Zihao Jing

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I received my M.Sc. in Computer Science from Western University under the supervision of Prof. Pingzhao Hu. During my M.Sc., I published three first-author papers at NeurIPS, ICLR, and ICML on structure-grounded multimodal reasoning. I am seeking RA and PhD opportunities in world models, agents, multimodal reasoning, and post-training.

EDUCATION

Western University, M.Sc. in Computer Science, Ontario, Canada — Sep. 2024–Apr. 2026
Beihang University, B.Eng. in Software Engineering, Beijing, China — Sep. 2020–Aug. 2024

SELECTED PUBLICATIONS

Top-Tier Conferences

[1] **Zihao Jing**, Qiuhao Zeng, Ruiyi Fang, Yan Yi Li, Yan Sun, Boyu Wang, Pingzhao Hu. *Scaling-Aware Adapter for Structure-Grounded LLM Reasoning.* **ICML 2026** [Code] [Paper]

- Proposed scaling-aware patching and a geometry-grounding adapter for structure-grounded LLM reasoning over variable-size spatial graphs.
- Achieved top-1 performance on *17/18* reasoning tasks from Mol-Instruction, RNA-QA, and DNA-Chat benchmarks.

[2] **Zihao Jing**, Qiuhao Zeng, Ruiyi Fang, Yan Sun, Boyu Wang, Pingzhao Hu. *Entropy-Guided Dynamic Tokens for Graph–LLM Alignment in Molecular Understanding.* In **ICLR 2026**. [Code] [Paper] [Poster] [Video][Slices]

- Proposed *EDT-Former*, an entropy-guided dynamic query connector that preserves variable-size substructure information for graph–LLM alignment while keeping the LLM backbone frozen.
- Achieved SOTA on *11/11* MoleculeQA and Mol-Instructions benchmarks and best results on *10/10* MoleculeNet/TDC property tasks under matched settings.

[3] **Zihao Jing**, Yan Sun, Yan Yi Li, Sugitha Janarthanan, Alana Deng, Pingzhao Hu. *Structure-Aware Fusion with Progressive Injection for Multimodal Molecular Representation Learning.* In **NeurIPS 2025**. [Code] [Paper] [Video&Poster]

- Proposed *MuMo*, a foundation-style multimodal molecular model with asymmetric Progressive Injection to stabilize token–structure fusion and mitigate modality collapse under unreliable 3D inputs.
- Ranked 1st on *22/29* downstream tasks with a *+2.7%* average improvement over strong baselines.

Selected Additional Works

[4] Junqin Huang, Zhongjie Hu, **Zihao Jing**, Mengya Gao, Yichao Wu. *Piccolo2: General Text Embedding with Multi-Task Hybrid Loss Training.* **SenseTime Technical Report, 2024** [SenseNova] [Code] [Report]

- Built training/evaluation pipelines and contributed to iterative optimization of a general-purpose embedding model; achieved top-1 on C-MTEB in May 2024.

[5] **Zihao Jing**, Yuxi Long, Ganlin Feng. *Pruning for Generalization: A Transfer-Oriented Spatiotemporal Graph Framework.* **Under Review at Workshop.** [Code] [Preprint]

- Proposed entropy-based graph pruning for cross-city traffic forecasting, improving generalization under limited data.

Additional Co-authored Publications

[6] Qiuhao Zeng, Jerry Huang, Peng Lu, Ruiyi Fang, Gezheng Xu, **Zihao Jing**, Yufei Cui, Charles Ling, Gang Niu, Boyu Wang. Attention with Routed-Memory for Learnable Sparse Control. In **ICML 2026**.

[7] Ruiyi Fang, Jingyu Zhao, Shuo Wang, Ruizhi Pu, Bingheng Li, Jiale Cai, Zhihao Li, **Zihao Jing**, Jian Zhu, Song Tang, et al. SAGA: Structural Aggregation Guided Alignment with Dynamic View and Neighborhood Order Selection for Multiview Graph Domain Adaptation. In **ICLR 2026**.

