

# JUNMING LIU

✉ liu\_junming6917@tongji.edu.cn · 📚 Google Scholar · 🐾 GitHub · 🌐 Personal Website

## EDUCATION

<b>Tongji University</b> , Shanghai, China	<i>Setp. 2023 – Present</i>
Master Student in Computer Science (CS), expected March 2026	
◦ Research Interests: Multimodal Learning, Multimodal Large Language Models, Multi-Agent Interaction	

<b>Dalian Maritime University</b> , Dalian, China	<i>Sept. 2019 – July 2023</i>
B.S. in Intelligent Science and Technology (IST)	

PUBLICATIONS	* EQUAL CONTRIBUTION	† CORRESPONDING AUTHOR
[1] <b>Junming Liu</b> , Siyuan Meng, Yanting Gao, <i>et al.</i> <i>Aligning Vision to Language: Annotation-Free Multimodal Knowledge Graph Construction for Enhanced LLMs Reasoning</i> . ICCV 2025 (Accepted).		
[2] <b>Junming Liu</b> , Yifei Sun, Weihuang Cheng, <i>et al.</i> <i>ReBrain: Brain MRI Reconstruction from Sparse CT slice via Retrieval-Augmented Diffusion</i> . WACV 2026 (Accepted).		
[3] Aoqi Wu*, <b>Junming Liu</b> *, Yuwei Zhang, <i>et al.</i> <i>AMID: Model-Agnostic Dataset Distillation by Adversarial Mutual Information Minimization</i> . WWW 2026 (Accepted).		
[4] Yujin Kang*, <b>Junming Liu</b> *, Haiyan Cui†. <i>AI-Driven Assessment of Lip Volume Improvement Using Hyaluronic Acid Fillers: A Comprehensive Analysis</i> . Aesthetic Plastic Surgery (Accepted).		
[5] <b>Junming Liu</b> , Yusen Zhang, Rongchao Zhang, Wenkai Zhu, Tian Wu†. <i>Domain-Adaptive Model Merging Across Disconnected Modes</i> . ICASSP 2026 (Accepted).		
[6] Pei Liu, Xin Liu, Ruoyu Yao, <b>Junming Liu</b> , <i>et al.</i> <i>HM-RAG: Hierarchical Multi-Agent Multimodal Retrieval Augmented Generation</i> . ACM MM 2025 (Accepted).		
[7] Yanting Gao, Yepeng Liu, <b>Junming Liu</b> , <i>et al.</i> <i>Boosting Adversarial Transferability via Commonality-Oriented Gradient Optimization</i> . PRCV 2025 (Accepted).		
[8] <b>Junming Liu</b> , Yanting Gao, Yifei Sun, <i>et al.</i> <i>FedRecon: Missing Modality Reconstruction in Heterogeneous Distributed Environments</i> . EUROGRAPHICS 2026 (Conditionally Accepted).		
[9] <b>Junming Liu</b> , Yanting Gao, Siyuan Meng, <i>et al.</i> <i>Mosaic: Data-Free Knowledge Distillation via Mixture-of-Experts for Heterogeneous Distributed Environments</i> . Pattern Recognition (Under Review).		
[10] Yifei Sun, <b>Junming Liu</b> , Yirong Chen, <i>et al.</i> <i>TimeMKG: Knowledge-Infused Causal Reasoning for Multivariate Time Series Modeling</i> . Engineering Applications of Artificial Intelligence (Under Review).		
[11] <b>Junming Liu</b> , Yifei Sun, Weihua Cheng, <i>et al.</i> <i>MemVerse: Multimodal Memory for Lifelong Learning Agents</i> . CVPR 2026 (Under Review).		
[12] Siyuan Meng*, <b>Junming Liu</b> *, Yirong Chen, <i>et al.</i> <i>From Ranking to Selection: A Simple but Efficient Dynamic Passage Selector for Retrieval Augmented Generation</i> . ACL 2026 (Under Review).		
[13] <b>Junming Liu</b> *, Yuqi Li*, Mengyue Dai, <i>et al.</i> <i>L-APO: Enhancing Long-Context Retrieval-Augmented Generation via Adversarial Preference Optimization</i> . ACL 2026 (Under Review).		
[14] <b>Junming Liu</b> , Yuqi Li, Shiping Wen, <i>et al.</i> <i>ReCross: Recovering Cross-Modal Specificity Beyond Alignment</i> . ICML 2026 (Under Review).		

