

Shaochen “Gavin” Ma

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Objective

Seeking a full-time Software Engineering position where I can apply my expertise in C++, Python, and AI-driven systems to build scalable software solutions, while contributing strong problem-solving skills, cross-functional collaboration, and adaptability in fast-paced team environments.

Education

Georgia Institute of Technology

Aug 2024 – Dec 2025

MS in Electrical and Computer Engineering | GPA: 4.0 / 4.0

- *Relevant Courses:* Computer Network, Wireless Network, Machine Learning, SFML, Multithreading, OpenCV, OpenGL, OpenMP, Computer Vision, CUDA, Computer Security, Technology Entrepreneur

University of California, Irvine

Sep 2020 – Jun 2024

BS in Computer Science and Engineering | GPA: 3.731 / 4.0

- *Relevant Courses:* Data Structure & Algorithm, Computer Network, Operating System, Computer Architecture

Technical Skills

Programming: C/C++, Python, Java, TypeScript, Lisp, Prolog

Systems/Tools: Linux, Bash/Shell, CMake, Git, Vim, MATLAB, AI Tools

Networking & Concurrency: TCP/IP, UDP, HTTP, Client-Server, Wireshark

Debugging/AI & Data: GDB, Valgrind, Database, Firebase, React, AI/ML, AI Agent, RAG

Professional Experience

WeKruit LLC | Software Engineer Intern

May 2025 – Aug 2025

- Built a full-stack multimodal interview analysis platform with React and TypeScript, delivering modular components and RESTful data flow with **built-in emotion analysis** for responsive user interaction
- Architected a serverless cloud pipeline for parallel inference and cross-modal scoring, supporting video files up to **2 GB** with **8 MB** chunked uploads and completing analysis within **3 minutes**
- Implemented a **gaze-tracking** module with facial-landmark-based eye region detection and fixation and saccade classification, delivering real-time overlays and heatmaps and surfacing eye-contact and attention metrics

EdgeDevice AI LLC | Machine Learning Engineer Intern

Aug 2022 – Sep 2022

- Developed and implemented statistical and machine learning models in Python to analyze system performance data and predict hardware-related trends such as value fluctuations and pricing
- Built automated testing frameworks to validate model reliability under diverse runtime conditions, improving accuracy and system robustness

Academic Experience

Basketball Shooting Posture Recognition with Time-Series Modeling

Jan 2025 – Apr 2025

- Built a Python pipeline using TensorFlow to classify basketball shooting biomechanics from pose-estimated joint data, achieving **98%** classification accuracy
- Engineered **time-series features**, including normalization, bilateral averaging, and temporal deltas, to enhance sequential modeling performance
- Implemented and compared supervised models, including Transformer and RNN, with unsupervised GMM model, applying stratified sampling for balanced data splits, and evaluated models with precision, recall, and F1 metrics

3D Chess Game with Chess Engine Integration | Software Developer

Oct 2024 – Dec 2024

- Built a fully interactive 3D chess game in C++ using **OpenGL** for real-time rendering, ASSIMP for 3D asset loading, and the Komodo engine for AI-based gameplay
- Designed a modular class architecture to manage chess pieces, board rendering, and move validation, improving code maintainability and scalability
- Implemented dynamic lighting and camera controls; optimized rendering performance using shaders, texture mapping, and GPU acceleration

Autonomous Rover with Multi-Sensor Fusion and Object Detection | Software Developer

Oct 2023 – Mar 2024

- Developed an autonomous rover system using Python, ROS, and Jetson Nano Orin, integrating Pixhawk, GPS, depth camera, and RPLiDAR to reconstruct 3D environments; applied semantic segmentation to enhance obstacle detection
- Implemented real-time path planning and waypoint navigation algorithm with **75%** accuracy in outdoor environment
- Integrated MAVLink telemetry and managed multi-protocol communication (UART, I2C, TCP/IP, IEEE 802.11) for sensor coordination and system control