Michael Sheng

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https://github.com/crystaltine　　　　https://msh379.me　　　　/in/michael-sheng-1aa558280/

Education

Georgia Institute of Technology　　　　　　　　　　　　**Aug 2024 – Jun 2027 (Anticipated)**
Current, B.S., Computer Science　　　　　　　　　　　　　　　　　　　　　　GPA: ~ / 4.00

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

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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*
Floracosm　　　　　　　　　　　　　　　　　　　　　　　　　　　*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

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Technical Skills

Languages
Python • C++ • Typescript • Javascript • Java • HTML

Tools/Frameworks
React • NumPy • PyTorch • Microsoft Azure • SQL Server • Stripe • Electron • Tensorflow.js • Express.js • Tailwind CSS • REST APIs • JWT • SDL2 • OpenGL • Git • Excel • Full-Stack Development • Deep Reinforcement Learning • UI/Graphic Design