Zhongsheng Wang

jkwzs0429@gmail.com linkedin.com/in/zhongsheng-wang-095804278 github.com/Wzs010429 jkwzs.cn

Summary/Objective

I am currently a first-year PhD student in Computer Science at the University of Auckland, and my research direction is focused on the construction of controllable Multimodal Large Language Models (MLLMs). My current research focuses on Multimodal Retrieval-Augmented Generation (MRAG) and the development of trustworthy AI agents, and I am committed to making practical and impactful contributions to the field of AI.

Education

The University of Auckland **Auckland, New Zealand**

Doctor of Philosophy in Computer Science *2025.4 - now*

- **Thesis Title:** Trustworthy LLM Agents Based on Dynamic Multimodal Retrieval-Augmented Generation

The University of Auckland **Auckland, New Zealand**

Master of Data Science *2022.7 - 2024.9*

- **Selected Coursework:** Statistical Computing (A), Functional Programming and Distributed Services (A-), Capstone: Creating Value from Data (A+), Foundations of Machine Learning (A-), Software Tools and Techniques (A), Dissertation (A+)
- **Voluntary Work:** Graduate Class Representative

Southwest University **Chongqing, China**

Bachelor of Engineering in Computer Science and Technologies *2019.9 - 2023.6*

- **Selected Coursework:** Algorithm Analysis and Design (A+), Artificial Intelligence (A+), Data Structure (A)
- **Voluntary Work:** Assistant Counselor, New Oriental Group Campus Ambassador
- **Awards:** The Third Prize Scholarship, Excellent Student Cadre, Spiritual Advanced Individual

Research Interests

- Controllable Multimodal Large Language Models (MLLMs) Development
- Multimodal Retrieval Augmented Generation (MRAG)
- Trustworthy AI Agents

Research Experience

ASR Models Fine-tuning in Industry-level CRM Systems **2024.5 - 2024.7**

- Proposes an industry paradigm for automatically building high-quality datasets for speech model fine-tuning
- The model fine-tuned by this solution has been verified feasible and deployed.

ChatLogic: Multi-step Deductive Reasoning over LLMs **2023.8 - 2023.12**

- Augmented multi-step reasoning capabilities of LLMs using external symbols.
- Participated in creating valid prompts to allow LLMs to generate formatted code content.
- Created a plug-and-play framework and added LLMs as components to augment reasoning capabilities universally.
- The dissertation based on this project received an **A+** grade in postgraduate studies at the University of Auckland.

Epic-level Text Generation with LLM through Auto-prompted RL **2023.3 - 2023.7**

- Defined awards indicator in the PPO reinforcement learning model and complete indicator measurement function.
- Participated in creating independent prompts for each action to force LLMs to generate text content that meets the format requirements.
- Integrated specifically formatted text content generated by LLMs.
- The epic-level novel (snow white) generated by this method can be viewed here*.

Working Experience

Graduate Teaching Assistant **2023.7 - 2025.7**

The University of Auckland, New Zealand

- Assist lecturers with computer science courses, including answering questions and marking assignments and tests.
- The courses I provide help with include: SOFTENG 282 Software Engineering Theory (2025 S1), COMPSCI 120 Mathematics for Computer Science (2025 S1), COMPSCI 761 Advanced Topics in Artificial Intelligence (2024 S2), COMPSCI 367 Artificial Intelligence (2023 S2)

AI Engineer **2024.5 - 2024.9**

Atom Intelligence, Remote

- Develop speech recognition model fine-tuning solution for the retail industry customer management system.
- Propose a solution for the automated construction of fine-tuning datasets for the retail industry.
- Explore the industrial applications of LLM in the retail industry and provide business solutions.

Data/AI Scientist (Summer Intern) **2023.11 - 2024.2**

HouGarden Co, Ltd., New Zealand

- Design the Issue Management System product, which is used to build a ChatBot Question-Answering dataset for the real estate industry.
- Complete the fine-tuning of the large model for the English automated translation of the company's official website and deploy it in practice.

Academic Services

Conference Reviewer

The International Conference on Neural Information Processing (ICONIP'[24-25])

The International Joint Conference on Neural Networks (IJCNN'[24-25])

CONFERENCE ON LANGUAGE MODELING (COLM'25)

2025 ACM Multimedia (MM'25)

ACL ARR 2025 February

Reasoning and Planning for Large Language Models@ICLR'25 (Workshop)

Talks

Creative Intelligence: Applications of Large Language Models in Data Generation and Reasoning, University of Electronic Science and Technology of China, Chengdu, China, December 2024

Publications

Conference & Journal Papers

Wang Z, Wang S, Wang J, Liang Y, Zhang Y, and Liu J. Weak Supervision Techniques towards Enhanced ASR Models in Industry-level CRM Systems. Accepted by The International Conference on Neural Information Processing, ICONIP 2024

Wang Z, Liu J, Bao Q, Rong H, Liu J, and Zhang J. ChatLogic: Integrating Logic Programming with Large Language Models for Multi-Step Reasoning. Accepted by The International Joint Conference on Neural Networks, IJCNN 2024

Qi Q, Ni L, **Wang Z**, Zhang L, Liu J, and Witbrock M. Epic-Level Text Generation with LLM Through Auto-Prompted Reinforcement Learning. Accepted by The International Joint Conference on Neural Networks, IJCNN 2024

Preprint & Workshop Papers

Li X, Ni L, Wang X, Tang Y, Li R, Liu J, and **Wang Z**. LLM-based Business Process Model Generation from Textual Descriptions. Arxiv pre-print

Xiao X, Shen S, Bao Q, Rong H, Liu K, **Wang Z**, and Liu J. CoRA: Optimizing Low-Rank Adaptation with Common Subspace of Large Language Models. Arxiv pre-print