Shijun Li

shijunli@utexas.edu • Google Scholar • LinkedIn • GitHub • Homepage

Education

University of Texas at Austin, Austin, U.S. 08/2023 – Present

PhD student in Electrical and Computer Engineering, Cockrell School of Engineering

University of Science and Technology of China, Hefei, China 09/2020 – 07/2023

Master in Electronic and Information Engineering, School of Information Science and Technology

University of Science and Technology of China, Hefei, China 09/2016 – 07/2020

B.E. in Automation, School of Information Science and Technology

Publications

- **Shijun Li**, Hilaf Hasson & Joydeep Ghosh, "OMAC: Optimization for LLM-Based Multi-Agent Collaboration", ArXiv preprint, [pdf] [codes]
- **Shijun Li**, Hilaf Hasson, Jing Hu & Joydeep Ghosh, "Goal-Conditioned Supervised Learning for Multi-Objective Recommendation", ArXiv preprint, [pdf]
- **Shijun Li**, Yu Wang, Jin Wang, Ying Li, Joydeep Ghosh, & Anne Cocos, "LLM Reasoning for Cold-Start Item Recommendation", ArXiv preprint, [pdf]
- **Shijun Li**, Wenqiang Lei, Qingyun Wu, Xiangnan He, Peng Jiang & Tat-Seng Chua, "Seamlessly Unifying Attributes and Items: Conversational Recommendation for Cold-Start Users", in ACM Transactions on Information Systems **(TOIS 2021)**, [pdf] [codes]
- Chongming Gao*, **Shijun Li***, Wenqiang Lei, Jiawei Chen, Biao Li, Peng Jiang, Xiangnan He, Jiaxin Mao & Tat-Seng Chua, "KuaiRec: A Fully-observed Dataset and Insights for Evaluating Recommender Systems", (* **Equal contribution**), in Proceedings of the 31st ACM International Conference on Information and Knowledge Management (**CIKM 2022**) , [pdf] [codes] [data] [presentation]
- Chongming Gao*, **Shijun Li***, Yuan Zhang*, Jiawei Chen, Biao Li, Wenqiang Lei, Peng Jiang & Xiangnan He, "KuaiRand: An Unbiased Sequential Recommendation Dataset with Randomly Exposed Videos", (* **Equal contribution**), in Proceedings of the 31st ACM International Conference on Information and Knowledge Management (**CIKM 2022**), [pdf] [data] [poster]
- Chongming Gao, Shiqi Wang, **Shijun Li**, Jiawei Chen, Xiangnan He, Wenqiang Lei, Biao Li, Yuan Zhang & Peng Jiang, "CIRS: Bursting Filter Bubbles by Counterfactual Interactive Recommender System", in ACM Transactions on Information Systems **(TOIS 2023)**, [pdf] [codes]
- Gangyi Zhang, Chongming Gao, Wenqiang Lei, Xiaojie Guo, **Shijun Li**, Lingfei Wu, Hongshen Chen, Zhuozhi Ding, Sulong Xu & Xiangnan He, "Vague Preference Policy Learning for Conversational Recommendation", in ACM Transactions on Information Systems **(TOIS 2025)**, [pdf]

Experience

Netflix - Machine Learning Research Intern; Los Gatos, U.S. 06/2025 – 08/2025

- Developed LLM-based reasoning methodologies for recommendations in cold-start scenarios, leveraging supervised and RL-based fine-tuning approaches to further enhance reasoning capabilities
- Conducted experiments on real-world data at Netflix. Results demonstrated the superior performance of reasoning strategies after fine-tuning against Netflix's base ranking model

Intuit - Data Science Intern; Mountain View, U.S. 05/2024 – 08/2024

- Applied goal-conditioned supervised learning to Intuit's recommender library, targeting to achieve better long-term rewards and reduce noise caused by users' random choices in the training data
- Conducted offline experiments on real-world dataset from Intuit's recommendation system. Results demonstrated significant improvements over the existing baseline model with minimal increase in complexity

Kuaishou Technology - Algorithm Intern; Beijing, China 03/2020 – 05/2023

- Studied the cold-start scenario and trustworthy evaluation of conversational recommendation, constructing two valuable datasets and accomplishing three papers
- Implemented offline RL in real-world short video recommendation system, serving millions of people and achieving significant online improvement

