

Xovee Xu

School of Computer Science and Engineering
University of Electronic Science and Technology of China (UESTC)
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Education

Ph.D. Candidate, Computer Science, UESTC, Chengdu, China	(expc.) 2025
M.S., Software Engineering, UESTC, Chengdu, China	2021
B.S., Software Engineering, UESTC, Chengdu, China	2018

Academic Employment

Research Assistant, School of Info. & Soft. Eng., UESTC, Chengdu, China	2018–present
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Affiliation

Intelligent Computing and Data Mining Lab, UESTC, Chengdu, China
Center for Future Media, UESTC, Chengdu, China
Kash Institute of Electronics and Information Industry, Kashgar, Xinjiang, China

Distinction

Tencent Scholarship	2023
Excellent Master Thesis of UESTC	2021

Area of Interest

Social network analysis & web mining
Multimodal & spatial-temporal data learning
Human-centered data mining & human-computer interaction

Academic Service

Conference Program Committee Member

ACM CIKM	2023, 2024
ACM KDD	2023, 2024
IEEE ICASSP	2024

IEEE ICME 2024
SIAM SDM 2024

Reviewing for (selected)	Times
ACM SIGKDD Conference on Knowledge Discovery and Data Mining	×11
Applied Intelligence	×7
Expert Systems With Applications	×7
IEEE International Conference on Multimedia and Expo (ICME)	×7
IEEE International Conference on Data Engineering (ICDE)	×6
IEEE Transactions on Neural Networks and Learning Systems (TNNLS)	×5
ACM International Conference on Information and Knowledge Management (CIKM)	×4
ACM International Conference on Multimedia	×4
IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)	×4
IEEE Transactions on Knowledge and Data Engineering (TKDE)	×4
IEEE Internet of Things Journal	×3
IEEE Transactions on Big Data	×3
SIAM International Conference on Data Mining	×3
AAAI Conference on Artificial Intelligence	×2
ACM Transactions on Web	×2
Annual Conference on Neural Information Processing Systems (NeurIPS)	×2
International Journal of Intelligent Systems	×2
Knowledge and Information Systems	×2
Knowledge-Based Systems	×2
Neurocomputing	×2
Online Social Networks and Media	×2
The Web Conference	×2
ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (GIS)	×1
GeoInformatica	×1
IEEE Conference on Computer Vision and Pattern Recognition (CVPR)	×1
IEEE International Conference on Big Data	×1
IEEE/ACM Transactions on Networking	×1
INFORMS Journal on Computing	×1
International Conference on Learning Representations (ICLR)	×1
Pattern Recognition Letters	×1
The Journal of Supercomputing	×1

Volunteering

Review Committee Member for “Artifacts Available” Badges, The Web Conference, Singapore	2024
Student Volunteer, ACM MM, Chengdu, China	2021
Student Volunteer, SIGIR, Online Conference	2021

Student Volunteer, ICTIR, Online Conference

2021

Professional Membership

ACM: Association for Computing Machinery
Member (2020)

CCF: China Computer Federation
Student Member (2021)

IEEE: Institute of Electrical and Electronics Engineers
Graduate Student Member (2020)

