ZHOU Fangyanuo

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Education Background

South China University of Technology, "Software Engineering + Business Administration" Dual Degree Pilot Program, *Bachelor* 2023.9 - 2027.6

- Weighted Average Score: 92.24/100 (**Ranked 1st in Grade**), GPA: 3.95/4.00 (**Ranked 1st in Grade**)
- Major Courses: Data Structures(95), Comprehensive Software Development Training(96), Advanced C++ Programming(90), Database System(94), Discrete Mathematics(94), Engineering Mathematical Analysis(93), Engineering Graphics(93), College Physics(100), Probability and Statistics(96), Circuit and Electronic Technology(99), Corporate Finance(98), Microeconomics(87), Macroeconomics(94), Principles of Management(91), etc.
- **IELTS overall: 8.0/9.0**, GRE: V 161/170; Q 170/170, CET-4: 632/710, CET-6: 642/710
- Attended 2024 International Conference on Computer Science, Electronic Information Engineering and Intelligent Control Technology (CEI2024) and 2025 Annual Conference on Intelligent and Computational Communication.
- **Awarded tuition-free place in HKUST Summer School 2025 (English-taught, 4 spots university-wide)**.

Project Experience

Interdisciplinary Research on News Communication and Large Models, Research Assistant 2024.5 - Present

- *Introduction*: **Supervised by Associate Professor Quanyi ZOU**. Conducted interdisciplinary research on news dissemination and large models, including LLM value alignment, multimodal **fake news detection**, multi-task fake news detection models, agent-based news dissemination simulation, sentiment analysis, **hallucination research**, and text readability analysis. It also includes recommender-system-related fake news studies, such as text-level comparisons between generative **recommender systems** and traditional recommender systems, and the propagation effects of fake news within recommender systems.
- *My Responsibility*: 1) Core work: Agent simulation of news dissemination process, designing intervention experiments and ablation studies. Innovatively implemented a multi-functional machine learning fake news detection model. 2) Supporting work: Used Python for web scraping to collect news from domestic and international websites, utilized large AI models for batch content summarization and value system analysis, gained experience with various neural network frameworks and popular deep learning architectures, participated in writing research background and related knowledge sections of papers. 3) Competition participation: Participated in social simulation competition, involved in prompt design and cloud-based distributed deployment of project code.
- *Achievements and Gains*: Contributed to paper writing and open-source development. **A co-authored paper on multimodal fake news detection (*CMLE*) has been accepted for publication in IEEE Transactions on Consumer Electronics** (https://doi.org/10.1109/TCE.2026.3677445). A co-authored paper on counterfactual contrastive explanations for smart contract vulnerability detection is under review at IEEE Internet of Things Journal, and a paper on multi-task fake news detection is in progress. Open-source work includes WeSpeak (https://github.com/KGoinger/WeSpeak), and one patent application is pending.

Multimodal AI Mental Health Coaching System, Research Assistant 2026.5 - Present

- *Introduction*: **Supervised by Associate Professor Yuanyuan DANG**. This project aims to develop a multimodal AI psychological coaching system for college students and evaluate its causal intervention effect on the mental health of college students through rigorous randomized controlled trials. The project integrates large language models, multimodal perception technology and evidence-based psychological intervention methods.
- *My Responsibility*: 1) Developed a Linux-deployed AI coaching system integrating multiple RAG knowledge bases and MCP-based tool interfaces. 2) Contributed to a randomized controlled trial designed to evaluate the causal effects of AI-assisted interventions on university students'mental health. 3) Contributed to system implementation and manuscript preparation.
- *Achievements and Gains*: Project context later shifted to mental health departments. Through this project, connected with excellent senior students and maintained subsequent cooperation and communication. Enriched experience working in cross-functional and highly structured teams.

