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 **Jun. 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**)

PERSONAL PROJECTS

Nolyn - https://nolyn.co/ May 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/embedded** stop-arm camera solution on ESP32, integrating **real-time image capture**, **wireless connectivity**, and **secure cloud interactions** via **AWS** (**DynamoDB** database, **S3**, **API Gateway**, **Lambda)**
- Built a **ReactJS** admin portal for school officials to review violations, automated deployments with **GitHub Actions**, and implemented **cloud-based motion detection** for accurate stop-arm violation detection
- 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

PROFESSIONAL EXPERIENCE

Pitt Pirates Robotics Club – Chapel Hill, NC - Software Engineer Aug 2022 – Present

Led robotics club's AI development, creating and deploying a high-accuracy computer vision system for autonomous navigation.

- Designed and trained a custom YOLOv7 AI deep neural network using 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 model on an NVIDIA Jetson edge processor
- Configured a bespoke **Ubuntu Linux** environment and optimized CUDA acceleration for real-time performance
- Implemented a **MQTT** communication protocol between the Jetson and the robot's main controller for reliable, low-latency data transfer in competition environments

Mozilla – San Francisco, CA (Remote) – Open-Source Contributor Dec. 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 a 200+ line commit** that resolved a critical type-checking issue

ACADEMIC RESEARCH

UNC School of Medicine - ***Machine Learning-Enhanced Electrocardiograms*** - Researcher Sep. 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: Embedded applications, Linux, UART debugging, PyTorch, TensorFlow, machine learning, AI, LLMs, Linux, Git, CI/CD, AWS, Docker, Figma, RESTful API design, database design, web development, React, Svelte, Angular