Publication

Webpage: <https://www.xoveexu.com/pub>

Statistics: <https://www.xoveexu.com/stats>

* Corresponding Author , † Equal Contribution

Refereed Journal Articles

1. Xovee Xu, Ting Zhong, Haoyang Yu, Fan Zhou*, and Goce Trajcevski. 2024. Overcoming catastrophic forgetting in continual fine-grained urban flow inference. *ACM Transactions on Spatial Algorithms and Systems*, 2024. Accepted. Special Issue on Machine Learning and Location Data. <https://doi.org/10.1145/3660523>
2. Xin Liu, Yi He, Wenxin Tai, Xovee Xu, Fan Zhou, and Guangchun Luo. 2024. Exploring the chameleon effect of contextual dynamics in temporal knowledge graph for event prediction. *Tsinghua Science and Technology*, 2024. <https://doi.org/10.26599/TST.2024.9010067>
3. Zhenhui Li, Fan Zhou, Zhiyuan Wang, Xovee Xu*, Leyuan Liu, and Guangqiang Yin. 2024. Measuring and classifying IP usage scenarios: A continuous neural trees approach. *Scientific Reports*, vol. 14, article 5144, 10 pages, Mar 2024. <https://doi.org/10.1038/s41598-024-55750-x>
4. Xovee Xu†, Tangjiang Qian†, Zhe Xiao, Ni Zhang, Jin Wu, and Fan Zhou*. 2024. PGSL: A probabilistic graph diffusion model for source localization. *Expert Systems With Applications*, vol. 238, pp. 122028, Mar 15, 2024. <https://doi.org/10.1016/j.eswa.2023.122028>
5. Qiang Gao, Jinyu Hong, Xovee Xu, Ping Kuang, Fan Zhou*, and Goce Trajcevski. 2023. Predicting human mobility via self-supervised disentanglement learning. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, vol. 36, no. 5, pp. 2126–2141, May 2024. <https://doi.org/10.1109/tkde.2023.3317175>
6. Xovee Xu, Zhiyuan Wang, Qiang Gao, Ting Zhong, Bei Hui*, Fan Zhou, and Goce Trajcevski. 2023. Spatial-temporal contrasting for fine-grained urban flow inference. *IEEE Transactions on Big Data*, vol. 9, no. 6, pp. 1711–1725, Dec 2023. <https://doi.org/10.1109/tbdata.2023.3316471>
7. Xovee Xu, Ting Zhong, Fan Zhou*, Rongfan Li, Goce Trajcevski, and Qinggang Meng. 2023. Learning spatiotemporal manifold representation for probabilistic land deformation prediction. *IEEE Transactions on Cybernetics*, vol. 54, no. 1, pp. 572–585, Jan 2024. <https://doi.org/10.1109/tcyb.2023.3291049>
8. Xovee Xu†, Zhiyuan Wang†, Fan Zhou*, Ying Huang, Ting Zhong, and Goce Trajcevski. 2023. Dynamic Transformer ODEs for large-scale reservoir inflow forecasting. *Knowledge-Based Systems*, vol. 276, pp. 110737, Sept 2023. <https://doi.org/10.1016/j.knosys.2023.110737>

9. Chunjing Xiao[†], Xovee Xu[†], Yue Lei, Kunpeng Zhang, Siyuan Liu, and Fan Zhou*. 2023. Counterfactual graph learning for anomaly detection on attributed networks. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, vol. 35, no. 10, pp. 10540–10553, Oct 2023. <https://doi.org/10.1109/tkde.2023.3250523>
10. Liu Yu[†], Xovee Xu[†], Goce Trajcevski, and Fan Zhou*. 2022. Transformer-enhanced Hawkes process with decoupling training for information cascade prediction. *Knowledge-Based Systems*, vol. 255, pp. 109740, Nov 2022. <https://doi.org/10.1016/j.knosys.2022.109740>
11. Xovee Xu, Fan Zhou*, Kunpeng Zhang, and Siyuan Liu. 2022. CCGL: Contrastive cascade graph learning. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, vol. 35, no. 5, pp. 4539–4554, May 2023. <https://doi.org/10.1109/TKDE.2022.3151829>
12. Xovee Xu, Ting Zhong, Ce Li, Goce Trajcevski, and Fan Zhou*. 2022. Heterogeneous dynamical academic network for learning scientific impact propagation. *Knowledge-Based Systems*, vol. 238, pp. 107839, Feb 2022. <https://doi.org/10.1016/j.knosys.2021.107839>
13. Fan Zhou, Pengyu Wang, Xovee Xu*, Wenxin Tai, and Goce Trajcevski. 2021. Contrastive trajectory learning for tour recommendation. *ACM Transactions on Intelligent Systems and Technology (TIST)*, vol. 13, no. 1, article 4, 25 pages, Jan 2022. Special Issue on Intelligent Trajectory Data Analytics. <https://doi.org/10.1145/3462331>
14. Xovee Xu, Fan Zhou*, Kunpeng Zhang, Siyuan Liu, and Goce Trajcevski. 2021. CasFlow: Exploring hierarchical structures and propagation uncertainty for cascade prediction. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, vol. 35, no. 4, pp. 3484–3499, Apr 2023. <https://doi.org/10.1109/tkde.2021.3126475>
15. Fan Zhou, Xovee Xu*, Goce Trajcevski, Kunpeng Zhang. 2021. A survey of information cascade analysis: Models, predictions, and recent advances. *ACM Computing Surveys*, vol. 54, no. 2, article 27, 36 pages, Mar 2022. <https://doi.org/10.1145/3433000>

