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| **Kaiji Fu**  [kaiji@unc.edu](mailto:kaiji@unc.edu) | (252) 267-0412 | Github/Linkedin: kaijif | US Citizen | Experienced software engineer searching for internships | | |
| **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 | | |
| **PROFESSIONAL EXPERIENCE** | | |
| **Mozilla** – San Francisco, CA (Remote) – Open-Source Contributor | Dec. 2023 - Present | |
| *Collaborating with core maintainers to contribute to Mozilla's bugbug project by* ***implementing critical type checking fixes*** | | |
| * Actively contributedto 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**, iteratively refining the solution based on feedback from senior Mozilla engineers and **merged** **a 200+ line commit** that fixed an issue related to type checking | | |
| **Pitt Pirates Robotics Club** – Chapel Hill, NC - Software Engineer | Aug 2022 – Present | |
| ***Led robotics club’s AI development****, creating and deploying a* ***high-accuracy computer vision system for autonomous navigation****.* | | |
| * Designed and trained a custom YOLOv7 **deep neural network** using **Python**/**PyTorch**, achieving **95% accurate real-time object detection** for competition elements such as game pieces and field markers * Partnered with engineering team to **successfully deploy** the object detection model on an NVIDIA Jetson **edge processor**, configuring an **Ubuntu Linux environment** and **optimizing CUDA acceleration** for real-time performance * Implemented a **MQTT communication protocol** between the Jetson and the robot's main controller for **reliable, low-latency data transfer** in competition environments | | |
| **PERSONAL PROJECTS** | | |
| **Nolyn** – Greenville, N.C. *-* <https://nolyn.co/> | May 2023 - Present | |
| *Founded a startup to build a smarter stop-arm camera with a 5-person team,* ***cutting costs by 100x*** *($30 vs. $3,000)* | | |
| * Developed a cost-effective **IoT** stop-arm camera solution on ESP32, integrating **real-time image capture**, **wireless connectivity**, and **secure cloud interactions** via **AWS** (**DynamoDB**, **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 piloted with 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 | |
| *Leveraging* ***convolutional neural networks (CNNs)*** *and* ***transformers*** *to detect cardiac anomalies with high accuracy.* | | |
| *Researcher* | | |
| * Developed robust data preprocessing pipeline using **Pandas** and **SciPy** to normalize ECG waveforms * Implemented **convolutional neural networks (CNNs)** and **transformer architectures**—the same technology powering modern **AI LLMs** like **ChatGPT**—to detect cardiac anomalies * Leveraged high-performance **Linux-based SLURM** environments to train intensive models on large-scale medical datasets * Collaborated closely with UNC School of Medicine cardiologists to **validate model outputs** against expert clinical diagnoses | | |
| **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 an advanced **machine learning** pipeline utilizing **TensorFlow** to train **federated learning models** * 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, making training robust models much easier and **presented my findings** at the ISS Symposium | | |
| **SKILLS** | | |
| **Skills:** 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, growth mindset, enthusiastic learner | | |