Kaiji Fu

kaiji@unc.edu | (252) 267-0412 | Github/Linkedin: kaijif | US Citizen | Software engineer searching for internships

EDUCATION

University of North Carolina at Chapel Hill – Chapel Hill, NC **May 2026**
Computer Science, B.S. | GPA: 4.0 | Carolina Scholar (full scholarship, top 1%) | Honors (top 10%)
Relevant Coursework: Computer Organization, Data Structures, Algorithms & Analysis, Foundations of Programming (**Java**)

PROFESSIONAL EXPERIENCE

Mozilla – Open-Source Contributor **2023 - Present**
Contributing to Mozilla's bugbug project by implementing critical fixes in collaboration with core maintainers.

- Actively contributed to Mozilla's bugbug project, an **AI-powered** bug classification system written in **Python** that uses **machine learning** to automate bug triage across Firefox repositories
- Collaborated with core project maintainers through **GitHub issues** and **code reviews**, **merging 10+ 200+ line commits** that resolved a critical type-checking issue

Pitt Pirates Robotics Club - Software Engineer
- Aug 2022 – Present

- Designed and trained a custom YOLOv7 **deep neural network** using **OpenCV/PyTorch**, achieving 95% accurate real-time object detection for competition elements such as game pieces and field markers
- Collaborated with engineering team to successfully deploy the object detection model on an **NVIDIA Jetson**, configuring an **Ubuntu Linux** environment and optimizing **CUDA** acceleration for real-time performance
- Implemented a **MQTT** communication protocol between the Jetson and the robot's main controller with **Java** for reliable, low-latency data transfer in competition environments
- Collaborated with team to engineer and implement path-following algorithms for autonomous navigation in **Java**

PERSONAL PROJECTS

Nolyn - https://nolyn.co/ **2023 - Present**
Founded a startup to build a smarter stop-arm camera with a 5-person team, reducing costs from $3,000 to $30 ***(100x)***

- Developed a cost-effective **IoT** stop-arm camera solution with **C/RTOS**, integrating **real-time image capture**, **wireless connectivity**, and **secure cloud interactions** via **AWS** (**DynamoDB database**, **S3**, **MQTT**)
- Developed a custom **HTTP client** in **C++** from the ground up to enable secure cloud interactions, addressing limitations in existing libraries and successfully implementing form-data POST requests required for S3 integration
- Implemented a **REST API** with **API Gateway and Lambda** to interface with the cloud, built a **ReactJS** admin portal for school officials to review violations
- Automated deployments with **GitHub Actions CI/CD**, reducing deployment times by **100x**
- Successfully deployed on Pitt County Schools' **200+ buses**, won the **Congressional App Challenge**, and secured a **$1,000 Amazon grant** in recognition of the project's innovative approach to student safety

ACADEMIC RESEARCH

UNC School of Medicine - ***Machine Learning-Enhanced Electrocardiograms*** - Researcher **2024 - Present**
*Collaborating with a UNC School of Medicine cardiologist to leverage **AI** for cardiac anomaly detection.*

- Developed a robust data preprocessing pipeline using **Python**, **Pandas,** and **SciPy** to normalize ECG waveforms
- Implemented **CNN** and **transformer** architectures—the same technology powering modern **LLMs** like ChatGPT—to detect cardiac anomalies.
- Leveraged high-performance **Linux-based SLURM** environments to train computationally intensive models on large-scale medical datasets

SKILLS

Languages: Python, **Java**, JavaScript, TypeScript, C/C++, SQL, CSS, HTML, Rust

Tools/Frameworks: PyTorch, TensorFlow, machine learning, AI, LLMs, Linux, Git, CI/CD, AWS, Docker, embedded applications, Figma, RESTful API design, database design, web development, React, Svelte, Angular