KAIJI FU

kaiji@unc.edu | (252) 267-0412 | Github/Linkedin: kaijif | US Citizen

EDUCATION

University of North Carolina at Chapel Hill – Chapel Hill, NC — Expected Jun 2026

Computer Science, B.S.

GPA: 4.0 | Carolina Scholar (full scholarship, top 1%) | Honors (top 10%) | Information Science Assured Admit

PERSONAL PROJECTS

Nolyn – Greenville, N.C. — May 2023 - present

Developed a smarter stop-arm camera with a 5-person team, cutting costs by 100x ($30 vs. $3,000) - https://nolyn.co/

- Built an IoT camera on the ESP32 platform with C++/RTOS and a web interface with JS/React
- Designed AWS cloud infra with NoSQL DB, RESTful APIs, and an MQTT to communicate with cameras.
- Designed a modern and reactive frontend with Figma and built it with ReactJS
- Coordinated closely with stakeholders and working on deploying on Pitt County Schools' 200+ buses
- Received a $1,000 grant from Amazon

ACADEMIC RESEARCH

Machine Learning-Enhanced Electrocardiograms — Sep 2024 - present

Leveraging convolutional neural networks (CNNs) and transformers to detect cardiac anomalies with high accuracy.

Researcher

- Implemented convolutional neural networks (CNNs) and transformer architectures—the same technology powering modern LLMs like ChatGPT—to detect cardiac anomalies
- Developed robust data preprocessing pipeline using Pandas and SciPy to normalize ECG waveforms
- Leveraged high-performance computing infrastructure and Linux-based environments to train computationally intensive models on large-scale medical datasets
- Collaborated with cardiologists to validate model outputs against expert clinical diagnoses

Implementing a Federated Learning System to Protect Patient Privacy — Feb 2020 - April 2023

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

Lead Author

- Used TensorFlow to train federated models and Pandas/NumPy to perform data processing.
- Demonstrated that federated modeling maintains >95% accuracy while eliminating cross-institutional data sharing requirements
- Presented my findings at East Carolina University's ISS Symposium

LEADERSHIP AND COMMUNITY INVOLVEMENT

Pitt Pirates Robotics Club– Chapel Hill, NC — Aug 2022 – Jun 2024

Software/R&D

- Trained a custom deep neural network with PyTorch to achieve real-time object detection.
- Deployed model on the NVIDIA Jetson platform, a Linux-based CUDA-enabled edge processor

The Daily Reflector – Greenville, NC — Dec 2022 - present

Regularly featured voice for my local newspaper (est. 1894)

Columnist

- Published 10+ editorials on technology and its effects on the place I call home

Mozilla – San Francisco, CA (Remote) — Dec. 2023 - present

Open-Source Contributor

- Contributor to bugbug, a Mozilla project aimed at using ML to classify bugs
- Merged a 200+ line commit to fix an open issue related to type checking

SKILLS

Languages/Tools: Python, JavaScript, Java, Rust, C/C++, PyTorch, TensorFlow, React, Svelte, Figma, Linux, Git, GitHub, CI/CD, AWS, Docker, Kubernetes, embedded applications, machine learning, AI, LLMs, and open-source software