Michael Sheng

425-428-9296 | msh379c@outlook.com | msh379c.me | linkedin.com/in/msh379 | github.com/crystaltine

Education

Georgia Institute of Technology Aug 2024 – *Dec 2026*

Bachelor of Science in Computer Science; ***GPA: 4.0/4.0*** *Atlanta, GA*

Coursework: Data Structures & Algorithms, Computer Architecture, Differential Equations, Multivariable Calculus

Technical Skills

Languages: Python, Rust, C++, C, Java, Protobuf, Typescript, Javascript, HTML/CSS
Frameworks: ReactJS, NumPy, PyTorch, Node.js, Three.js, PostgreSQL, Stripe, NestJS, OpenGL & GLSL, Tauri, Electron, Tensorflow.js, Express, Tailwind CSS, Chakra UI, Material UI
Technologies: Microsoft Azure, SQL Server, REST APIs, gRPC, JWT, Git, Bazel, WSL, Docker, Full-Stack Development, Machine Learning, Neural Networks, Deep Reinforcement Learning, UI/UX Design
Awards: MIT Battlecode 2025 Finalist, 5x MAA AMC Honor Roll/AIME Qualifier

Experience

Software Engineering Intern Jun 2025 – Aug 2025

Carbon, Inc. *Redwood City, CA*

- Designed and implemented more efficient full-stack system with **React**, **NestJS**, and **C++** on innovative 3D print post-processing machine, reducing unit computational requirements and contributing to cutting production costs by **80%** compared to a previous model
- Developed state machines with **Google's Protocol Buffers** to provide safe and accurate user workflow compliant with **IEC/ISO** safety standards
- Handled interfacing with machine microcontrollers using **gRPC**, reducing state and command streaming latency to sub-millisecond times

Research Assistant Jan 2025 – Present

Rahnev Computational Perception Lab @ Georgia Tech *Atlanta, GA*

- Led an independent project under Herrick Fung studying decision confidence of visual perception by modeling human behavior using various **neural network** architectures such as **AlexNet (and other CNNs)** and **RTNet**
- Unwrapped and processed **120,000+ high-dimensional raw data** points obtained from four physical experiments using **MATLAB** and **NumPy** and submitted to the Confidence Database hosted on OSF
- Developed **Bayesian decision & statistical models** to distill differences between artificial and human responses to visual stimuli (e.g. Gabor patches) and differing mechanisms of sensory confidence reporting

Software Developer, Technology Team Nov 2024 – Present

Hexlabs, Inc. *Atlanta, GA*

- Developed live event organization system AppGT for Georgia Tech's flagship HackGT hackathon, deploying software capable of handling **2,500+ participants**
- Created animated frontends for HackGT 2025's event site and HackGT Archive using **React** and deployed using **Cloudflare**, helping gather 1,400+ early-round event applications

Projects

Graphling | *OpenGL, GLSL, ThreeJS, C++* Jul 2025 – Present

- Created a first-person, perspective-enabled **3D graphing calculator** using **ThreeJS** and **WebAssembly**
- Designed chunked **level-of-detail** system to subtantially increase render capacity, enabling drawing graphs to distances reaching ±30,000 x/z
- Implemented multiple methods of graph geometry construction, including **marching cubes**, dynamic **GLSL shaders**, and zero-copy vertex sharing with a C++/WebAssembly calculation engine

Pixelterm | *Python, NumPy, Graphics* Jan 2024 – Jul 2024

- Created 60FPS, 16.7M-color **graphics rendering framework** in Python for rendering images, videos, and graphical applications in the terminal
- Achieved over **300% rendering optimizations** by vectorizing frame buffers with **NumPy** and implementing a specialized **Dirty Rectangles algorithm**
- Packaged framework and published to PyPI with streamlined outward facing API, example projects, and comprehensive documentation, reaching over **1,300 installs**