

# Zirui Song

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## RESEARCH INTERESTS

1, AI for Science 2, Multimodal 3, Embodied AI

## EDUCATION

University of Technology Sydney, Australia	Graduated in 07/2025
Bachelor of Engineering (Honours) - Major in Software Engineering	WAM: 87.65/100
Ranked #88 in QS World University Rankings 2025.	WES: 3.90/4.00
Mohamed bin Zayed University of Artificial Intelligence, United Arab Emirates (UAE)	
Visiting Student In NLP Department - Supervised by Prof. Xiuying Chen.	From 09/2024 - 07/2025(Expected)
The world's first specialized research-based AI university	

## PUBLICATIONS

- **ECCV 2024** BenchLMM: Benchmarking Cross-style Visual Capability of Large Multimodal Models.  
Rizhao Cai\*, **Zirui Song**\*, Dayan Guan, Zhenhao Chen, Xing Luo, Chenyu Yi, & Alex Kot.  
The code is available at <https://github.com/AIFEG/BenchLMM>  
\* Equal contribution
- **EMNLP 2024** MedINST: Meta Dataset of Biomedical Instructions  
Wenhan Han, Meng Fang, Zihan Zhang, Yu Yin, **Zirui Song**, Ling Chen, Mykola Pechenizkiy & Qingyu Chen
- **COLING 2025 Under Review** MMAC-Copilot: Multi-modal Agent Collaboration Operating Copilot  
**Zirui Song**\*, Yaohang Li\*, Meng Fang, Zhenhao Chen, Zecheng Shi, Yuan Huang, & Ling Chen  
\* Equal contribution
- **NAACL 2025 Under Review** Hazards in Daily Life? Enabling Robots to Proactively Detect and Resolve Anomalies  
**Zirui Song**\*, Guangxian Ouyang\*, Meng Fang, Hongbin Na, Zijing Shi, Zhenhao Chen, Yujie Fu, Zeyu Zhang, Shiyu Jiang, Miao Fang, Ling Chen, Xiuying Chen<sup>†</sup> \* Equal contribution, <sup>†</sup> Corresponding author
- **WWW 2025 Under Review** From a Tiny Slip to a Giant Leap: An LLM-Based Simulation for Fake News Evolution  
Yuhan Liu, **Zirui Song**, Xiaoqing Zhang, Xiuying Chen, Rui Yan
- **NAACL 2025 Under Review** Foundations and Recent Trends in Multimodal Mobile Agents: A Survey  
Biao Wu\*, Yanda Li\*, Zhiwei Zhang, **Zirui Song**, Yunchao Wei, Meng Fang, Ling Chen  
\* Equal contribution
- **ICIC 2024** Efficient Reinforcement Learning via Decoupling Exploration and Utilization  
Jingpu Yang, Qirui Zhao, Helin Wang, Yuxiao Huang, **Zirui Song**, & Miao Fang.  
The code is available at <https://github.com/yydsok/OPARL>

## ACADEMIC EXPERIENCE

<b>Rapid-Rich Object Search Lab (Nanyang Technological University)</b>	<b>Prof. Dayan Guan, Prof. Alex Kot</b>
<i>Undergraduate Research Assistant (Remote)</i>	04/2023 — 2024/02

- Co-authored a research project titled “**BenchLMM: Benchmarking Cross-style Visual Capability of Large Multimodal Models**” as a joint first author. Accepted by ECCV 2024.
- Conducting preliminary primary research on Chain of thought, hallucinations and misleading issues in Vision-Language Models (VLM).

<b>Australian Artificial Intelligence Institute</b>	<b>Prof. Meng Fang, Prof. Ling Chen</b>
<i>Undergraduate Research Assistant</i>	02/2024 — Present

- Lead a paper titled “**MMAC-Copilot: Multi-modal Agent Collaboration Operating Copilot**” as the first author, introducing a multi-agent collaboration chain that improved performance by 6.8% in the general AI assistants benchmark.
- Collaborate on “**MedINST: Meta Dataset of Biomedical Instructions**” which includes 133 biomedical NLP tasks and over 7 million training samples, making it the most comprehensive biomedical instructional dataset to date.
- Co-author the survey “**Foundations and Recent Trends in Multimodal Mobile Agents: A Survey**”

**Trustworthy Text Lab (MBZUAI)***Visiting Student***Prof. Xiuying Chen**

02/2024 — Present

- Lead a paper titled **“Hazards in Daily Life? Enabling Robots to Proactively Detect and Resolve Anomalies”** as the first author, we introduce AnomalyGen, an unsupervised generative framework that enables household robots to autonomously detect and address anomalies without explicit instructions.
- Collaborated on **“From a Tiny Slip to a Giant Leap: An LLM-Based Simulation for Fake News Evolution”** as second author. We propose FUSE, an LLM-based simulation framework to investigate how true news gradually evolves into fake news, considering the roles of different types of agents and various social network structures observed in real-world.

**SELECTED COURSES****Foundation Courses**

- Introduction to Data Analytics 97/100
- Engineering Communication 90/100
- Secure Programming and Penetration Testing 98/100
- Software Architecture 97/100
- Design Innovation & Entrepreneurship Fundamentals 90/100

**Programming Courses**

- Fundamentals of C++ Programming 99/100
- Java Programming Fundamentals 97/100
- Programming 2 92/100
- Software Engineering Studio 89/100

**SKILLS**

- **Programming:** Python, PyTorch, Paddle, Shell, Java, C++,
- **Software:** MATLAB, Visual Studio Code, Git, Github
- **Soft Skills:** Problem-solving, Teamwork, Effective Communication, Time Management, Data Analysis, Critical Thinking, Attention to Detail

**REFERENCES****Prof. Meng Fang***Director, Data Science and Knowledge Discovery, University of Technology Sydney, Australia*

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Scholar Profiles: University of Liverpool - Personal Page — Google Scholar

**Prof. Dayan Guan***Associate Professor, School of Electrical and Electronic Engineering, Harbin Institute of Technology, China*

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Scholar Profiles: HIT-Personal Page — Google Scholar — Github

**Prof. Ling Chen***Director, Data Science and Knowledge Discovery, University of Technology Sydney, Australia*

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Scholar Profiles: UTS - Personal Page — Google Scholar

**Prof. Xiuying Chen***Director, Trustworthy Text Lab, MBZUAI, UAE*

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Scholar Profiles: MBZUAI - Personal Page — Google Scholar