Refereed Conference Articles

16. Jiayang Gu[†], Xovee Xu[†], Yulu Tian, Yurun Hu, Jiadong Huang, Wenliang Zhong, Fan Zhou, and Lianli Gao*. 2024. RRE: A relevance relation extraction framework for cross-domain recommender system at Alipay. *IEEE International Conference on Multimedia and Expo (ICME)*, Niagra Falls, Canada, Jul 15–19, 2024. Accepted. Oral Presentation.
17. Xovee Xu[†], Jiayang Li[†], and Fan Zhou*. 2023. MDCC: A multimodal dynamic dataset for donation-based crowdfunding campaigns. *ACM International Conference on Information and Knowledge Management (CIKM)*, Birmingham, UK, Oct 21–25, 2023, pp. 5417–5421. Oral Presentation. <https://doi.org/10.1145/3583780.3615124>
18. Ce Li, Rongpei Hong, Xovee Xu*, Goce Trajcevski, and Fan Zhou. 2023. Simplifying temporal heterogeneous network for continuous-time link prediction. *ACM International Conference on Information and Knowledge Management (CIKM)*, Birmingham, UK, Oct 21–25, 2023, pp. 1288–1297. Oral Presentation. <https://doi.org/10.1145/3583780.3615059>
19. Xovee Xu, Yutao Wei, Pengyu Wang, Xucheng Luo*, Fan Zhou, and Goce Trajcevski. 2023. Diffusion probabilistic modeling for fine-grained traffic flow inference with relaxed structural constraint. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Rhodes Island, Greece, Jun 4–10, 2023. Oral Presentation. <https://doi.org/10.1109/icassp49357.2023.10096169>
20. Haoyang Yu[†], Xovee Xu[†], Ting Zhong*, and Fan Zhou*. 2023. Overcoming forgetting in fine-grained urban flow inference via adaptive knowledge replay. *AAAI Conference on Artificial Intelligence (AAAI)*, Washington DC, USA, Feb 7–14, 2023, pp. 5393–5401. Oral Presentation. <https://doi.org/10.1609/aaai.v37i4.25671>

21. Zhiyuan Wang, Xovee Xu, Goce Trajcevski, Weifeng Zhang, Ting Zhong, and Fan Zhou*. 2022. Learning latent seasonal-trend representations for time series forecasting. Annual Conference on Neural Information Processing Systems (NeurIPS), New Orleans, USA, Nov 28 – Dec 9, 2022, pp. 38775–38787. Oral Presentation. <https://dblp.org/rec/conf/nips/WangXZTZ022>
22. Yang Cao, Zhenzhen Dang, Feng Wu, Xovee Xu*, and Fan Zhou. 2022. Probabilistic electricity demand forecasting with Transformer-guided state space model. IEEE International Conference on Automation, Electronics and Electrical Engineering (AUTEEE), Shenyang, China, Nov 18–20, 2022, pp. 964–969. <https://doi.org/10.1109/auteee56487.2022.9994294>
23. Ting Zhong, Haoyang Yu, Rongfan Li, Xovee Xu*, Xucheng Luo, and Fan Zhou. 2022. Probabilistic fine-grained urban flow inference with normalizing flows. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Singapore & Online, May 23–27, 2022, pp. 3663–3667. <https://doi.org/10.1109/icassp43922.2022.9747900>
24. Zhiyuan Wang[†], Xovee Xu[†], Goce Trajcevski, Kunpeng Zhang, Ting Zhong, and Fan Zhou*. 2022. PrEF: Probabilistic electricity forecasting via copula-augmented state space model. AAAI Conference on Artificial Intelligence (AAAI), Vancouver, Canada, Feb 22 – Mar 1, 2022, pp. 12200–12207. <https://doi.org/10.1609/aaai.v36i11.21480>
25. Fan Zhou, Ce Li, Xovee Xu, Leyuan Liu*, and Goce Trajcevski. 2021. HGENA: A hyperbolic graph embedding approach for social network alignment. IEEE Global Communications Conference (GLOBECOM), Hybrid Conference (In-person/Virtual), Madrid, Spain, Dec 7–11, 2021, 6 pages. <https://doi.org/10.1109/globecom46510.2021.9685690>
26. Guanyu Wang, Ting Zhong, Xovee Xu, Kunpeng Zhang, Fan Zhou*, and Yong Wang. 2021. Vector-quantized autoencoder with copula for collaborative filtering. ACM International Conference on Information and Knowledge Management (CIKM), Virtual Event, Nov 1–5, 2021, pp. 3458–3462. <https://doi.org/10.1145/3459637.3482216>
27. Fan Zhou, Liu Yu, Xovee Xu*, and Goce Trajcevski. 2021. Decoupling representation and regressor for long-tailed information cascade prediction. International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR), Virtual Event, Jul 11–15, 2021, pp. 1875–1879. <https://doi.org/10.1145/3404835.3463104>
28. Fan Zhou, Xiuxiu Qi, Xovee Xu, Jiahao Wang*, Ting Zhong, and Goce Trajcevski. 2020. Meta-learned user preference for topic participation prediction. IEEE Global Communications Conference (GLOBECOM), Virtual Conference, Dec 7–11, 2020, 6 pages. <https://doi.org/10.1109/globecom42002.2020.9322197>
29. Fan Zhou, Zijing Wen, Ting Zhong*, Goce Trajcevski, Xovee Xu, and Leyuan Liu. 2020. Unsupervised user identity linkage via graph neural networks. IEEE Global Communications Conference (GLOBECOM), Virtual Conference, Dec 7–11, 2020, 6 pages. <https://doi.org/10.1109/globecom42002.2020.9322311>
30. Fan Zhou, Xin Jing, Xovee Xu, Ting Zhong, Goce Trajcevski, and Jin Wu*. 2020. Continual information cascade learning. IEEE Global Communications Conference (GLOBECOM), Virtual Conference, Dec 7–11, 2020, 6 pages. <https://doi.org/10.1109/globecom42002.2020.9322124>
31. Fan Zhou, Xovee Xu, Kunpeng Zhang, Goce Trajcevski, and Ting Zhong*. 2020. Variational information diffusion for probabilistic cascade prediction. IEEE International Conference on Computer Communications (INFOCOM), Virtual Conference, Jul 6–9, 2020, pp. 1618–1627. <https://doi.org/10.1109/INFOCOM41043.2020.9155349>
INFOCOM 2020 Student Conference Award

