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 **embedded IoT** stop-arm camera solution with **C/RTOS**, integrating **real-time image capture**, **wireless connectivity**, and **secure cloud interactions** via **AWS** (**DynamoDB** database, **S3**, **API Gateway**, **Lambda**, **MQTT**)
- 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

ACADEMIC RESEARCH

UNC-Chapel Hill School of Medicine - ***Machine Learning-Enhanced Electrocardiograms*** Sep. 2024 - Present

*Collaborating with a UNC School of Medicine cardiologist to leverage **AI** for cardiac anomaly detection.*

Researcher

- 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

East Carolina University - ***Privacy-First AI: Implementing Federated Learning in Healthcare*** Feb. 2020 - April 2023

*Using **federated machine learning** to enhance privacy and security in healthcare data analysis*

Lead Author

- Engineered a federated learning pipeline in **Python** using **TensorFlow**, enabling **decentralized model training** across multiple healthcare institutions while preserving patient data privacy
- Employed **Pandas** and **NumPy** libraries to perform comprehensive data processing, cleansing, and transformation for improved model accuracy and performance across **distributed systems**
- Demonstrated that federated modeling maintains **>95% accuracy** while eliminating the need for cross-institutional data sharing, empowering researchers to train much more robust diagnostic models
- **Presented research** at the ISS Symposium at East Carolina University, where it won **Best Poster**

PROFESSIONAL EXPERIENCE

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 10+ 200+ line commits** that resolved a critical type-checking issue

SKILLS

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

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