## HONORS AND AWARDS

• <b>Leadership and Communication Scholarship</b> <i>Dalian Maritime University</i>	<i>Sept. 2020</i>
• <b>Excellent Student Scholarship (10%)</b> <i>Dalian Maritime University</i>	<i>Sept. 2021</i>
• <b>Excellent Student Scholarship (10%)</b> <i>Dalian Maritime University</i>	<i>Sept. 2022</i>
• <b>National College Mathematics Competition, National First Prize (1%)</b> <i>Chinese Mathematical Society</i>	<i>Dec. 2022</i>

## RESEARCH EXPERIENCE

---

- **Text Sentiment Analysis Based on BERT Model** Dalian Maritime University  
Sept. 2021 – May. 2022  
Advisor: Prof. Yijia Zhang
  - **Motivation:** Investigate public opinion tendencies on social media during the COVID-19 pandemic.
  - **Methods:** Enhanced BERT by integrating LDA topic modeling and fine-tuned the combined model for text sentiment analysis.
  - **Results:** Achieved 95% accuracy in analyzing public sentiment on social media posts and submitted a patent titled “*Text Review Sentiment Classification Method Based on Topic-Fused BERT and Medium*”.
- **Vision-Language Models for Medical Imaging** Tongji University  
Sept. 2023 – Dec. 2025  
Advisor: Prof. Guosun Zeng
  - **Motivation:** Brain medical images contain complex structures that are difficult to interpret reliably, motivating the use of VLMs to enable structured and interpretable reasoning.
  - **Methods:** Used DDPM with ControlNet to perform high-fidelity reconstruction that preserves anatomical consistency across modalities, fine-tuned VLMs for brain abnormality detection and segmentation with traceable and interpretable reasoning, and incorporated privacy-preserving, distributed techniques for efficient lightweight collaboration of large models across heterogeneous hospitals.
  - **Results:** Achieved improved modality-aligned reconstruction and enhanced brain tumor detection and segmentation on SynthRAD2023, BraTS, etc., demonstrating strong robustness even under Non-IID data distributions. Some of this work has been accepted or submitted to top-tier conferences.
- **Multimodal Large Language Model Reasoning** Shanghai Artificial Intelligence Laboratory  
Jan. 2025 – Present  
Advisor: Dr. Ding Wang
  - **Motivation:** Explore efficient and interpretable reasoning methods for MLLMs.
  - **Methods:** Developed an annotation-free multimodal knowledge graph module to enhance reasoning, designed a long-context prompt comprehension framework to guide outputs and align responses with input semantics, studied partial alignment of different modalities to preserve shared and modality-specific information, and built an agent-memory mechanism for multi-turn interaction.
  - **Results:** Achieved improved performance and robustness across multimodal benchmarks, with some work accepted to ICCV 2025 and ACM MM 2025, and others submitted to ACL 2026 and CVPR 2026.

## INTERNSHIP EXPERIENCE

---

- **Shanghai NIO Automobile Co., Ltd.** Embedded Engineer June. 2023 – Sept. 2023
  - Developed embedded control programs based on STM32, handling low-level signal acquisition and execution control.
  - Controlled steering and braking systems under tire blowout scenarios using image and radar data to prevent rollover and loss of control.
- **Beijing Jinxinxin Network Technology Co., Ltd.** Algorithm Engineer Oct. 2024 – Dec. 2024
  - Constructed and trained vertical domain large models for maritime law scenarios, enabling intelligent understanding and application of specialized legal texts.
- **Shanghai Artificial Intelligence Laboratory** Researcher Jan. 2025 – Present
  - Conducted research on multimodal large language models.

## SKILLS

---

- Language: Chinese (native), English (IELTS: 7.0), Japanese, Germany
- Programming: C, C++, Python, Java, Go, SQL, Rust, MPI, NCCL, DeepSpeed, DDP, FSDP

## CAMPUS EXPERIENCE

---

- Member of the Art Troupe, School of Information Science and Technology, Dalian Maritime University Sept. 2019 – June. 2022
- Member of the Student Union, School of Electronics and Information Engineering, Tongji University Sept. 2023 – June. 2024