AIGC Medical Case Generation Project, Developer 2024.7 - 2024.12

- *Introduction*: **Supervised by Associate Professor Yuanyuan DANG**. Project uses generative AI to generate formatted medical records, focusing on solving issues of repetitive labor, timeliness delays, and uneven quality in medical record writing. Through in-depth research on medical dialogues and advanced AIGC algorithms, aims to achieve automated and intelligent generation of outpatient medical records.
- *My Responsibility*: 1) Participated in early-stage speech-to-text work (using Whisper model), Qwen model fine-tuning, and prompt engineering. 2) Set up local proxy and firewall access. 3) Conducted batch testing and effect adjustment of mid-stage data.
- *Achievements and Gains*: Project context later shifted to mental health departments. Through this project, connected with excellent senior students and maintained subsequent cooperation and communication. Enriched experience working in cross-functional and highly structured teams.

Participated in Wanbang Xingxing Charging Technology charging pile site selection project within the same research group, summarized CSLP model from review paper and presented findings.

Mining Simulation and Analysis of Tourism Trajectory Data, Developer 2025.8 - Present

- *Introduction*: Project built a visitor behavior simulation platform based on Python and Vue using official platform data combined with web crawler data, exploring whether tourists' travel route choices are influenced by social media platforms.
- *My Responsibility*: Implemented time filtering function and improved data visualization module, achieved important functional modules including multi-day repeated population addition and temporary scenic spot closure.
- *Achievements and Gains*: Project expected to produce at least one paper; enriched practical software system development experience, helped learn how to adapt to high-demand development standards.

Agricultural Automatic Evaluation R&D Project, Developer 2025.7 - 2026.2

- *Introduction*: Project uses computer vision to achieve efficient evaluation of livestock breeding effects, built independently developed data annotation platform, achieved target weight recognition through training YOLO series models.
- *My Responsibility*: Conducted research and code implementation on keyframe recognition algorithms, used YOLOn11pose model to solve challenges in livestock body keypoint identification.
- *Achievements and Gains*: Data annotation platform delivered for enterprise acceptance in December 2025, algorithms still in iterative phase. Enriched knowledge reserve and practical experience in computer vision field.

Publications

- Q.-Y. Zou, G. Chen, **F. Zhou**, X.-K. Wu, Z.-Y. Yang, Y.-Y. Shi. "CMLE: A Collaborative LoRA-Enhanced Expert Framework for Multimodal Fake News Detection." *IEEE Transactions on Consumer Electronics*, 2026. Accepted. doi:10.1109/TCE.2026.3677445
- Y.-Y. Shi, **F. Zhou**, Y.-K. Wang, Q.-Y. Zou, H.-J. Song. "Towards Secure Blockchain-based IoT: Accurate and Explainable Smart Contract Vulnerability Detection via Counterfactual Contrastive Explanations." Under review at *IEEE Internet of Things Journal*, 2026.

Technical Skills

Programming Languages: C++(Solid), Java(Fluent), Python(Proficient in data crawling and deep learning), MySQL(Fluent)

Technical Frameworks: Flask, Vue, Docker, Bigdata Frameworks , Deep Learning Frameworks, Distributed Architecture, RPC

Language Skills: Fluent English (IELTS overall: 8.0/9.0), Basic German (Duolingo reached S3U22, completed SCUT "German Oral Communication" course)

Other Skills: Proficient in AI-assisted programming with rich experience (familiar with Trae, Copilot and Claude Codeand methodology; capable of video editing and music production; skilled in Office software (especially PPT drawing); Piano Grade 10 certificate

Awards and Honors

Motivational Student Award, Hua Xun • Yun Jie Scholarship 2023.09
Outstanding Individual, 2023-2024 SCUT Student Military Training 2024.01
First Place, ModelScope Community Large Model Application Development Practical Team 2025.02
First Prize, Guangdong Region, 2025 "Shenzhen Cup" Mathematical Modeling Challenge 2025.06
First Prize, Guangdong Region, 2025 National Mathematical Modeling Competition 2025.10
National Finalist, 2025 China International College Students Innovation Competition 2025.10
Meritorious Winner, 2026 COMAP's Interdisciplinary Contest in Modeling (ICM) 2026.05