WENJIA ZHANG

Tel: +1-6468216047   Email: wz2647@columbia.com   LinkedIn: [wzhang0820](#)   Portfolio: [cfbrh.github.io/portfolio/](#)

EDUCATION

Columbia University in the City of New York   New York, US
M.S. in Computer Science – Machine Learning Track   May 2024
- Relevant Courses: Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Cloud Computing, Software Engineering (SaaS), Databases, Artificial Intelligence

University of Electronic Science and Technology of China   Sichuan, China
B.S. in Information Security   June 2019
- Relevant Courses: Data Structures and Algorithms, Computer Networks, Operating Systems, Programming in C/C++, System Security, Cryptography

TECHNICAL SKILLS

- **Languages**: Python, C++, JavaScript, Swift, Golang
- **Systems & Tools**: Linux, REST APIs, TCP/IP, Git, GitHub
- **ML/AI**: TensorFlow, PyTorch, scikit-learn, SpaCy, CoreML, CreateML, Generative AI (Gemini API, OpenAI API)
- **Cloud & DevOps**: AWS (EC2, S3, ECS, DynamoDB), GCP (Compute Engine, Cloud Functions), Heroku, Hadoop, Docker, Kubernetes, Terraform, CI/CD
- **Web & DB**: HTML, CSS, React, Node.js, Flask, TypeScript, GraphQL, PostgreSQL, MongoDB, Firebase
- **iOS & AR**: SwiftUI, UIKit, ARKit, AVFoundation, Unity, CocoaPods, Swift Package Manager (SPM)

WORKING EXPERIENCE

China Mobile Communications Group Co.,Ltd.   Anhui, China
System Support Engineer, Business Support Center   Jul 2020 - Sep 2021
- **Led** the development of a cloud-based e-commerce platform using **React** and **Python**, integrating a **collaborative filtering recommendation algorithm** based on user behavior, resulting in a **1.8% monthly revenue increase**
- Maintained and optimized **RESTful APIs** with **multi-threading** and **concurrency**, ensuring high availability and low-latency data delivery across millions of requests
- Applied **TCP/IP**, **HTTP**, **DNS**, and **SSL/TLS** protocols to strengthen secure communications in enterprise systems
- Administered **1M+ user records** via **MySQL**, implementing Role-Based Access Control (**RBAC**) to prevent unauthorized access
- Collaborated in a **12-person Agile team**, enhancing system scalability and fault tolerance of distributed infrastructure

PROJECTS

Independent Software Projects   Sep 2024 - Present
- Engineered a note-taking web app using **React** and **state management**, enabling intuitive task creation and real-time deletion via interactive UI components (*[CodeSandbox](#)*)
- Built an iOS video editor using **AVFoundation** & **AVKit**, supporting video trimming, voice recording and visual overlays(*[Demo](#)*)
- Created a secure real-time messaging app with **Firebase Firestore** & **Authentication**, delivering instant message updates *([Demo](#))*
- Designed a collaborative travel tracking system using **Node.js**, **Express** and **PostgreSQL**, allowing multi-user map marking and journey visualization *([Demo](#))*
- Developed an AR flower recognition app powered by **CoreML** with custom-trained models, integrating **SwiftyJSON** and **Alamofire** to retrieve data from Wikipedia *([Demo](#))*

Movie Chatbot Using MongoDB and OpenAI API (*[Certificate](#)*)   Apr 2024 - Apr 2024
- Ingested and embedded movie data in **MongoDB Atlas** for vector-based semantic retrieval
- Developed a **Node.js** backend using **Express** and **Retrieval-Augmented Generation (RAG)** with **OpenAI API**
- Built a **React** frontend to enable user interaction with an LLM-powered chatbot for movie-related queries

LLM-Powered Search Optimization on GCP (*[Code](#)*)   Jan 2024 - Apr 2024
- Designed and deployed **information retrieval** models on **GCP Compute Engine** and **Cloud Functions,** integrating **LLM** to improve query interpretation
- Applied the **Rocchio algorithm** for iterative query refinement based on user feedback, improving top-k search relevance after each iteration
- Integrated **Google Search API**, **SpaCy**, and **SpanBERT** for named entity recognition and semantic query expansion, enhancing query understanding and efficiency

Second-Hand Marketplace Platform (Team of 4) (*[Code](#)*)   Oct 2023 - Dec 2023
- **Led** full-stack development using **Ruby on Rails**, **React**, and **Kubernetes**, deploying **microservices** with **Terraform**
- Built **REST APIs** for product creation and listings, and authentication(incl. **Google OAuth**), deployed on **AWS EC2 & S3**.
- Implemented **CI/CD pipelines** using **Jenkins**, **Docker**, and **Rspec/Cucumber** with 100% **BDD/TDD** coverage