

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
- Wrote a survey paper about LLM-based recommendation, 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

- Large Language Models for Generative Recommendation: A Survey and Visionary Discussions
Lei Li, Yongfeng Zhang, Dugang Liu, Li Chen
arXiv: 2023
- Prompt Distillation for Efficient LLM-based Recommendation
Lei Li, Yongfeng Zhang, Li Chen
CIKM'23: Proceedings of the 32nd ACM International Conference on Information & Knowledge Management, pages *-*, 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
- TUR: Utilizing Temporal Information to Make Unexpected E-commerce Recommendations
Yongxin Ni, Ningxia Wang, Li Chen, Rui Chen, **Lei Li**
WISE'22: 23rd International Conference on Web Information Systems Engineering, pages 553-563, Biarritz, France, November 1–3, 2022
- 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
- Effects of Feature-based Explanation and Its Output Modality on User Satisfaction with Service Recommender Systems
Zhirun Zhang, Li Chen, Tonglin Jiang, Yutong Li, **Lei Li**
Frontiers in Big Data, volume 5, article 897381, pages 1-17, May 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
- CAESAR: Context-Aware Explanation based on Supervised Attention for Service Recommendations
Lei Li, Li Chen, Ruihai Dong
JIIS: Journal of Intelligent Information Systems, volume 57 (1), pages 147-170, August 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
- Towards Controllable Explanation Generation for Recommender Systems via Neural Template
Lei Li, Li Chen, Yongfeng Zhang
WWW'20 Demo: Companion Proceedings of the Web Conference 2020, pages 198-202, Taipei, Taiwan, April 20–24, 2020
- Context-aware Co-Attention Neural Network for Service Recommendations
Lei Li, Ruihai Dong, Li Chen
ICDE'19 Workshop: 2019 IEEE 35th International Conference on Data Engineering Workshops, pages 201-208, Macao, China, April 8–12, 2019
- RLT: Residual-Loop Training in Collaborative Filtering for Combining Factorization and Global-Local Neighborhood
Lei Li, Weike Pan, Li Chen, Zhong Ming
ICWS'18: 25th International Conference on Web Services, pages 326-336, Seattle, USA, June 25–30, 2018

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 Recommendation <i>Tutorial at RecSys'23</i> Attracted hundreds of audience	<i>September 2023</i> <i>Singapore</i>
Generating Recommendation Explanations with Transformer and Pre-trained Model <i>COMP4135 & COMP7240 Recommender Systems</i>	<i>April 2023</i> <i>Hong Kong Baptist University (Online)</i>
Generating Recommendation Explanations with Transformer and Pre-trained Model <i>Data Science Lab</i>	<i>March 2023</i> <i>Korea Advanced Institute of Science & Technology (Online)</i>
Improving Personalized Explanation Generation through Visualization <i>Department of Computer Science</i>	<i>December 2022</i> <i>University of Luxembourg (Online)</i>
How to Come up with Ideas and Do Research: Experience Sharing <i>COMP7160 Research Methods in Computer Science</i>	<i>October 2021</i> <i>Hong Kong Baptist University</i>

Academic Services

- **Guest Editor**: ACM Transactions on Recommender Systems (TORS) special issue on “Large Language Models for Recommender Systems”, 2023
- **Topic Coordinator**: Frontiers in Big Data special issue on “Natural Language Processing for Recommender Systems”, 2023

- **Session Chair:** WWW'23 (Multi-behavior Recommendation & Self-supervised Learning)
- **Program Committee Member:** WWW'23, RecSys'22, SocInfo'22, SAC'22, SAC'21
- **Invited Reviewer:**
 - IEEE Transactions on Knowledge and Data Engineering (TKDE), 2023
 - ACM Transactions on Information Systems (TOIS), 2022, 2020
 - IEEE Transactions on Big Data (TBD), 2022
 - ACM Transactions on Interactive Intelligent Systems (TiiS), 2021
 - Journal of Intelligent Information Systems (JIIS), 2021
 - Neurocomputing (NEUCOM), 2018
 - Knowledge-based Systems (KNOSYS), 2018
- **External Reviewer:** SIGIR'21, WWW'21, WWW'19, ImpactRS'20, CARS'19
- **Student Volunteer:** EMNLP'19

Awards & Honors

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
Excellent Student of Academic Performance (2nd Prize)	SZU	October 2016
Excellent Student Leader (2nd Prize)	SZU	October 2015
Song Shan Hu Scholarship	SZU	October 2014
National Motivational Scholarship	SZU	October 2014

Technical Skill

Programming Language	Python, Java, Matlab, C++ (ordered by proficiency)
Platform and Tool	Linux, PyTorch, TensorFlow, L ^A T _E X, Scikit-learn, MongoDB, Django, XGBoost, Liblinear, Git

Language

Mandarin	Native
English	Working proficiency
Cantonese	Elementary

Last update: October 11, 2023