

# Dugang Liu

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## Work Experience

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**Associate Researcher**, Guangdong Laboratory of Artificial Intelligence and Digital Economy (SZ), China 2023.01 – Now

**Research Intern**, Tencent Financial Technology, China 2022.05 – 2022.12

**Research Intern**, Huawei 2012 Lab, China 2021.04 – 2022.01

## Research Interests

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I am broadly interested in **data mining**, **data-centric AI**, and their applications in scenarios such as **recommender systems** and **intelligent marketing**, with a special emphasis on enhancing the responsibility in algorithms to provide users with fair, trustworthy and efficient information services.

## Education

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**Ph.D.**, Computer Science, Shenzhen University, China 2019.09 – 2022.12

**M.S.**, Computer Science, Xiamen University, China 2016.09 – 2019.06

**B.S.**, Mathematics, Fujian Normal University, China 2012.09 – 2016.06

## Grant

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The Youth Project of the National Natural Science Foundation of China 2024.01 – 2026.12

## Publication

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### Refereed Publications

- SIGIR 2024 **Dugang Liu**, Shenxian Xian, Yuhao Wu, Chaohua Yang, Xing Tang, Xiuqiang He, Zhong Ming\*. AutoDCS: Automated decision chain selection in deep recommender systems. The 47th International ACM SIGIR Conference on Research and Development in Information Retrieval.
- DASFAA 2024 Zexu Sun, **Dugang Liu**\*, Xing Tang, Yunpeng Weng, Xiuqiang He. Towards effective and efficient multi-valued treatment uplift modeling in online marketing. The 29th International Conference on Database Systems for Advanced Applications.
- TKDD 2024 Cheng Wen, Yuandao Cai, Bin Zhang, Jie Su\*, Zhuwu Xu, **Dugang Liu**, Shengchao Qin\*, Zhong Ming, Cong Tian. Automatically inspecting thousands of static bug warnings with large language model: How far are we?. ACM Transactions on Knowledge Discovery from Data.
- LREC-COLING 2024 Lei Li, Yongfeng Zhang, **Dugang Liu**, Li Chen. Large language models for generative recommendation: A survey and visionary discussions. The 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation.

