

QI LIU

+86 137-9812-2637 ◇ Beijing, China ◇ qiliu6777@gmail.com

<https://liuqi6777.github.io/>

EDUCATION

Renmin University of China

PhD Student, Artificial Intelligence

Gaoling School of Artificial Intelligence

Advisor: Assoc. Prof. Jiaxin Mao

Sept. 2024 -Present.

Beijing, China

Renmin University of China

Bachelor of Engineering, Artificial Intelligence

Gaoling School of Artificial Intelligence

Sept. 2020 - June. 2024

Beijing, China

RESEARCH INTERESTS

My research interests lie in information retrieval and natural language processing, specifically in:

- large language models for retrieval and ranking
- retrieval-augmented generation and search agent

EXPERIENCE

Hi Lab, Xiaohongshu

Internship

July. 2023 - Sept. 2023

Beijing, China

- Developing large language models, specifically in the preparation of pre-training data, including data processing, data quality verification, data cleaning strategy exploration, etc.

Jina AI

Research Internship

Nov. 2023 - June. 2024

Beijing, China

- Developing the English-Chinese bilingual embedding model `jina-embeddings-v2-base-zh`.
- Developing the long-context late-interaction model `jina-colbert-v1-en`.

Tongyi Lab, Alibaba

Research Internship

May. 2025 - Jan. 2026

Beijing, China

- Focusing on embedding/reranking models.

NExT++ Research Center, National University of Singapore

Visiting PhD Student

Jan. 2026 - Presents.

Singapore

- Focusing on Agentic Search.

PUBLICATIONS

1. DiffuRank: Effective Document Reranking with Diffusion Language Models

Qi Liu, Kun Ai, Jiaxin Mao, Yanzhao Zhang, Mingxin Li, Dingkun Long, Pengjun Xie, Fengbin Zhu, Ji-Rong Wen

Preprint 2026.1.

2. E²Rank: Your Text Embedding can Also be an Effective and Efficient Listwise Reranker

Qi Liu, Yanzhao Zhang, Mingxin Li, Dingkun Long, Pengjun Xie, Jiaxin Mao

Preprint 2025.10.

3. **How do Large Language Models Understand Relevance? A Mechanistic Interpretability Perspective**
Qi Liu, Jiaxin Mao, Ji-Rong Wen
ACM Transactions on Information Systems. (*TOIS 2025*)
4. **LLM4Ranking: An Easy-to-use Framework of Utilizing Large Language Models for Document Reranking**
Qi Liu, Haozhe Duan, Yiqun Chen, Quanfeng Lu, Weiwei Sun, Jiaxin Mao
Preprint 2025.4.
5. **Leveraging Passage Embeddings for Efficient Listwise Reranking with Large Language Models**
Qi Liu, Bo Wang, Nan Wang, Jiaxin Mao
Proceedings of the ACM Web Conference 2025. (*WWW 2025*)
6. **TourRank: Utilizing Large Language Models for Documents Ranking with a Tournament-Inspired Strategy**
Yiqun Chen, **Qi Liu**, Yi Zhang, Weiwei Sun, Daiting Shi, Jiaxin Mao, Dawei Yin
Proceedings of the ACM Web Conference 2025. (*WWW 2025*)
7. **Mamba Retriever: Utilizing Mamba for Effective and Efficient Dense Retrieval**
Hanqi Zhang, Chong Chen, Lang Mei, **Qi Liu** and Jiaxin Mao
Proceedings of the 33rd ACM International Conference on Information and Knowledge Management. (*CIKM 2024*)
8. **Multi-Task Contrastive Learning for 8192-Token Bilingual Text Embeddings**
Isabelle Mohr, Markus Krimmel, ..., **Qi Liu**, ..., Bo Wang, Maximilian Werk, Nan Wang, Han Xiao
Preprint 2024.2.
9. **An Analysis on Matching Mechanisms and Token Pruning for Late-interaction Models**
Qi Liu*, Gang Guo*, Jiaxin Mao, Zhicheng Dou, Ji-Rong Wen, Hao Jiang, Xinyu Zhang, Zhao Cao
ACM Transactions on Information Systems. (*TOIS 2023*)
10. **Understanding the Multi-vector Dense Retrieval Models**
Qi Liu and Jiaxin Mao
The 32nd ACM International Conference on Information and Knowledge. (*CIKM 2023*)