

# DEMI RUOHAN WANG

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Researcher in LLMs and Agents; Top 1% in Global Math Competition ; 2× Hackathon Winner

## EDUCATION

|   |   |
|---|---|
| <b>Carnegie Mellon University</b>                                     | <i>Aug. 2025 - Dec. 2026 (Expected)</i> |
| Master of Intelligent Information Systems, School of Computer Science |   |
| <b>Tongji University</b>  | <i>Sept. 2020 - Jun. 2025</i>           |
| Bachelor of Software Engineering                                      | GPA: 3.95 / 4.0                         |

## SKILLS

|                  |  |
|------------------|--|
| <b>Languages</b> | Python, Java, C/C++, Go, JavaScript, SQL, HTML/CSS, LaTeX                      |
| <b>Libraries</b> | NumPy, Pandas, PyTorch, Transformers, PySpark, SciPy, Scikit-learn, Matplotlib |
| <b>Tools</b>     | Shell, Docker, Git/GitHub, Hugging Face, Hadoop, LangChain, Ray, AWS           |

## EXPERIENCES

|   |                              |
|---|------------------------------|
| <b>Research Intern – Microsoft Research, Asia</b>   | <i>Mar. – Jul. 2025</i>      |
| • Analyzed training signals of the <b>GRPO</b> algorithm, including probability, entropy, and clipping behavior.  |                              |
| • Developed an adaptive clip-range scheduling method in <b>VeRL</b> , achieved a <b>+3%</b> performance gain over baseline.   |                              |
| • Integrated compression methods into large language model training pipelines for reasoning tasks, improving token-level density and computational efficiency while maintaining accuracy.   |                              |
| • Designed a distribution-aware compression <b>path search algorithm</b> , achieving a 30% reduction in average response length with negligible performance loss, significantly improving reasoning efficiency.   |                              |
| <b>Research Intern – Ohio State University</b>  | <i>Apr. – Nov. 2024</i>      |
| • Developed <b>UGround</b>  , a universal pixel-level visual grounding model to improve the accuracy of GUI agents.  |                              |
| • Created a dataset of <b>9M</b> element examples from <b>773K</b> real-world website screenshots by designing an efficient synthetic data pipeline, combining web crawling and large language model annotation.  |                              |
| • Led model evaluations across multiple benchmarks (web, mobile, OS), achieving <b>state-of-the-art</b> results with up to <b>36%</b> improvement in grounding accuracy over previous models.   |                              |
| <b>Machine Learning Engineer Intern – ByteDance</b>   | <i>Oct. 2023 – Feb. 2024</i> |
| • Fine-tuned LLaVA-based <b>vision-language models</b> with <b>LoRA</b> , incorporating <b>Chain-of-Thought</b> and multi-task strategies, boosting precision in detecting <i>off-platform traffic diversion violations</i> from <b>62.3%</b> to <b>90.2%</b> . |                              |
| • Designed a self-supervised example selection pipeline for <b>in-context learning</b> , improving F1-Score on <i>livestream interaction violation</i> detection by <b>5.2%</b> and cutting manual review workload by <b>40%</b> .                              |                              |

## PUBLICATION

- [1] Navigating the Digital World as Humans Do: Universal Visual Grounding for GUI Agents  
Gou B., Wang R., Zheng B., Xie Y., Chang C., Shu Y., Sun H., Su Y. *ICLR 2025 Oral (1.8%)*

## SELECTED PROJECTS

|  |   |
|--|---|
| <b>Miko – AI-Native Desktop Companion</b>  | <i>2nd Winner @AdventureX 2025 Kimi Track</i> |
| • Developed an AI-native desktop companion for productivity, capable of executing system-level and application tasks (e.g., app control, Gmail, Python execution, file operations, web search) through a conversational interface. |   |
| • Designed a modular <b>agent-based backend</b> supporting multi-tool orchestration for scalable task automation.  |   |
| • Built a <b>memory-augmented conversation system</b> with context management and user preference learning.  |   |
| <b>Life Buddy – AI Lifestyle Assistant</b>   | <i>2nd Winner @Baidu AGI HACKATHON</i>        |
| • Built an AI assistant providing personalized restaurants and trip planning recommendations using LLMs.   |   |
| • Designed a <b>context-aware recommendation pipeline</b> integrating function calling, SQL queries, and <b>vector search</b> , enabling real-time, preference-based suggestions.  |   |