

# KAIJI FU

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## 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
- Communicated with maintainers and merged a 200+ line commit that fixed an issue related to type checking

## SKILLS

**Languages/Tools:** Python, JavaScript, Java, Rust, C/C++, PyTorch, TensorFlow, Figma, Linux, Git, CI/CD, AWS, Docker, embedded applications, machine learning, AI, LLMs, and open-source software, RESTful API design, database design, web development, React, project management, cross-functional collaboration