Lei Li 李磊

Post-doctoral Research Fellow

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RM625C, David C. Lam Building, Department of Computer Science, Hong Kong Baptist University

Research Interests

Explainable Recommendation, Recommender Systems, Large Language Models, Natural Language Processing

Education

Ph.D. of Computer Science — *Hong Kong Baptist University (HKBU)*

Advisor: Prof. Li Chen, Mentors: Dr. Yongfeng Zhang & Dr. Ruihai Dong — *August 2017 – July 2022*

Thesis: Natural Language Explanation for Recommendations and Beyond

Studied recurrent neural networks (RNN), Transformer, large language models (LLM) for natural language explanation generation for recommender systems, and published 3 papers at CIKM'20, ACL'21 and TOIS

Major research outcome integrated into a small eco-system NLG4RS for recommender systems-based natural language generation, which includes benchmark datasets, evaluation metrics and representative models

B.Eng. of Computer Science & B.Sc. of Mathematics — *Shenzhen University (SZU)*

Advisor: Prof. Weike Pan — *September 2013 – June 2017*

Research on recommendation algorithms, especially collaborative filtering and matrix factorization

Experience

Hong Kong Baptist University — *August 2022 – Present*

Post-doctoral Research Fellow *Advisor: Prof. Li Chen, Mentor: Dr. Yongfeng Zhang* — *Hong Kong, China*

- Supported by Hong Kong Research Grants Council (RGC)
- Research on large language models (LLM)-based recommendation
- Published a survey at COLING'24, where how LLM would shape recommender systems from multi-stage filtering to single-stage filtering is discussed

Rutgers University — *February 2023 – June 2023*

Visiting Researcher *Advisor: Dr. Yongfeng Zhang* — *New Brunswick, USA*

- Published 1 paper about efficient LLM-based recommendation at CIKM'23

Inspir.ai — *June 2019 – August 2019*

Intern *Mentor: Dr. Peng Peng* — *Beijing, China*

- Research on explaining the decision-making process of reinforcement learning (RL) agents
- Visualization of the replay data of the computer game StarCraft II

Hong Kong Baptist University — *March 2017 – June 2017*

Research Exchange Student *Advisor: Prof. Li Chen* — *Hong Kong, China*

- Research on personality for recommender systems

Suishou Technology — *August 2016 – November 2016*

Intern *Advisor: Prof. Weike Pan* — *Shenzhen, China*

- Utilized machine learning tools (such as Liblinear and XGBoost) to mine potential customers for personalized advertising
- Increased the company's sales of financial products by 4 times during an online test

Selected Publication

- Large Language Models for Generative Recommendation: A Survey and Visionary Discussions
  Lei Li, Yongfeng Zhang, Dugang Liu, Li Chen
  COLING'24: The 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation, pages *-*, Turin, Italy, May 20–25, 2024

- Prompt Distillation for Efficient LLM-based Recommendation
  Lei Li, Yongfeng Zhang, Li Chen
  CIKM'23: Proceedings of the 32nd ACM International Conference on Information and Knowledge Management, pages 1348-1357, Birmingham, United Kingdom, October 21–25, 2023

- Personalized Prompt Learning for Explainable Recommendation
  Lei Li, Yongfeng Zhang, Li Chen
  TOIS: ACM Transactions on Information Systems, volume 41 (4), article 103, pages 1-26, March 2023

- On the Relationship between Explanation and Recommendation: Learning to Rank Explanations for Improved Performance
  Lei Li, Yongfeng Zhang, Li Chen
  TIST: ACM Transactions on Intelligent Systems and Technology, volume 14 (2), article 21, pages 1-24, February 2023

- Augmenting Legal Judgment Prediction with Contrastive Case Relations
  Dugang Liu, Weihao Du, **Lei Li**, Weike Pan, Zhong Ming
  COLING'22: Proceedings of the 29th International Conference on Computational Linguistics, pages 2658-2667, Gyeongju, Republic of Korea, October 12–17, 2022

- Improving Personalized Explanation Generation through Visualization
  Shijie Geng, Zuohui Fu, Yingqiang Ge, **Lei Li**, Gerard de Melo, Yongfeng Zhang
  ACL'22: Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics, pages 244-255, Dublin, Ireland, May 22–27, 2022

- Personalized Transformer for Explainable Recommendation
  Lei Li, Yongfeng Zhang, Li Chen
  ACL'21 (oral): Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing, pages 4947-4957, Online, Thailand, August 1–6, 2021

