

William Liu

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Education

The University of Texas at Austin

May 2023 (Expected)

MS in Computer Science

Carnegie Mellon University

May 2020

BS in Cognitive Science

Minor in Computer Science

Alpha Epsilon Pi Fraternity

Skills

Programming Languages:

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

Frameworks and Tools:

LLVM, CUDA, OpenMP, ReactJS, Express, GraphQL, MongoDB, Tensorflow, Open MPI, Unix, Git

Design:

InDesign, Photoshop, Illustrator, AutoCAD, Sketch

Misc:

LaTeX, Mandarin Chinese

Select Coursework

Theory:

Deep Learning
Topological Modal Logic
Parallel Algorithms
Functional Programming
Computational Perception
Theoretical Computer Science
Numerical Analysis and Algebra

Systems:

Optimizing Compilers
Parallel Computer Architecture

Interests/Misc.

Photography, League of Legends, Storyboard Directing

Updated: May 20, 2020

Experience

◆ SambaNova Systems // Jun 2020 – Present, Palo Alto, CA

Software Engineer

- Accelerating high performance computing algorithms across the stack

◆ Nvidia // May 2019 – Aug 2019, Santa Clara, CA

Deep Learning Software Intern

- Created testing infrastructure for deep neural network inference accelerator
- Implemented hypercube compression algorithms for model compression within a custom compiler to achieve up to 25% compression in popular models

◆ Uber Advanced Technologies Group // May 2018 – Aug 2018, Pittsburgh, PA

Software Engineering Intern

- Prototyped improvements to safety-critical message passing using shared memory message passing to decrease critical message latency by up to 40%
- Implemented new synchronized distributed system metrics architecture

◆ Computer Architecture Lab at CMU // Dec 2016 – May 2020, Pittsburgh, PA

Research Assistant

- Conducted research in virtual memory systems for sparse algorithms

◆ Carnegie Mellon University // Aug 2017 – May 2020, Pittsburgh, PA

Teaching Assistant

- Grading homeworks, leading recitations, designing exams, and holding office hours for hundreds of students over the course of 5 semesters of teaching:
- 15-418 Parallel Computer Architecture and Programming (S20)
- 85-310 Research Methods in Cognitive Psychology (S20)
- 15-110 Principles of Computing (F17, S18, F18, F19)

Select Projects

Detailed descriptions and more projects at: williamliu.me

PennApps XVII: Modware // 2nd Place + Hacker's Choice, Jan 2018

In 36 hours: created a modular hardware prototyping system that abstracts away low level operations for a software developer and generates web APIs.

2nd Place out of 300+ teams at University of Pennsylvania.

Facebook Global Hackathon: FB Discourse // Grand Prize, Nov 2017

In 24 hours: built a political debate digitizer and organizer for ease of following. Designed the user interaction flow and the machine learning pipeline. **Presented to the VPs of Technology of OculusVR, Instagram, WhatsApp and Facebook.**
Best of 14 finalists from 11 different countries.

NASA Centennial Challenge: Mars Ascent Vehicle // Second Place, Apr 2016

In 8 months: built a one mile apogee rocket and robotic launch pad to secure a payload and prep rocket for launch. Wrote 400+ pages of technical documentation.
2nd Place out of 20+ teams invited from around the the United States.

Select Publications

"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.