[8] Alana Deng, Sugitha Janarthanan, Yan Sun, **Zihao Jing**, Pingzhao Hu. Distilling and Adapting: A Topology-Aware Framework for Zero-Shot Interaction Prediction in Multiplex Biological Networks. In **ICLR 2026**.

RESEARCH FUNDING

Digital Research Alliance of Canada, Resources for Research Groups 2026
Applied for and received 25 RGU-years (Reference GPU Unit-Years, equivalent to 5×A100-80GB GPU-years) on Canada's national supercomputing cluster for our lab; *Estimated commercial rental value: ∼US$80K.*

RESEARCH INTERNSHIPS

SenseTime — *LLM Research Intern* — 2023.09–2024.06

- **Text embeddings (Piccolo2):** Trained general-purpose embedding models with multi-task hybrid-loss objectives; built end-to-end training/evaluation pipelines and led iterative optimization of a generative embedding LLM; achieved top-1 ranking on C-MTEB (May 2024).
- **Domain LLM adaptation (100B):** Fine-tuned a 100B-parameter LLM for vertical livestream marketing; drove data/recipe iteration and productionized the model for deployment at Sina Weibo.

- **LLM research, engineering & scaling:** Gained hands-on experience with large-scale pretraining/fine-tuning codebases (SenseNova series), hyperparameter tuning, experiment tracking, and reproducible training workflows on multi-GPU infrastructure.

Jina AI *AI Research Intern* 2023.04–2023.09

- **LLM engineering:** Improved RunGPT interface and contributed solutions to the **Llama** open-source ecosystem.
- **Applied LLM analytics:** Implemented LLM-based denoising and sentiment pipeline for Budweiser public-opinion analysis; reduced operational cost by >13%.
- **Model commercialization:** Led evaluation/tuning of a super-resolution model; executed performance testing and produced pricing recommendations.

TECHNICAL SKILLS

- **LLMs:** pretraining, post-training, multimodal alignment, and agent workflow design.
- **Systems and HPC:** Linux, Slurm, Docker, Singularity, Conda/Mamba, Git, and reproducible environments.
- **Distributed Training:** PyTorch DDP/FSDP, DeepSpeed, multi-GPU/node training, profiling, and monitoring.
- **Programming:** Python, C/C++, Java, MATLAB, SQL, Bash, JavaScript, and full-stack development.

SELECTED TALKS AND PRESENTATIONS

[1] Demystifying Large Language Models, From Pretrain to Adaptation — UWORCS 2025
[2] Advanced Attention Mechanism in Transformers — UWO Journal Club Seminar 2025
[3] DeepSeek vs. ChatGPT, Advanced Reinforcement Learning Approaches — UWO Journal Club Seminar 2025
[4] AlphaFold and All-Atom Foundation Models — Bio-Informatics Journal Club 2026

MENTORSHIP

Teaching Assistant, COMPSCI 2211 Software Tools and Systems Programming — Fall 2024 and Fall 2025
Teaching Assistant, COMPSCI 3305 Operating Systems — Winter 2025 and Winter 2026

- Mentored junior students on operating systems, software tools, Linux workflows, and research coding practices.

ACADEMIC SERVICE

Conference Reviewer ICLR 2026 (5 papers), ICML 2026 (6 papers)
Workshop Reviewer Time Series in the Age of Large Models (TSALM), ICLR 2026 (2 papers)
Journal Reviewer ACM Transactions on Knowledge Discovery from Data (TKDD)
Journal Reviewer IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
Conference Volunteer NeurIPS 2025 San Diego Convention Center

HONORS AND AWARDS

- **Silver Prize**, Feng Ru Cup Science and Innovation Competition (University-level) 2023
- **Third Prize**, 13th National Undergraduate Mathematics Competition (National-level) 2021
- **Third Prize**, 32nd Beijing Undergraduate Mathematics Competition (Province-level) 2021
- **Outstanding Student Leader Award** (University-level) 2022
- **Outstanding Student Leader Award** (Department-level) 2021
- **Third Prize**, Physics Academic Competition (University-level) 2021
- **Honorable Mention (H Prize)**, Mathematical Contest In Modeling 2020