KAIJI FU

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EDUCATION

University of North Carolina at Chapel Hill May 2026

B.S. Computer Science and Mathematics | GPA: 4.0 | Carolina Scholar (full scholarship, top 1%) | Honors College (top 10%)

EXPERIENCE

Software Engineering Intern, Full Stack - *Ember Learning* May 2024 – Aug 2024

- Completed a summer internship at an **AI** education platform, helping increase **MAU by 100x** and **revenue by 1000x**
- Shipped an **AI** grading feature by building **20+** responsive user interface components using **TypeScript** and **React**
- Built scalable **AWS** backend supporting **100,000+ users** and **3M+ AI-graded questions**, generating **$40k+ in ARR**
- Implemented fine-tuning pipelines for **LLMs**, improving grading accuracy across diverse standards by more than **60%**

Software Engineer, Open Source - *Mozilla* Dec 2023 – Present

- Contributed to Mozilla's bugbug project, a bug classification system that uses **ML** to triage **10k+** Firefox bugs/month
- Implemented critical fixes in **Python** to type-checking issues, merging **2000+** lines of code over **20+ pull requests**
- Collaborated with core maintainers through **GitHub issues** and **code reviews** to ensure code quality and compatibility

Research Assistant (AI/ML) - *UNC School of Medicine* Nov 2024 – Present

- Collaborated with cardiologists to develop **transformer architectures** to analyze ECGs and detect cardiac anomalies
- Used **Python** and **Tensorflow** on **high-performance Linux** to achieve **11% higher accuracy** than the state of the art

Research Assistant (AI/ML) - *ECU School of Medicine* Sept 2022 – Feb 2023

- Researched how federated (distributed) **machine learning** enhances patient privacy in healthcare data analysis
- Demonstrated using **Python (Pandas, TensorFlow)** that federated modeling maintains **95%+** accuracy while eliminating the need for cross-institutional data sharing, empowering researchers to train much more robust models
- Won Best Poster at the ISS Symposium, where I presented findings to faculty, industry partners, and fellow researchers

PROJECTS

Nolyn | *AWS/cloud, React, full-stack, C/C++, RTOS, embedded development/debugging* May 2023 – Sept 2024

- **Founded a startup** to build stop-arm cameras for school buses (automated systems that capture license plates of vehicles illegally passing stopped buses) at **100x lower cost** than competitors ($30 vs up to $3,000 each)
- Built microcontoller firmware with **C/RTOS** and connected it to **AWS** for real-time image capture and analysis
- Engineered **full-stack cloud application** with **AWS** (**DynamoDB**, **S3**, **Lambda MQTT**) and **ReactJS** admin portal
- Deployed on **2000+** buses across **10+** school districts and secured **$1k+** in venture capital from investors like Amazon

Blackbeard | *OpenCV, PyTorch, CUDA, robotics, embedded development, computer vision* Aug 2022 – May 2024

- Trained an AI object detection model with **OpenCV/PyTorch** to **4x self-driving** performance in a robotics competition
- Deployed the model on an **embedded Linux** coprocessor, achieving **95%** accurate real-time detection of field elements
- Implemented **MQTT** protocol with **C++** and **Java** to connect coprocessor and robot controller for reliable data transfer

72o | *Python, Numpy, Pandas, Machine Learning, Game Theory* Feb 2025

- Collaborated with team of 4 to build a pokerbot with **Python** that placed **1st/112** in the UNC Pokerbots competition
- Applied **counterfactual regret minimization (CFR)** algorithms to develop game-theory optimal betting strategies
- Engineered an opponent modeling system capable of adapting to opponent patterns, increasing winrate by **32%**
- Leveraged **multi-threading** to parallelize decision-making, decreasing latency by **3x** and avoiding disqualification

TECHNICAL SKILLS

Languages: Python, Java, JavaScript, TypeScript, C/C++, SQL, Rust, Golang, HTML/CSS
Frameworks: React, PyTorch, TensorFlow, Pandas, Svelte, Angular, Flask, TailwindCSS, FastAPI
Developer Tools: Git, Docker, CI/CD, AWS, Linux, Kubernetes, CUDA, NVIDIA Jetson, Figma
Domain Knowledge: Machine Learning, AI, LLMs, Computer Vision, IoT, Embedded Systems, RESTful APIs