

QIDONG LIU

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EDUCATION

City University of Hong Kong, Hong Kong SAR, China

Aug 2022 - Present

Joint Ph.D., Data Science

Supervisor: Dr. Xiangyu Zhao [\[HOMEPAGE\]](#)

Lab: AML Lab [\[HOMEPAGE\]](#)

Affiliation: School of Data Science

GPA: 3.80/4.0

Xi'an Jiaotong University, Xi'an, China

Mar 2021 - Present

Ph.D., Automation

Supervisor: Prof. Feng Tian [\[HOMEPAGE\]](#)

Lab: XJTU-MKFE [\[HOMEPAGE\]](#)

Affiliation: The Faculty of Electronic Information

GPA: 90.92/100

Xi'an Jiaotong University, Xi'an, China

Sep 2019 - Jan 2021

M.Sc., Cyberspace Security

Supervisor: Prof. Feng Tian

GPA: 90.07/100 (Top 2)

Xi'an Jiaotong University, Xi'an, China

Sep 2015 - Jun 2019

B.Eng., Automation

GPA: 85.9/100

Graduation Thesis: Analysis of motion sensor on mobile terminal and design of Wechat Mini Programme

RESEARCH INTERESTS

- **Recommendation:** Long-tail, Sequential, Debias, Multi-domain, Pre-training, LLMs
- **Large Language Model:** Medication Recommendation, Multi-task, Medical Applications
- **Causal Inference:** Treatment Effect Estimation
- **Data Mining for Applications:** Smart Education, Intelligent Healthcare

PUBLICATIONS

[\[Google Scholar\]](#)

(* represents the corresponding author, [†] represents equal contribution.)

[C10]. **Qidong Liu**, Xian Wu*, Xiangyu Zhao*, Yuanshao Zhu, Derong Xu, Feng Tian* and Yefeng Zheng, When MOE Meets LLMs: Parameter Efficient Fine-tuning for Multi-task Medical Applications, *The 47th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR'24, CCF-A Conference)*. [\[PDF\]](#)

[C9]. **Qidong Liu**, Fan Yan, Xiangyu Zhao*, Zhaocheng Du, Huifeng Guo, Ruiming Tang* and Feng Tian, Diffusion Augmentation for Sequential Recommendation, *The 32nd International Conference on Information and Knowledge Management (CIKM'23, CCF-B Conference)*. [\[PDF\]](#)

- [J3]. **Qidong Liu**, Feng Tian*, Qinghua Zheng and Qianying Wang, Disentangling Interest and Conformity for Eliminating Popularity Bias in Session-Based Recommendation, *Knowledge and Information Systems (KAIS'23, CCF-B Journal)*. [\[PDF\]](#)
- [C8]. **Qidong Liu**, Feng Tian*, Weihua Ji and Qinghua Zheng, A New Representation Learning Method for Individual Treatment Effect Estimation: Split Covariate Representation Network, *The 12th Asian Conference on Machine Learning (ACML'20, CCF-C Conference)*. [\[PDF\]](#)
- [C7]. Chengxi Li[†], Yejing Wang[†], **Qidong Liu**[†], Xiangyu Zhao*, Wangyu Wang, Yiqi Wang, Lixin Zou, Wenqi Fan and Qing Li, STRec: Sparse Transformer for Sequential Recommendations, *The 17th ACM Conference on Recommender Systems (RecSys'23, CCF-B Conference)*. [\[PDF\]](#)
- [C6]. Yuanshao Zhu, James Jianqiao Yu*, Xiangyu Zhao*, **Qidong Liu**, Yongchao Ye, Chen Wei, Zijian Zhang, Xuetao Wei, Yuxuan Liang*, ControlTraj: Controllable Trajectory Generation with Topology-Constrained Diffusion Model, *The 30th SIGKDD Conference on Knowledge Discovery and Data Mining (KDD'24), CCF-A Conference* [\[PDF\]](#)
- [C5]. Zijian Zhang, Shuchang Liu, Jiaao Yu, Qingpeng Cai, Xiangyu Zhao*, Chunxu Zhang, Ziru Liu, **Qidong Liu**, Hongwei Zhao, Lantao Hu, Peng Jiang and Kun Gai, M3oE: Multi-Domain Multi-Task Mixture-of Experts Recommendation Framework, *The 47th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR'24, CCF-A Conference)*. [\[PDF\]](#)
- [C4]. Zijian Zhang, Xiangyu Zhao*, **Qidong Liu**, Chunxu Zhang, Qian Ma, Wanyu Wang, Hongwei Zhao, Yiqi Wang and Zitao Liu, Prompt-Enhanced Spatio-Temporal Multi-Attribute Prediction, *The 32nd International Conference on Information and Knowledge Management (CIKM'23, CCF-B Conference)*. [\[PDF\]](#)
- [C3]. Yuhao Wang, Xiangyu Zhao*, Bo Chen, **Qidong Liu**, Huifeng Guo, Huanshuo Liu, Yichao Wang, Rui Zhang and Ruiming Tang, PLATE: A Prompt-enhanced Paradigm for Multi-Target Cross-Domain Recommendation, *The 46th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR'23, CCF-A Conference)*. [\[PDF\]](#)
- [C2]. Fang Nan, Feng Tian*, Yaozhi Wang, **Qidong Liu**, Yanze Wu, Jizhong Zhang, Huan Li, Haiping Zhu, Yuzhe Yao, Heng Zhang, Yaqiang Wu and Qinghua Zheng. Inferring Actions and Joint Attention From Dual-view Classroom Videos, *AAAI 2023 Workshop Artificial Intelligence for Education (AI4Edu'23)* [\[PDF\]](#)
- [J2]. Wenqi Fan, Xiangyu Zhao*, Xiao Chen, Jingran Su, Jingtong Gao, Lin Wang, **Qidong Liu**, Yiqi Wang, Han Xu, Lei Chen, Qing Li, A Comprehensive Survey on Trustworthy Recommender Systems. *arXiv preprint arXiv:2209.10117*. [\[PDF\]](#)
- [J1]. Haiping Zhu, Chengcheng Zhao, **Qidong Liu**, Qinghua Zheng, Jiangwei Zeng, Feng Tian* and Yan Chen, Reciprocal-Constrained Interpretable Job Recommendation. *Journal of Computer Research and Development*, 2021, 58(12): 2660-2672. (CCF-A Chinese Journal) [\[PDF\]](#)
- [C1]. Chen, Yan, Jiangwei Zeng, Haiping Zhu, Feng Tian*, Yu Liu, **Qidong Liu** and Qinghua Zheng. A Behavior-Item Based Hybrid Intention-Aware Frame for Sequence Recommendation. *International Conference on e-Business Engineering. Springer, Cham, 2019. (ICEBE'19)* [\[PDF\]](#)

