

## 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 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
- 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

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- 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

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

## Academic Services

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- **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:** CIKM'23 (Recommendation 9), WWW'23 (Multi-behavior Recommendation & Self-supervised Learning)
- **Program Committee Member:** WWW'23, RecSys'22
- **Invited Reviewer:**
  - IEEE Transactions on Knowledge and Data Engineering (TKDE), 2023, 2024
  - ACM Transactions on Information Systems (TOIS), 2020, 2022
  - 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
  - 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

<b>Postdoctoral Fellowship Scheme</b>	Hong Kong RGC	August 2022 – Present
<b>RPg Performance Award</b>	HKBU	September 2021
<b>Research Postgraduate Studentship</b>	HKBU	August 2017 – August 2021
<b>Student Travel Grant (Virtual)</b>	SIGIR'21	July 2021
<b>Research Excellence Award</b>	PG Day, HKBU	June 2021
<b>Student Travel Grant (Virtual)</b>	CIKM'20	October 2020
<b>Best Presentation Award</b>	PG Day, HKBU	June 2020
<b>Excellent Teaching Assistant Performance Award</b>	HKBU	June 2018, 2019, 2020
<b>Teaching Assistant Performance Award</b>	HKBU	February 2020
<b>Outstanding Graduate</b>	SZU	June 2017
<b>Excellent Student of Academic Performance (2nd Prize)</b>	SZU	October 2016
<b>Excellent Student Leader (2nd Prize)</b>	SZU	October 2015
<b>Song Shan Hu Scholarship</b>	SZU	October 2014
<b>National Motivational Scholarship</b>	SZU	October 2014

### Technical Skill

<b>Programming Language</b>	Python, Java, Matlab, C++ (ordered by proficiency)
<b>Platform and Tool</b>	Linux, PyTorch, TensorFlow, $\LaTeX$ , Scikit-learn, MongoDB, Django, XGBoost, Liblinear, Git

### Language

<b>Mandarin</b>	Native
<b>English</b>	Working proficiency
<b>Cantonese</b>	Elementary