

Michael Sheng

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 <https://github.com/crystalline>

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Education

Georgia Institute of Technology

Current, B.S., Computer Science

Aug 2024 – Jun 2027 (Anticipated)

GPA: ~ / 4.00

Relevant Coursework: Data Structures & Algorithms • Discrete Math • Multivariable Calculus • Linear Algebra

Experience & Projects

Research Intern

Remote

Los Alamos National Laboratory

Jul 2023 – Oct 2023

- ▣ Collaborated with Li Tang at Los Alamos on vectorization of tensor-related operations in the Polybench benchmark suite and other algorithms using PyTorch and NumPy
- ▣ Improved efficiency by up to 10-20x for BFS traversal on 300k+ edge graphs, FDTD calculations, and Cholesky decompositions compared to traditional implementations

Full-Stack Developer

Project

Floracsm

Jul 2023 – Present

- ▣ Created full-stack climate research crowdfunding website using React, Express, Microsoft SQL Server, Microsoft Azure, and Stripe
- ▣ Implemented custom JWT authentication system, email verification, REST API, and efficient data structures on server-side for handling web traffic and incoming user data
- ▣ Learned fundamentals of system design, responsive design, and production software

Framework Developer & Maintainer

Project

Pixelterm

Feb 2024 – Present

- ▣ Created and currently maintaining Python graphics rendering library for ANSI-based terminals and published on PyPI
- ▣ Implemented NumPy backend to maintain a manipulable and vectorized buffer of pixels, improving rendering efficiency by over 300%
- ▣ Gained experience packaging projects, writing documentation, and developing maintainable code

Student Researcher

Albuquerque, NM

JSTI West 2023

Jun 2023

- ▣ Developed tracer advection modeling framework with student research group and mentor from Los Alamos National Laboratory
- ▣ Applied framework to build open-source proof-of-concept weather forecast tool
- ▣ Improved collaborative skills and project management in a research setting

Discord Application Developer

Project

Wordfish

Jun 2023 – Present

- ▣ Developed Discord application using its Python API to analyze and visualize trends in user message content
- ▣ Designed streamlined user experience and data visualization using automated Excel spreadsheets
- ▣ Deployed and operated on data from thousands of Discord users across multiple large communities

Technical Skills

Languages

Python • Typescript/Javascript • Java • HTML

Tools/Frameworks

React • NumPy • PyTorch • Microsoft Azure • SQL Server • Stripe • Electron • Tensorflow.js • Express.js • Tailwind CSS • REST APIs • JWT • Git • Excel • Web/Frontend Engineering • Deep Reinforcement Learning • Graphic/UI/UX Design