Feng Ruiqi

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EDUCATION

Huazhong University of Science and Technology Sept. 2022 - present

- **Major:** Computer Science and Technology
- **GPA:** 86.04/100

National University of Singapore - School of Computing (ngne) Aug. 2025 - present

- **Courses:** Computer Vision and Pattern Recognition (CS4243) ,Software Engineering Principle (CS3219), Computer Graphics (CS3241)

EXPERIENCE

HGTECH Company Limited AI Algorithm Intern Jun. 2025 – Jul. 2025

- Converted medical textbooks into structured JSON datasets to build a clinical knowledge base.
- Developed and refined a RAG pipeline using LangChain and ChromaDB, combining bge-m3 embeddings and CrossEncoder re-ranking to match the most likely diseases based on patient symptoms.
- Designed patient-style evaluation prompts and automated testing scripts to verify medical retrieval accuracy.

NUS SOC Summer Workshop May. 2024 - Jul. 2024

Web Mining - SmartChef: A Model-Based Recipe Generator, *core member*

- Employed a Cosine Similarity matrix to recommend the top 5 most similar recipes based on user preferences.
- Achieved a silhouette score of 0.6109 for clustering in the preference model using the DBSCAN algorithm.
- Built a Vue 3 front-end featuring over 40 ingredient choices and dynamic recipe recommendations.
- Integrated the large language model module into the system to create innovative recipes.

PROJECTS

CAPTCHA Recognition System Oct. 2025 - Nov. 2025

- Preprocessed over 7K CAPTCHA images and applied precise character segmentation techniques to build a labeled dataset covering 36 alphanumeric classes for supervised training.
- Built a baseline 3-block CNN classifier for alphanumeric recognition, achieving 84.72% character-level accuracy on 1.9K testing images with balanced class representation.
- Designed a two-stage enhancement approach combining autoencoder-based representation pretraining and targeted data augmentation, improving generalization and raising accuracy to 88.33%.
- Developed a training and evaluation pipeline with data splitting and confusion-matrix analysis to diagnose errors and improve segmentation quality.

PeerPrep Collaborative Coding Platform Sept. 2025 - Nov. 2025

- Architected the Collaboration Service using WebSocket, Y.Doc (CRDT), and Redis Pub-Sub to enable low-latency real-time code editing and synchronization between paired users.
- Designed and implemented a high-performance Code Execution Service supporting Python/JS/C++ with real-time compilation, test case validation, and detailed result feedback.
- Developed frontend interfaces including dynamic problem display and submission history dashboards, integrating Monaco Editor for enhanced coding experience.

AWARDS & CERTIFICATES

Score of 220 (top 15%) in CCF Certified Software Professional transcript Dec. 2024

First Prize for National English Competition for College Students Jun. 2023

SKILLS

Languages: Mandarin (native), English (IELTS: 7.5, CET-6: 654)

Programming Languages: C++, C, Java, Python, SQL, HTML/CSS/JavaScript, TypeScript

Technologies & Tools: TensorFlow, PyTorch, LangChain, OpenCV, Vue.js, MySQL, MongoDB, Neo4j, Redis, Kafka, Docker, Kubernetes, Git