PRE-PRINT PAPERS

- [J4]. **Qidong Liu**, Xian Wu*, Xiangyu Zhao*, Yuanshao Zhu, Zijian Zhang, Feng Tian* and Yefeng Zheng, Large Language Models Enhanced Sequential Recommendation for Long-tail User and Item, *arXiv preprint arXiv:2405.20646*. [\[PDF\]](#)
- [J3]. **Qidong Liu**, Xian Wu*, Xiangyu Zhao*, Yeijing Wang, Zijian Zhang, Feng Tian* and Yefeng Zheng, Large Language Model Distilling Medication Recommendation Model, *arXiv preprint arXiv:2402.02803*. [\[PDF\]](#)
- [J2]. **Qidong Liu**[†], Jiayi Hu[†], Yutian Xiao[†], Jingtong Gao and Xiangyu Zhao*, Multimodal Recommender Systems: A Survey, *arXiv preprint arXiv:2302.03883*. [\[PDF\]](#)
- [J1] Derong Xu, Ziheng Zhang, Zhihong Zhu, Zhenxi Lin, **Qidong Liu**, Xian Wu, Tong Xu, Xiangyu Zhao, Yefeng Zheng, Enhong Chen, Editing Factual Knowledge and Explanatory Ability of Medical Large Language Models, *arXiv*

COMPETITIONS

- The **creative award** and 7th Place in TianChi CCKS2023-PromptCBLUE Competition (Common Channel) [\[CODE\]](#) [\[RANK\]](#) 2023
- The 3rd Place in YIDIANZIXUN Code Competition (CTR prediction channel). [\[CODE\]](#) [\[RANK\]](#) 2021

AWARDS

- Outstanding Graduate Award of XJTU 2023
- Graduate Student First-class Academic Scholarship 2023
- Creative Award in TianChi CCKS2023-PromptCBLUE Competition (Common Channel) 2023
- IJCAI Travel Grant Award 2023
- Outstanding Graduate Award of XJTU 2020
- Graduate Student First-class Academic Scholarship 2020
- XJTU Siyuan Scholarship 2017

INTERNSHIP

Tencent Jarvis Lab May 2023 - Now

- **Leader:** Dr. Xian Wu
- Large Language Models for Medical Applications

PROJECTS

LLMs Enhanced Sequential Recommendation (with Tencent Jarvis Lab) Feb 2024 - May 2024

- **Mentor:** Dr. Xian Wu
- We propose an LLMs enhancement framework to alleviate the long-tail user and long-tail item challenges for the sequential recommendation. For the long-tail item challenge, we design the dual-view modeling framework to utilize the LLMs embedding. For the long-tail user challenge, we devise the retrieval augmented self-distillation.
- We conduct experiments on three real-world datasets combined with three popular sequential recommendation models. The results show that our method can outperform SOTA consistently.
- **Outcome:** The paper is submitted to NeurIPS'24.

