

MIAOSEN (JACKSON) ZHANG

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📖 SUMMARY

Research scientist specializing in Computer-Use Agents and LLM post-training, with 5 years of applied research experience at Microsoft Research. Trained models are shipped to Windows Copilot and Microsoft Designer production systems, authored top-tier publications (ICML, NeurIPS), and contributed to highly-adopted open-source projects including LMM-R1 and XwinLM, accumulated over 1,700 GitHub stars.

🎓 EDUCATION & INTERNSHIP

Microsoft AI Intern, Redmond, United State Apr. 2026 – Present
Southeast University & Microsoft Research Asia, Beijing, China Sep. 2022 – Present
Joint-Ph.D. with SEU and MSRA in Computer Science, expected 2027. Supervisor: Baining Guo.
Southeast University, Nanjing, China Sep. 2018 – Jun. 2022
B.S. in Computer Science. Rank: 4/128 (department) and 1/23 (AI major).

🧩 SELECTED PROJECTS

Computer Use Based Agentic Worker, MAI, Redmond, US Apr. 2026 – Present
Computer Use Agent as software and UX tester Collaborated with MAI Copilot team.

- Extend GUI action grounding to broader types (drag, draw) and modals (e.g., canvas), enabling computer-use agents to operate across previously unsupported workflows. Core contributor of data generation and model training [1].

Windows Copilot Vision Highlighting, MSRA, Beijing, China Nov. 2024 – Apr. 2026
Highlight the target region in GUI for users Collaborated with Microsoft Windows Copilot team

- A core contributor in charge of data generation and GUI grounding model training.
- First author of **Phi-Ground Tech Report** [2] with **SOTA model (+4.9%) on UI-Vision** when released.
- The model was **shipped to the Windows Copilot vision highlight feature globally for over 2M users** in April 2025.
- The training data was later reused in **Phi-4-reasoning-vision** and other internal multimodal foundation models.

Designer Retrieval Model, MSRA, Beijing, China Nov. 2022 – Mar. 2024
Develop image retrieval model for multiple applications Collaborated with PPT Designer team.

- Responsible for VL model pre-training and research on aesthetic alignment algorithm.
- The image-to-image and text-to-image retrieval models were deployed globally in **PPT Designer and Microsoft Designer services**, which are utilized across multiple APPs including Photos. The aesthetic alignment algorithm achieved a **+1.3% gain** during the A/B test and **improved relevance (+19%) and quality (+11%)** in expert evaluations. The corresponding paper was published at NeurIPS 2024 [3].

🧩 OTHER RESEARCH PROJECTS

LMM-R1 In Southeast University. Released one of the earliest R1-style multimodal reasoning models and training pipelines, attracting **700+ GitHub stars** [4] and the released code-base became the official LMM RL implementation in OpenRLHF repository (**6k stars**).

On-policy SFT In MSRA. Built a practical On-Policy SFT framework that bridges the distribution gap between SFT and RL, improving generalization in settings where responses can be annotated but reasoning traces are unavailable (e.g., computer-use agents). Published in ICML 2026 [5].

XwinLM In MSRA. Core contributor to **XwinLM**, the **#1 open-source model on AlpacaEval** in Jan. 2024. The project accumulated **1,000 GitHub stars** within two months. Contributed to **XwinCoder-34B**, which achieved GPT-3.5-level performance on six coding benchmarks and reached SOTA among open-source coding models at the time. [6]

MageBench In MSRA. Proposed a multi-modal agent benchmark and published [7] in WACV (**Oral**).

Deep Research Agent In MSRA. Take part of the data generation ideas of InfoAgent [8] and Re-TRAC [9].

ScalingFilter In MSRA. Initialize the idea of TB-scale pretraining data filtering algorithm [10].

PUBLICATIONS

- [1] **Miaosen, Zhang**, Xiaohan Zhao, Zhihong Tan, Zhou Huoshen, Yijia Fan, Yifan Yang, Kai Qiu, Bei Liu, Justin Wagle, Chenzhong Yin, et al. Covering human action space for computer use: Data synthesis and benchmark. *arXiv preprint arXiv:2605.12501*, 2026.
- [2] **Miaosen, Zhang**, Ziqiang Xu, Jialiang Zhu, Qi Dai, Kai Qiu, Yifan Yang, Chong Luo, Tianyi Chen, Justin Wagle, Tim Franklin, et al. Phi-ground tech report: Advancing perception in gui grounding. *arXiv preprint arXiv:2507.23779*, 2025.
- [3] **Miaosen, Zhang**, Yixuan Wei, Zhen Xing, Yifei Ma, Zuxuan Wu, Ji Li, Zheng Zhang, Qi Dai, Chong Luo, Xin Geng, and Baining Guo. Aligning vision models with human aesthetics in retrieval: Benchmarks and algorithms. *NeurIPS*, 2024.
- [4] Yingzhe Peng*, Gongrui Zhang*, **Miaosen, Zhang***, Zhiyuan You, Jie Liu, Qipeng Zhu, Kai Yang, Xingzhong Xu, Xin Geng, and Xu Yang. Lmm-rl: Empowering 3b lmms with strong reasoning abilities through two-stage rule-based rl. *arXiv preprint arXiv:2503.07536*, 2025.
- [5] **Zhang, Miaosen***, Yishan Liu*, Shuxia Lin, Xu Yang, Qi Dai, Chong Luo, Weihao Jiang, Peng Hou, Anxiang Zeng, Xin Geng, et al. Towards on-policy sft: Distribution discriminant theory and its applications in llm training. *arXiv preprint arXiv:2602.12222*, 2026.
- [6] XwinLM project, link: <https://github.com/Xwin-LM/Xwin-LM>.
- [7] **Miaosen, Zhang**, Qi Dai, Yifan Yang, Jianmin Bao, Dongdong Chen, Kai Qiu, Chong Luo, Xin Geng, and Baining Guo. Magebench: Bridging large multimodal models to agents. *arXiv preprint arXiv:2412.04531*, 2024.
- [8] Gongrui Zhang, Jialiang Zhu, Ruiqi Yang, Kai Qiu, **Miaosen, Zhang**, Zhirong Wu, Qi Dai, Bei Liu, Chong Luo, Zhengyuan Yang, et al. Infoagent: Advancing autonomous information-seeking agents. *arXiv preprint arXiv:2509.25189*, 2025.
- [9] Jialiang Zhu, Gongrui Zhang, Xiaolong Ma, Lin Xu, **Miaosen, Zhang**, Ruiqi Yang, Song Wang, Kai Qiu, Zhirong Wu, Qi Dai, et al. Re-trac: Recursive trajectory compression for deep search agents. *arXiv preprint arXiv:2602.02486*, 2026.
- [10] Ruihang Li, Yixuan Wei, **Miaosen, Zhang**, Nenghai Yu, Han Hu, and Houwen Peng. Scalingfilter: Assessing data quality through inverse utilization of scaling laws. *EMNLP*, 2024.