University of Florida, SmartData Lab - Research Intern; Gainesville, U.S. 07/2019 – 08/2019

- Studied the growth and boundaries of grains in microstructure in an RL framework
- Processed and decoded the pictures of microstructure into low-dimension expression, while denoising for the vagueness and noises in these pictures

Selected Projects & Research

Project: General Optimization for Multi-Agent Collaboration 07/2024 - 06/2025

Advisor: Dr. Hilaf Hasson (Intuit), Prof. Joydeep Ghosh (UT Austin)

- Developed a general framework to optimize the functionality and structure of multi-agent collaboration
- Designed evolution algorithm for single-dimension and multi-dimension optimization

Project: Goal-conditioned Supervised Learning for Multi-Objective Learning 11/2023 - 05/2024

Advisor: Dr. Hilaf Hasson (Intuit), Dr. Jing Hu (Intuit), Prof. Joydeep Ghosh (UT Austin)

- Introduced a general supervised framework for multi-objective recommendations that selectively leverages training data with desirable long-term rewards
- Implemented it using a transformer encoder optimized with a standard cross-entropy loss, avoiding more complex architectures or optimization constraints that are typical for multi-objective learning
- Introduced a goal-choosing algorithm that can model the distribution of achievable goals over interaction sequences and choose desirable "high" goals for inference

Project: Cold-Start Recommendation by Conversational Recommendation 03/2020 - 12/2020

Advisor: Prof. Xiangnan He (USTC), Prof. Qingyun Wu (PSU), Prof. Tat-Seng Chua (NUS)

- Actively asking users' preferences by conversations helps to efficiently capture the interest of cold-start users
- Proposed a holistic framework to seamlessly solve all conversation policy questions in an end-to-end manner
- Applied Thompson Sampling to conversational recommendation for keeping EE balance in cold-start scenario

Project: Trustworthy Evaluation for Recommender Systems 03/2021 - 12/2021

Advisor: Prof. Xiangnan He (USTC), Prof. Wenqiang Lei (SCU), Dr. Peng Jiang (Kuaishou Inc.)

- Collected a fully-observed dataset for the first time on Kuaishou, which can be taken as a trustworthy backbone for the evaluation of recommender systems
- Studied the effect of different exposure rates and various biases on the evaluation of conversational recommendation systems (CRSs)
- Investigated the effect of matrix completion, i.e. estimating the missing values, on the evaluation of CRSs

Project: Reinfocement Learning Implementation in Real-World Recommender System 03/2022 - 07/2022

Advisor: Prof. Xiangnan He (USTC), Dr. Yuan Zhang (Kuaishou Inc.)

- Designed an actor-critic based RL model for online recommendation for millions of users on Kuaishou
- Trained the model in an offline RL manner by building and interacting with the world model
- Implemented the RL model for the re-ranking task in real-world recommendation application, achieving significant improvement in users' total watch time and diversity of recommended videos

Professional Services & Awards

- **PC Member** for ICLR (2025-2026), KDD (2022-2024), ECML-PKDD (2024), WSDM (2022), and the 1st Workshop on Recommendation with Generative Models on CIKM (2023)
- **Invited Reviewer** for ACM TOIS, ACM TWEB, ACM TORS, ICML (2025), NeurIPS (2024-2025), and WWW (2022)
- UT Austin Engineering Fellowship, UT Austin, U.S. 2023 & 2024 & 2025
- Illinois Distinguished Fellowship, UIUC, U.S. (declined) 2023
- Outstanding Graduate Scholarship, USTC, China 2023
- National Scholarship, Ministry of Education of China, China (for top 2% students) 2022
- First Class Academic Scholarship, USTC, China 2020 & 2021 & 2022
- Outstanding Student Scholarship, USTC, China 2017 & 2018 & 2019

Skills

- **Programming Languages:** Python, C, C++, Matlab (ranked by proficiency)
- **Tools and Frameworks:** PyTorch, Tensorflow, MySQL, Git, LaTeX, Docker, Hadoop