

# Kaiji Fu

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## 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