

QIWEI MA

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Shenzhen, China

EDUCATION

Shenzhen Univeristy (SZU)

M.S. in Artificial Intelligence

GPA: 3.5/4.0

May 2026 (expected)

Ningxia Univeristy (NXU)

B.E. in Materials

GPA: 3.0/4.0

June 2022

INTERESTS

- Large Language Models and AI Agents.
- AI in Education.
- Security and Privacy in Educational AI.

RESEARCH EXPERIENCE

Differential Privacy Image Generation

Supervisor: Dr. Zhang

Mar 2024 - Apr 2025

SZU

- Proposed a differential privacy framework for image generation to eliminate gradient clipping bias and improve training stability.
- Introduced reconstruction loss and noise injection during generator upsampling stages to enhance data utility and image diversity.
- Designed multi-component training pipeline integrating generator, discriminators, classifier, and encoder with gradient sanitization mechanisms.
- Achieved SOTA performance on MNIST and Fashion-MNIST, surpassing baseline methods in Inception Score, Frechet Inception Distance, and downstream classification accuracy.

Multi-Agent Conversational AI for EFL Speaking Practice [1]

Supervisor: Dr. Zhang

Jan 2025 - Oct 2025

SZU

- Proposed a multi-agent system (MAS) for EFL speaking practice.
- Completed development of seven specialized agents (preprocessing, response generation, dialogue supervision).
- Explored mechanisms of MAS superiority, confirming synergistic effects of integrated features.
- Found MAS outperforms single-agent system(SAS) in oral proficiency gains ($p=0.049$) and grammatical accuracy ($p=0.016$) via a 4-week controlled experiment with 32 university EFL learners.
- Explored mechanisms of MAS superiority, confirming synergistic effects of integrated features: 26% more practice sessions, 15% longer utterances, and 70% reduction in repeated grammatical errors.

Intelligent Annotation and Feedback System for English Writing

Supervisor: Dr. Zhang

Apr 2025 - Present

SZU

- Developed LLM-IAF (LLM-based Intelligent Annotation & Feedback System), a mobile application for automated English writing evaluation targeting junior high school students.
- Implemented dual-engine AI workflow combining semantic evaluation and visual grounding to provide visualized feedback with error localization on handwritten essays.

- Conducted experimental study with students, comparing experimental group using LLM-IAF versus control group with traditional instruction over four weekly writing tasks.
- Achieved significant improvement in writing performance for experimental group compared to control group, with substantial gains in learning engagement and writing self-efficacy.
- Demonstrated strong AI-teacher score correlation and good agreement; students reported high satisfaction with system's usefulness and ease of use.

OTHERS

Reasoning for Table Manipulation

Mar 2025 - Present

Supervisors: Prof. Yang, Dr. Tan Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences

- Proposed an end-to-end LLM to manipulate tabular structures via structured reasoning.
- Constructed a benchmark covering 5 core tasks: table splitting/merging, wide-to-long conversion, semi-structured field parsing, and row/column generation.
- Completed two-stage training (SFT on reasoning traces + GRPO optimization), achieving SOTA performance among 7B-scale table-specific models.
- Explored structural integrity challenges in table manipulation, identifying that column-level accuracy outperforms row-level accuracy across models due to sensitivity to missing fields.

PUBLICATIONS

- [1] Jun Zhang, **Qiwei Ma**, Yu Zhang, and Xiaoming Cao. *Multi-Agent vs. Single-Agent AI for EFL Speaking Practice: A Controlled Experiment with Hybrid Input, Contextual Dialogue, and Proficiency-Adaptive Feedback*. *Educational Technology & Society (ET&S)*. 2025, (Accepted).

INTERNSHIPS

- *2025.05 - Present*, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China.

SKILLS

- **Languages:** Chinese (Native), English (Proficient), French (Basic)
- **Programming Languages:** Python, Java