo Alto, CA*
Sofware Development Engineer II *// Sep 2022 — Present*
- Tech Lead on the ML experimentation platform for Amazon.com's search rankers model development
- Designing and leading a complete infrastructure upgrade to increase scientist productivity on the platform

CoPilot *// Pittsburgh, PA (Remote)*
Lead Backend Systems Engineer *// Aug 2021 — Sep 2022*
- Led the design, development, and maintenance of the entire backend system as the primary backend engineer
- Performed business analytics for day-to-day operations as well as for fundraising rounds

SambaNova Systems *// Palo Alto, CA*
Software Engineer *// Jun 2020 — Aug 2021*
- Led a small team to increase training speed of multiple 2D/3D computer-vision ML models by more than 10X
- Drove the design process of a new hardware-optimized convolution operator

NVIDIA *// Santa Clara, CA*
Deep Learning Software Intern *// May 2019 — Aug 2019*
- Improved ML model inference latency and memory usage through in-compiler weights compression

Uber *// Pittsburgh, PA*
Software Engineering Intern *// May 2018 — Aug 2018*
- Surveyed, designed, and implemented multiple latency reduction algorithms in the autonomous vehicle distributed operating system's message-passing protocol

Select Publications

"Accelerating Scientific Applications With SambaNova Reconfigurable Dataflow Architecture" *Computing in Science & Engineering, 2021*
M. Emani, V. Vishwanath, C. Adams, M. E. Papka, R. Stevens, L. Florescu, S. Jairath, **W. Liu**, T. Nama, A. Sujeeth

"What Your DRAM Power Models Are Not Telling You: Lessons from a Detailed Experimental Study"
SIGMETRICS 2018.
S Ghose, A G Yağlıkçı, R Gupta, D Lee, K Kudrolli, **W X. Liu**, H Hassan, K K. Chang, N Chatterjee, A Agrawal, M O'Connor, O Mutlu.

Select Coursework

Theory: Topics in Deep Learning, Parallel Algorithms, Functional Programming, Numerical Analysis
Systems: Optimizing Compilers, Parallel Computer Architecture, Advanced Operating Systems

Skills

Engineering:
Languages: Python, TypeScript, C, C++; **ML Tools:** Tensorflow, PyTorch, NumPy; **Compiler Tools:** LLVM, MLIR

Web/App Development:
Frontend: React, NextJS, SwiftUI, Flutter**; Backend:** Fastify, Flask, FastAPI, Express, GraphQL**;**
Databases: MongoDB, PostgreSQL, DynamoDB, Firestore**; Infrastructure:** AWS, DigitalOcean, Firebase, Docker

Design:
Tools: Figma, Adobe InDesign, Adobe Photoshop, Adobe Illustrator