

# 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

## EXPERIENCE

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/>

Founder

- Built an IoT camera on the ESP32 platform with C++/RTOS and a web interface with JS/React
- Designed AWS cloud infrastructure with NoSQL DB, RESTful APIs, and an MQTT to communicate with cameras.
- Coordinating 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

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

Researcher

- Developing a data preprocessing pipeline using NumPy, Pandas, and SciPy to interpret ECG waveforms.
- Experimenting with federated learning to ensure patient data privacy, allowing decentralized training across institutions.
- Conducting model evaluations using sensitivity, specificity, and AUC-ROC metrics to optimize clinical applicability.

***Implementing a Federated Learning System to Protect Patient Privacy***

Feb 2020 - April 2023

*Researched leveraging federated machine learning to enhance privacy and security in healthcare data analysis.*

Lead Author

- Used TensorFlow-Federated to train federated models and Pandas/NumPy to perform data processing.
- Demonstrated that federated modeling results in a <5% loss in accuracy while eliminating the need to share data
- Presented my findings at East Carolina University's ISS Symposium.

## LEADERSHIP AND COMMUNITY INVOLVEMENT

Pitt Pirates – Greenville, NC

Aug 2020 – Jun 2020

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
- Designed website with Figma and built it out with Tailwind CSS/Vercel

***The Daily Reflector*** – Greenville, NC

Dec 2022 - present

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

Columnist

- Published 10+ editorials on issues ranging from technology to economic policy.

***Mozilla*** – San Francisco, CA (Remote)

Dec. 2023 - present

Open-Source Contributor

- Contributor to bugbug, a Mozilla project aimed at using ML to classify bugs

## SKILLS

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**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