

William Liu

☎ (608) 886-3074 // ✉ me@williamliu.me // 🌐 www.williamliu.me

Education

The University of Texas at Austin

May 2022 (Expected)

M.S. in Computer Science
(Part Time, Remote)

Carnegie Mellon University

May 2020

B.S. in Cognitive Science
Minor in Computer Science
Alpha Epsilon Pi Fraternity

Skills

Programming Languages:

C, C++, Python, SML, TypeScript,
JavaScript, MATLAB, R, OCaml

Machine Learning:

PyTorch, Tensorflow

Frameworks and Tools:

LLVM, CUDA, OpenMP, Open MPI,
Unix, Git

Web Development:

GraphQL, React, PostgreSQL,
NextJS, AWS, Express, Fastify,
MongoDB, Flask

Design:

InDesign, Photoshop, Illustrator,
AutoCAD, Sketch, Adobe XD, Figma

Select Coursework

Theory:

Quantum Information Science
Deep Learning
Topology and Modal Logic
Parallel Algorithms
Functional Programming
Computational Perception

Systems:

Optimizing Compilers
Parallel Computer Architecture
Advanced Operating Systems

Updated: Nov 19, 2021

Experience

CoPilot // Pittsburgh, PA (Remote)

Backend Systems Engineer // Aug 2021 – Present

- Build, manage, and maintain the entire backend infrastructure

SambaNova Systems // Palo Alto, CA

Software Engineer // Jun 2020 – Aug 2021

- Designed ML/HPC application dataflow graph optimization algorithms
- Designed and optimized architecture-specific convolution operators

Nvidia // Santa Clara, CA

Deep Learning Software Intern // May 2019 – Aug 2019

- Created new machine learning model regression pipeline
- Implemented weight compression algorithms for model performance

Uber // Pittsburgh, PA

Software Engineering Intern // May 2018 – Aug 2018

- Prototyped new safety-critical distributed message passing architecture to
reduce autonomous vehicle safety response latency

Carnegie Mellon University // Pittsburgh, PA

Research Assistant // Dec 2016 – May 2020

Teaching Assistant // Aug 2017 – May 2020

- Research in memory systems optimizations for sparse algorithms
- Taught and mentored hundreds of students over 5 semesters

Select Projects

Detailed descriptions and more projects at: <https://williamliu.me/categories/project/>

Improving CNN Interpretability // Course Project, May 2019

Built templates to extract kernel convergence features and interpret models

Parallel Galaxy Simulation // Course Project, May 2019

Built and optimized a parallel galaxy simulator using a lock-free quadtree

Facebook Discourse // Facebook Global Hackathon Finals, Nov 2017

Digitize and organize political debates in real time. Built in 24 hours.
Presented to the VPs of Technology of Instagram, WhatsApp and Facebook
Grand Prize out of 14 finalists from 11 different countries

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, and 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.