Eathan Xu

404-509-6547 | xueathan@gmail.com | linkedin.com/in/eathan-xu | https://www.xugazer.com/

Education

Georgia Institute of Technology — Atlanta, GA

M.S. in Computer Science (Computing Systems Specialization) — *Aug. 2024 – May 2026*

B.S. in Physics — *Aug. 2020 – May 2024*

Experience

Systems Engineer & Analyst — Dec. 2024 - Current

Torch Technologies — *Huntsville, AL*

- Architected high-performance computing (HPC) data pipelines to process distributed datasets and train large-scale ML models.
- Conducted comprehensive system analysis on legacy codebases to integrate and validate novel simulation algorithms and classification models.
- Engineered algorithm testing frameworks to benchmark and improve numerical methods and methods against current deployments.
- Presented and created in depth algorithm studies and frameworks for future analysis.

Fluid Mechanics Lab Assistant — June 2023 - May 2024

Georgia Institute of Technology — *Atlanta, GA*

- Developed custom MATLAB and Python for large-scale data processing and pipelining for analysis.
- Fine tuned hyper-parameters and experimental setup for improved experimental performance and efficiency.

Projects

High-Performance GPU Bitonic Sorter | *C++, CUDA, NVIDIA Nsight* — Jan 2025 - May 2025

- Developed a massively parallel bitonic sort kernel leveraging CUDA shared memory, achieving a throughput of 1,250 million elements per second (MEPS) on a 100M element dataset.
- Profiled and minimized host-to-device (H2D) and device-to-host (D2H) latency bottlenecks utilizing NVIDIA Nsight.

Distributed File System | *C++, gRPC, Protobuf* — Aug. 2024 - Dec. 2024

- Engineered a highly scalable, distributed file synchronization system (Dropbox-clone) utilizing gRPC and Protocol Buffers.
- Designed resilient client-server architectures optimizing network transfer protocols over custom raw socket implementations.

Distributed Media & Automation Stack | *Docker, Linux, systemd* — Jan. 2025 - Current

- Architected a self-hosted, containerized deployment stack utilizing Docker on Raspberry Pi clusters.
- Configured custom systemd services to ensure high availability and persistence of background daemons and automated web bots.

Technical Skills

Languages: Python, C/C++, Java, JavaScript, MATLAB, SQL, LaTeX
Systems & Infrastructure: Linux, Docker, gRPC, Protobuf, CUDA, HPC Clusters
ML & AI: Supervised Learning (SL), Reinforcement Learning (RL), Sequential State Models, PyTorch, pandas, NumPy
Tools: Git, NVIDIA Nsight, Jupyter, VS Code, Visual Studio