- WSDM 2024 **Dugang Liu**, Chaohua Yang, Xing Tang, Yejing Wang, Fuyuan Lyu, Weihong Luo, Xiuqiang He, Zhong Ming\*, Xiangyu Zhao\*. MultiFS: Automated multi-scenario feature selection in deep recommender systems. The 17th ACM International Conference on Web Search and Data Mining. (**oral paper**)
- NeurIPS 2023 Fuyuan Lyu, Xing Tang\*, **Dugang Liu**, Chen Ma, Weihong Luo, Liang Chen, Xiuqiang He, Xue Liu. Towards hybrid-grained feature interaction selection for deep sparse network. The 37th Conference on Neural Information Processing Systems.
- ICDM 2023 Zexu Sun, Bowei He, Ming Ma, Jiakai Tang, Yuchen Wang, Chen Ma, **Dugang Liu**\*. Robustness-enhanced uplift modeling with adversarial feature desensitization. The 23rd IEEE International Conference on Data Mining.
- MM 2023 **Dugang Liu**, Yang Qiao, Xing Tang, Liang Chen, Xiuqiang He, Zhong Ming\*. Prior-guided accuracy-bias tradeoff learning for CTR prediction in multimedia recommendation. The 31st ACM International Conference on Multimedia. (**oral paper**)
- RecSys 2023 **Dugang Liu**, Yuhao Wu, Weixin Li, Xiaolian Zhang, Hao Wang, Qinjuan Yang, Zhong Ming\*. Pairwise intent graph embedding learning for context-aware recommendation. The 17th ACM Conference on Recommender Systems. (**Best Full Paper Runner-up Award**)
- ECMLPKDD 2023 Xing Tang, Yang Qiao, Yuwen Fu, Fuyuan Lyu, **Dugang Liu**\*, Xiuqiang He\*. OptMSM: Optimizing multi-scenario modeling for click-through rate prediction. The European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases 2023: ADS and Demo Track.
- AIJ 2023 Zinan Lin, **Dugang Liu**, Weike Pan\*, Qiang Yang, Zhong Ming. Transfer learning for collaborative recommendation with biased and unbiased data. Artificial Intelligence.
- KDD 2023 **Dugang Liu**, Xing Tang\*, Han Gao, Fuyuan Lyu, Xiuqiang He\*. Explicit feature interaction-aware uplift network for online marketing. The 29th ACM SIGKDD Conference on Knowledge Discovery and Data Mining.
- TKDE 2023 **Dugang Liu**, Pengxiang Cheng, Zinan Lin, Jinwei Luo, Zhenhua Dong, Xiuqiang He, Weike Pan\*, Zhong Ming\*. KDCRec: Knowledge distillation for counterfactual recommendation via uniform data. IEEE Transactions on Knowledge and Data Engineering.
- WWW 2023 Fuyuan Lyu, Xing Tang, **Dugang Liu**\*, Liang Chen, Xiuqiang He\*, Xue Liu. Optimizing feature set for click-through rate prediction. The ACM Web Conference 2023.
- WWW 2023 **Dugang Liu**, Pengxiang Cheng, Hong Zhu, Xing Tang, Yanyu Chen, Xiaoting Wang, Weike Pan\*, Zhong Ming\*. DIWIFT: Discovering instance-wise influential features for tabular data. The ACM Web Conference 2023.
- TOIS 2023 **Dugang Liu**, Pengxiang Cheng, Zinan Lin, Xiaolian Zhang, Zhenhua Dong, Rui Zhang, Xiuqiang He, Weike Pan\*, Zhong Ming\*. Bounding system-induced biases in recommender systems with a randomized dataset. ACM Transactions on Information Systems.
- DASFAA 2023 **Dugang Liu**, Yang Qiao, Xing Tang, Liang Chen, Xiuqiang He, Weike Pan\*, Zhong Ming\*. Self-sampling training and evaluation for the accuracy-bias tradeoff in recommendation. The 28th International Conference on Database Systems for Advanced Applications.
- TORS 2023 **Dugang Liu**, Pengxiang Cheng, Hong Zhu, Zhenhua Dong, Xiuqiang He, Weike Pan\*, Zhong Ming\*. Debaised representation learning in recommendation via information bottleneck. ACM Transactions on Recommender Systems.
- COLING 2022 **Dugang Liu**, Weihao Du, Lei Li, Weike Pan\*, Zhong Ming\*. Augmenting legal judgment prediction with contrastive case relations. The 29th International Conference on Computational Linguistics.
- DSAA 2022 Jixiong Liu, **Dugang Liu**, Weike Pan\*, Zhong Ming\*. ALTRec: Adversarial learning for autoencoder-based tail recommendation. The 9th IEEE International Conference on Data Science and Advanced Analytics.

- KDD 2022 **Dugang Liu**, Mingkai He, Jinwei Luo, Jiangxu Lin, Meng Wang, Xiaolian Zhang, Weike Pan\*, Zhong Ming\*. User-event graph embedding learning for context-aware recommendation. The 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining.
- IJCNN 2022 Zheng Yuan, **Dugang Liu**, Weike Pan\*, Zhong Ming\*. SQL-Rank++: A novel listwise approach for collaborative ranking with implicit feedback. The 2022 International Joint Conference on Neural Networks.
- TKDE 2022 Chen Lin\*, **Dugang Liu**, Hanghang Tong, Yanghua Xiao. Spiral of silence and its application in recommender systems. IEEE Transactions on Knowledge and Data Engineering.
- RecSys 2021 **Dugang Liu**, Pengxiang Cheng, Hong Zhu, Zhenhua Dong, Xiuqiang He, Weike Pan\*, Zhong Ming\*. Mitigating confounding bias in recommendation via information bottleneck. The 15th ACM Conference on Recommender Systems. (**highlight paper**)
- RecSys 2021 Zinan Lin, **Dugang Liu**, Weike Pan\*, Zhong Ming\*. Transfer learning in collaborative recommendation for bias reduction. The 15th ACM Conference on Recommender Systems.
- JCS 2021 Zinan Lin, **Dugang Liu**, Weike Pan\*, Zhong Ming\*. Tri-task variational autoencoder for modeling of biased and unbiased unary feedback in recommender systems. Journal of Cyber Security.
- CCML 2021 Jinwei Luo, **Dugang Liu**, Weike Pan\*, Zhong Ming\*. Unbiased recommendation model based on improved propensity score estimation. The 18th China Conference on Machine Learning.
- SIGIR 2020 **Dugang Liu**, Pengxiang Cheng, Zhenhua Dong, Xiuqiang He, Weike Pan\*, Zhong Ming\*. A general knowledge distillation framework for counterfactual recommendation via uniform data. The 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval.
- WSDM 2019 **Dugang Liu**, Chen Lin\*, Zhilin Zhang, Yanghua Xiao, Hanghang Tong. Spiral of silence in recommender systems. The 12th ACM International Conference on Web Search and Data Mining.

