SUMMARY

Software Engineer at Google, who enjoys working on compilers and compiler toolchains in his free time. Previously a Marine.

CONTACT

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EDUCATION

Cornell University   Aug. 2018 - May 2021
GPA: 3.9
B.A. in Computer Science with a minor in Science & Technology Studies.

Case Western Reserve University   Spring 2018
GPA: 4.0

LANGUAGES

English
Native Speaker

French
Limited Working Proficiency

AWARDS

Big Red Vets · Land Grant   May 2020
Received the Big Red Vets' Land Grant for continuing the research project on spherical volume rendering algorithms.

EMPLOYMENT

Cornell University
Undergraduate Research Assistant   Sep. 2020 - May 2021
Under Professor Adrian Sampson's research group Capra, developed TVM Relay and NTT pipeline frontends for Calyx, an intermediate language for hardware accelerator generators.

Google
Software Engineering Intern   May 2020 - Aug. 2020
My work primarily involved simplifying the storage of ad events from two separate stores to one using a new, generic remote procedure call service. For my contributions, I received two peer bonuses from Google software engineers.

Engineer Practicum   May 2019 - Aug. 2019
The primary goal of this internship was to optimize the core database implementation of Sawmill Logs, an exabyte scale data lake that supports internal Google analytics. Achieved improvement in the compression ratio by 10-15% for certain log storage types with minimal performance reduction.

Cornell University
Teaching Assistant   Jan. 2019 - May 2019
CS 2110, Object-Oriented Programming and Data Structures
Facilitated weekly recitations for 40 students and held office hours to assist students in the course. Other duties included grading programming assignments, proctoring exams, and enforcing the academic integrity policy.

Department of Defense
Staff Sergeant, United States Marine Corps   Sep. 2013 - Sep. 2017
Served honorably for 4 years in both leadership and instruction roles.

PROJECTS

LLVM CIRCT   Aug. 2020 - Present
Contributed regularly to CIRCT, which designs open source compiler and tools for hardware design languages. My contributions focused specifically on improving the canonicalization pass for the RTL language.

LLVM LibC   Jun. 2020 - Aug. 2020
The LLVM Project is a collection of modular and reusable compiler and toolchain technologies. I assisted with the development of a new C standard library, by implementing functions in the <string> and <ctype> families.

Algorithm for Fast Voxel Traversal Over a Spherical Coordinate Grid   Jan. 2020 - Sep. 2020
Worked with a team of three to implement an algorithm for fast voxel traversal over a spherical coordinate system. As far as we can tell, this has not been completed before and has real world applications in scientific computing. The end goal is to use this in yt-project's visualization library. Further description and initial benchmarks can be found in the GitHub repository.

Eigenvectors From Eigenvalues   Oct. 2019 - Feb. 2020
Implemented a relatively new mathematical discovery, building a relationship between the eigenvectors and eigenvalues of a Hermitian matrix. Optimizations account for reducing floating point error. Initial results indicate that when N is large, it performs better than MATLAB's eig(). This work was referenced in a paper about high performance computing.

ACTIVITIES

Cornell's Chapter of the Association for Computing Machinery
Involves monthly workshops and meetups to discuss recent papers in the computer science field.

Cornell Aerial Robotics
Member of the Cornell Aerial Robotics team, which participated in the annual AUVSI International Aerial Robotics Competition.

Cornell Undergraduate Veterans Association
CUVA engages with faculty, staff, and non-veteran students to increase awareness of issues and challenges faced by undergraduate veterans attending Cornell University, both on-campus and off-campus. Specifically, Cornell veterans are devoted to: mentoring military applicants, supporting newly admitted veterans, educating the community on military issues, and building a strong connection to our veteran alumni.