

Dongming Jiang

Ph.D. Candidate, Computer Science — The University of Texas at Dallas

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Research Interests

AI systems and machine learning infrastructure: agentic memory architectures, retrieval systems (disk-based approximate nearest neighbor search), reinforcement learning for dynamic graph evolution, and foundation models for scientific computing (PDE solvers). Interested in building scalable, reliable, full-stack AI systems.

Education

Ph.D. in Computer Science, The University of Texas at Dallas	Aug 2024 – Present
<i>Advisor: Dr. Bingzhe Li</i>	
M.S. in Computer Science, Rice University	Aug 2022 – Jan 2024
B.Eng. in Computer Science and Technology, Hangzhou Dianzi University	Sep 2018 – Jul 2022

Technical Skills

- **Languages:** Python, C++, C, CUDA, Java, Bash, SQL
- **ML Frameworks:** PyTorch, TensorFlow, Hugging Face Transformers, scikit-learn
- **Systems & Tools:** Linux, Git, CMake, Docker, SLURM, LaTeX, OpenMP, MPI

Research Experience

Graduate Research Assistant, The University of Texas at Dallas	Aug 2024 – Present
<i>Department of Computer Science</i>	

- **Agentic memory architectures:** Designed MAGMA, a multi-graph agentic memory system for LLM agents (ACL 2026, first author), and HAGE, an RL-driven weighted graph-evolution memory module (under review, first author).
- **Empirical analysis & benchmarking:** Built a taxonomy and empirical study of agentic-memory systems, designing evaluation benchmarks with adversarial question categories to expose system limitations (under review, first author).
- **Retrieval systems:** Contributed to a scalable disk-based approximate nearest neighbor search system with a page-aligned graph index (under review).
- **Foundation models for scientific computing:** Contributed to PDE foundation models for 3D-IC thermal simulation (DAC 2026) and PDEAgent-Bench, a benchmark for PDE solver generation.
- Research supported by multiple U.S. National Science Foundation (NSF) awards.

Selected Publications

Name in bold is the author. * marks first author; multiple starred names share equal (co-first) contribution. † corresponding author. (Google Scholar: 60+ citations, h-index 4.)

Peer-Reviewed (Accepted / Published)

[ACL'26]	MAGMA: A Multi-Graph-based Agentic Memory Architecture for AI Agents Dongming Jiang*, Yi Li, Guanpeng Li, Bingzhe Li <i>Annual Meeting of the Association for Computational Linguistics (Main Conference)</i>
[ICLR'26]	Adaptive Debiasing Tsallis Entropy for Test-Time Adaptation Xiangyu Wu*, Dongming Jiang*, F. Yu, Y. Tian, J. Tang, Q.-G. Chen, Y. Yang, J. Lu <i>International Conference on Learning Representations</i>

- [DAC'26] **From Fluid Dynamics to Chip Design: PDE Foundation Models Address Data Bottlenecks in 3D-IC Thermal Simulation**
Z. Huang*, X. HaiYang*, **Dongming Jiang***, Y. Wei, H. Wang, W. Yang, Y. Zhang, et al.
Design Automation Conference
- [ICMR'26] **Learning Where to Embed: Noise-Aware Positional Embedding for Query Retrieval in Small-Object Detection**
Y. Zeng, Z. Yu, **Dongming Jiang**, W. Zhang, Y. Hong, Z. Hu, J. Luo, K. Cui
International Conference on Multimedia Retrieval

Preprints / Under Review

- [Under Review] **Anatomy of Agentic Memory: Taxonomy and Empirical Analysis of Evaluation and System Limitations**
Dongming Jiang*[†], Yi Li, Songtao Wei, Jinxin Yang, Ayushi Kishore, Alysia Zhao, Dingyi Kang, Xu Hu, Feng Chen, et al.
Preprint
- [Under Review] **HAGE: Harnessing Agentic Memory via RL-Driven Weighted Graph Evolution**
Dongming Jiang*, Yi Li, Guanpeng Li, Qiannan Li, Bingzhe Li
Preprint
- [Under Review] **PDEAgent-Bench: A Multi-Metric, Multi-Library Benchmark for PDE Solver Generation**
Zhen Hang*, Yushan Yashengjiang*, et al. (incl. **Dongming Jiang**; corresponding author Hong Wang)
Preprint
- [Under Review] **DarkForest: Less Talk, Higher Accuracy for Multi-Agent LLMs**
Yi Li, Songtao Wei, **Dongming Jiang**, Zhichun Guo, Qiannan Li, Bingzhe Li
Preprint
- [Under Review] **Scalable Disk-Based Approximate Nearest Neighbor Search with Page-Aligned Graph**
Dingyi Kang, **Dongming Jiang**, H. Yang, H. Liu, Bingzhe Li
Preprint

Selected Academic Service

- **Peer reviews** across AI/ML, systems, and architecture venues.
- Reviewer / PC: NeurIPS, ICLR, ICML, CVPR, TMLR, ICCAD, OSDI (Artifact Evaluation), PEARC, MMM, *IEEE Security & Privacy*.