Large Language Model for Medication Recommendation (with Tencent Jarvis Lab) Nov 2023 - Jan 2024

- **Mentor:** Dr. Xian Wu
- We design an LLM-based (i.e., LLaMA-7b) medication recommendation model by proper prompt, classification head and SFT. We design a collaborative model and enhance it by distilling from the LLM-based model.
- We conduct experiments on the MIMIC-III and MIMIC-IV datasets based on LLaMA-7b. The results show that our method can outperform SOTA for single-visit and multi-visit patients.
- **Outcome:** The paper is submitted to TOIS.

Multi-task LLM Fine-tuning for Medical Applications (with Tencent Jarvis Lab) Jun 2023 - Oct 2023

- **Mentor:** Dr. Xian Wu
- We design a Multi-expert LoRA method to fine-tune large language model (e.g., ChatGLM, Baichuan) for multi-task medical applications.

- We conduct experiments on the PromptCBLUE dataset based on ChatGLM-6B. The results show that our method can outperform fine-tuning on single task or all tasks.
- **Outcome:** The creative award in Tianchi CCKS2023-PromptCBLUE competition. The paper “When MOE Meets LLMs: Parameter Efficient Fine-tuning for Multi-task Medical Applications” is accepted by SIGIR’24.

Diffusion Augmentation for Sequential Recommendation (with Huawei Noah’s Ark) Feb 2023 - Jun 2023

- **Mentor:** Fan Yan & Zhaocheng Du
- We design a Diffusion Model based augmentation method for sequential recommendation.
- We conduct comprehensive experiments on three datasets and three SRS backbones to illustrate the efficiency and flexibility of the method.
- **Outcome:** The paper “Diffusion Augmentation for Sequential Recommendation” is accepted by CIKM’23.

Medication Recommendation for Multi-center Hospital (with Tencent Jarvis Lab) Aug 2022 - Nov 2022

- **Mentor:** Zhaopeng Qiu [\[HOMEPAGE\]](#)
- We constructed a contrastive pretrain model with prompt tuning for multi-center medication recommendation.
- We achieved SOTA performance compared with advanced medication recommendation models and multi-domain recommendation methods.
- **Outcome:** The paper “A Contrastive Pretrain Model with Prompt Tuning for Multi-center Medication Recommendation” is submitted to TOIS (Minor Revision).

Employment Recommendation for undergraduate (with XJTU Job Center) 2020 - 2021

- We collected five-year employment data of undergraduate in XJTU.
- We proposed a reciprocal-constrained employment recommendation model based on multi-task learning.
- **Outcome:** The model gives service to undergraduate in XJTU.

Micro-grid Load Prediction (with TEBA) 2019 - 2020

- We constructed a LSTM-based and Multi-source Data Fusion model for load prediction.
- We achieved 95% accuracy under 20%EP standard and the model is applied in real production environment.
- **Outcome:** I completed a patent draft.

TEACHING EXPERIENCE

- The 32nd International Joint Conference on Artificial Intelligence. (IJCAI’23) Aug 2023
Tutorial Speaker: Trustworthy Recommender Systems: Foundations and Frontiers [\[website\]](#)
- The 29th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD’23) Aug 2023
Tutorial Speaker: Trustworthy Recommender Systems: Foundations and Frontiers [\[website\]](#)
- The ACM Web Conference (WWW’23) May 2023
Tutorial Speaker: Trustworthy Recommender Systems [\[website\]](#)
- Hong Kong Institute for Data Science Mar 2023
Invited Talk: Pretrain Model for Multi-center Medication Recommendation [\[POSTER\]](#)
- National University of Defense Technology Jul 2021
Invited Talk: Intelligent Tutor System
- Xi’an Jiaotong Univeristy Feb 2020 - Jun 2020
Teaching Assistant: Big Data analytic and knowledge discovery

SERVICES

Journal Reviewer

- ACM Transactions on Knowledge Discovery from Data (TKDD)

- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)

Program Chair & Conference Reviewer

- Annual Conference on Neural Information Processing Systems (NeurIPS) 2024
- International Conference on Information and Knowledge Management (CIKM) 2024
- International Joint Conference on Artificial Intelligence (IJCAI) 2024
- AAAI Conference on Artificial Intelligence (AAAI) 2024
- ACM Conference on Recommender Systems (RecSys) 2023 - 2024
- ACM SIGIR Conference on Information Retrieval in the Asia Pacific (SIGIR-AP) 2023
- ACM International Conference on Multimedia (MM) 2023
- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) 2023
- IEEE International Conference on Data Mining (ICDM) 2022

Session Chair & Volunteer

- The chair of “Session 9G Sequence Modeling 6” in CIKM 2023 2023
- The volunteer in IJCAI 2023 2023

[Update on June 2024]