## Workshop Papers

- DLP@RecSys 2023 Yunpeng Weng, Xing Tang, Liang Chen, **Dugang Liu**, Xiuqiang He. Expected transaction value optimization for precise marketing in FinTech platforms. The 5th Workshop on Deep Learning Practice for High-Dimensional Sparse Data at RecSys.
- DLP@KDD 2020 Wenqiang Chen, Lizhang Zhan, Yuanlong Ci, Minghua Yang, Chen Lin\*, **Dugang Liu**\*. FLEN: Leveraging field for scalable CTR prediction. The 2nd Workshop on Deep Learning Practice for High-Dimensional Sparse Data at KDD.

## Honors:

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- RecSys'23 Best Full Paper Runner-up Award, ACM, 2023
- Excellent Doctoral Thesis Award (Top 1), Shenzhen University, 2023
- Tencent Founders Scholarship, Shenzhen University, 2022
- Huawei Academia Sinica Innovation Pioneer (1st Prize), Huawei 2012 Lab, 2021

## Professional Services

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### Journal Reviewer

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

- IEEE Transactions on Information Forensics and Security (IEEE TIFS)
- IEEE Transactions on Software Engineering and Methodology (IEEE TOSEM)
- IEEE Transactions on Services Computing (IEEE TSC)
- IEEE Transactions on Circuits and Systems for Video Technology (IEEE TCSVT)
- IEEE Transactions on Big Data (IEEE TBD)
- ACM Transactions on Information Systems (ACM TOIS)
- ACM Transactions on Recommender Systems (ACM TORS)
- Information Sciences (Elsevier INS)
- Journal of Computer Science and Technology (JCST)
- Journal of Artificial Intelligence Research (JAIR)
- Applied Soft Computing (Elsevier ASOC)
- Journal of Intelligent Information Systems (Springer JIIS)
- Journal of Computational Social Science (Springer JCSS)

### **Conference Program Committees**

- AAAI Conference on Artificial Intelligence (AAAI)-21/24
- International Joint Conference on Artificial Intelligence (IJCAI)-23/24
- International Conference on Machine Learning (ICML)-24
- Conference on Neural Information Processing Systems (NeurIPS)-24
- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (SIGKDD)-23/24
- ACM Web Conference (WWW)-24
- Annual Meeting of the Association for Computational Linguistics (ACL)-24
- ACM International Multimedia Conference (MM)-23/24
- ACM Conference on Recommender Systems (RecSys)-23/24
- International Conference on Web Search and Data Mining (WSDM)-24
- International Conference on Information and Knowledge Management (CIKM)-23/24
- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD)-24
- SIAM International Conference on Data Mining (SDM)-24
- International Conference on Artificial Intelligence and Statistics (AISTATS)-24
- IEEE International Conference on Big Data (BigData)-24
- International Conference on Neural Information Processing (ICONIP)-21/22
- ACM/SIGAPP Symposium on Applied Computing (SAC)-21/22