

# Michael Sheng

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 <https://github.com/crystalline>

 <https://msh379.me>

 </in/michael-sheng-1aa558280/>

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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

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## Experience & Projects

### Student Researcher

*Los Alamos National Laboratory*

Remote • Jun 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

### Student @ JSTI West 2023

*ORISE & Defense Threat Reduction Agency*

Albuquerque, NM • 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

### Lead Python Instructor

*Technosmartkids LLC*

Sammamish, WA • Oct 2022 – Jan 2024

- ▣ Led weekly after-school programming lessons at each of two local elementary schools, plus online lessons for introductory and intermediate Python classes
- ▣ Led Python group at summer computing camp, guiding students through the process of building text-based RPG games. Gained experience simplifying concepts for ease of understanding

### Full-Stack Developer

*Floracosm*

Project • 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

*Pixelterm*

Project • Feb 2024 – Present

- ▣ Created and currently maintaining Python graphics rendering library for ANSI-based terminals
- ▣ 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

### Discord Application Developer

*Wordfish*

Project • 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

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## Skills

Python • Typescript/Javascript • Java • HTML • React • Git • Express.js • NumPy • PyTorch • Microsoft Azure • SQL Server • Stripe • Electron • Tensorflow.js

## Interests

Web/Frontend Engineering • Deep Reinforcement Learning • Computer Vision • Graphic/UI/UX Design