- EXTRA: Explanation Ranking Datasets for Explainable Recommendation
  Lei Li, Yongfeng Zhang, Li Chen
  SIGIR'21: Proceedings of the 44th International ACM SIGIR Conference on Research and Development in Information Retrieval, pages 2463-2469, Virtual Event, Canada, July 11–15, 2021

- Generate Neural Template Explanations for Recommendation
  Lei Li, Yongfeng Zhang, Li Chen
  CIKM'20: Proceedings of the 29th ACM International Conference on Information & Knowledge Management, pages 755-764, Virtual Event, Ireland, October 19–23, 2020

Research Proposal

- Causal Inference for Natural Language Processing in Recommender Systems
  Awarded RGC Postdoctoral Fellowship Scheme (PDFS) in 2022

- Research on Generating Explainable Serendipity-Oriented Recommendations based on Knowledge Graph
  Partly involved Principal Investigator: Prof. Li Chen
  Funded by General Research Fund (GRF) in 2020

- Engaging the Audience with AI-powered News Chatbot
  Partly involved Principal Investigator: Prof. Li Chen
  Funded by HKBU IRCMS Project in 2019

Talk & Tutorial

Large Language Models for Generative Recommendation *April 2024*
ConsumerBG AI Workshop Hong Kong *Huawei Hong Kong Research Center*

Large Language Models for Generative Recommendation *April 2024*
COMP4135 & COMP7240 Recommender Systems *Hong Kong Baptist University*

Large Language Models for Generative Recommendation *April 2024*
Huawei Computing Youth Forum *Hangzhou*

Large Language Models for Recommendation *September 2023*
Tutorial at RecSys'23 *Singapore*
Attracted hundreds of audience

Generating Recommendation Explanations with Transformer and Pre-trained Model *April 2023*
COMP4135 & COMP7240 Recommender Systems *Hong Kong Baptist University (Online)*

Generating Recommendation Explanations with Transformer and Pre-trained Model *March 2023*
Data Science Lab *Korea Advanced Institute of Science & Technology (Online)*

Improving Personalized Explanation Generation through Visualization *December 2022*
Department of Computer Science *University of Luxembourg (Online)*

How to Come up with Ideas and Do Research: Experience Sharing *October 2021*
COMP7160 Research Methods in Computer Science *Hong Kong Baptist University*

Academic Services

- **Guest Editor**: ACM Transactions on Recommender Systems (TORS) special issue on "Large Language Models for Recommender Systems", 2023
- **Workshop Organizer**: "EARL: Workshop on Evaluating and Applying Recommendation Systems with Large Language Models". RecSys'24
- **Session Chair**: CIKM'23 (Recommendation 9), WWW'23 (Multi-behavior Recommendation & Self-supervised Learning)
- **Program Committee Member**: RecSys'24, WWW'23, RecSys'22
- **Invited Reviewer**:
  - IEEE Transactions on Knowledge and Data Engineering (TKDE), 2023, 2024
  - ACM Transactions on Information Systems (TOIS), 2020, 2022, 2024
  - ACM Transactions on Recommender Systems (TORS), 2023
  - IEEE Transactions on Big Data (TBD), 2022
  - ACM Transactions on Interactive Intelligent Systems (TiiS), 2021
  - Neurocomputing (NEUCOM), 2018, 2024
  - Knowledge-based Systems (KNOSYS), 2018
  - Journal of Intelligent Information Systems (JIIS), 2021
- **External Reviewer**: SIGIR'21, WWW'21, WWW'19
- **Student Volunteer**: EMNLP'19

Awards & Honors

RGC Postdoctoral Fellowship Scheme	Hong Kong RGC	*August 2022 – Present*
RPg Performance Award	HKBU	*September 2021*
Research Postgraduate Studentship	HKBU	*August 2017 – August 2021*
Student Travel Grant (Virtual)	SIGIR'21	*July 2021*
Research Excellence Award	PG Day, HKBU	*June 2021*
Student Travel Grant (Virtual)	CIKM'20	*October 2020*
Best Presentation Award	PG Day, HKBU	*June 2020*
Excellent Teaching Assistant Performance Award	HKBU	*June 2018, 2019, 2020*
Teaching Assistant Performance Award	HKBU	*February 2020*
Outstanding Graduate	SZU	*June 2017*

Technical Skill

Programming Language	Python, Java, Matlab, C++ (ordered by proficiency)
Platform and Tool	PyTorch, TensorFlow, Scikit-learn, MongoDB, Django, XGBoost, Liblinear

Language

Mandarin	Native
English	Working proficiency
Cantonese	Elementary

Last update: April 23, 2024