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

- Delivered a **LLM** grading feature with **100k+ users** at an AI education company, helping generate **$40k+** in ARR
- Built **20+** responsive UI components using **TypeScript** and **React** and engineered **AWS** backend with **Terraform**.
- 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** for 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 a **SLURM/Linux** environment to achieve **11% higher accuracy** than 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 when training diagnostic models
- Demonstrated that federated modeling maintains **95%+** accuracy while obviating cross-institutional data sharing
- 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 – Dec 2024

- Founded a startup that built a camera to capture license plates of vehicles illegally passing buses for **100x** lower cost
- Developed microcontoller firmware with **C/RTOS** and connected it to **AWS** for real-time image capture and analysis
- Engineered a **full-stack cloud application** with **AWS** and a **ReactJS** admin portal, providing **100%** real-time visibility
- 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 2023

- 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 strategie
- Engineered an opponent modeling system capable of adapting to villain's play patterns, increasing winrate by **32%**
- Leveraged **multi-threading** to parallelize decision-making, decreasing latency by **3x** and avoiding disqualification

Loggerhead | *Swift, AWS, PostgreSQL, iOS development, RESTful APIs* Jan. 2021 – Feb. 2024

- Developed a **full-stack iOS application** in **Swift** to track and analyze tennis practice sessions with ball machines
- Designed and implemented a **RESTful API** using **AWS Lambda** and **API Gateway** to store and retrieve user data
- Created a robust data model with **PostgreSQL** for tracking practice metrics, ball machine settings, and analytics
- Implemented progress visualization with **SwiftUI**, helping users track improvement through data-driven insights

TECHNICAL SKILLS

Languages: Python, Java, Kotlin, JavaScript, TypeScript, HTML5, CSS, SQL, C, C++, Go, Swift, PHP, C#, Bash
Frameworks: Object-Oriented Programming, React, PyTorch, TensorFlow, Pandas, Vue.js, Angular, JUnit
Developer Tools: PostgreSQL, Git version control, AWS, Azure, NodeJS, CI/CD, Linux, CMake, Bazel
Domain Knowledge: Robotics, Machine Learning, AI, Computer Vision, Regressions, Decision Trees, Neural Networks
Coursework: Object-Oriented Programming, Networking Fundamentals, Data Structures, Algorithms & Analysis, Optimization