Posters & Abstracts

32. Jienan Zhang, Jie Liu, Zhangtao Cheng, Xovee Xu, Fang Liu*, Ting Zhong, and Kunpeng Zhang. 2024. THG-Former: Time-aware hypergraph learning for multimodal social media popularity prediction (Student abstract). AAAI Conference on Artificial Intelligence (AAAI), Vancouver, Canada, Feb 20–27, 2024, pp. 23705–23706. <https://doi.org/10.1609/aaai.v38i21.30534>
33. Wenxue Ye, Shichong Li, Zhangtao Cheng, Xovee Xu, Ting Zhong, Bei Hui*, and Fan Zhou. 2024. Decoupling user relationships guides information diffusion prediction (Student abstract). AAAI Conference on Artificial Intelligence (AAAI), Vancouver, Canada, Feb 20–27, 2024, pp. 23696–23698. <https://doi.org/10.1609/aaai.v38i21.30530>
34. Fan Zhou*, Man Fang, and Xovee Xu. 2023. Machine learning for electrolyte multi-parameter mapping (Forum speech abstract). The 6th Forum of Materials Genome Engineering, Hangzhou, China, Feb 16–18, 2023, 2 pages.
35. Tangjiang Qian[†], Xovee Xu[†], Zhe Xiao, Ting Zhong*, and Fan Zhou. 2023. A probabilistic graph diffusion model for source localization (Student abstract). AAAI Conference on Artificial Intelligence (AAAI), Washington DC, USA, Feb 7–14, 2023, pp. 16306–16307. <https://doi.org/10.1609/aaai.v37i113.27013>
36. Zhangtao Cheng, Xovee Xu, Ting Zhong[†], Fan Zhou, and Goce Trajcevski. 2023. CasODE: Modeling irregular information cascade via neural ordinary differential equations (Student abstract). AAAI Conference on Artificial Intelligence (AAAI), Washington DC, USA, Feb 7–14, 2023, pp. 16192–16193. <https://doi.org/10.1609/aaai.v37i113.26956>
37. Liu Yu, Xovee Xu, Ting Zhong, Goce Trajcevski, and Fan Zhou*. 2022. Linking Transformer to Hawkes process for information cascade prediction (Student abstract). AAAI Conference on Artificial Intelligence (AAAI), Vancouver, Canada, Feb 22 – Mar 1, 2022, pp. 13103–13104. <https://doi.org/10.1609/aaai.v36i111.21688>
38. Haoyang Yu, Xovee Xu, Ting Zhong, and Fan Zhou*. 2022. Fine-grained urban flow inference via normalizing flows (Student abstract). AAAI Conference on Artificial Intelligence (AAAI), Vancouver, Canada, Feb 22 – Mar 1, 2022, pp. 13101–13102. <https://doi.org/10.1609/aaai.v36i111.21687>
39. Guanyu Wang, Xovee Xu, Ting Zhong*, and Fan Zhou. 2022. Conditional collaborative filtering process for top-k recommender system (Student abstract). AAAI Conference on Artificial Intelligence (AAAI), Vancouver, Canada, Feb 22 – Mar 1, 2022, pp. 13073–13074. <https://doi.org/10.1609/aaai.v36i111.21673>

Pre-print

40. Fan Zhou, Xovee Xu, Ce Li, Goce Trajcevski, Ting Zhong, and Kunpeng Zhang. 2020. A heterogeneous dynamical graph neural networks approach to quantify scientific impact. arXiv:2003.12042, Mar 2020, 8 pages. <https://doi.org/10.48550/arXiv.2003.12042>

Thesis

1. Xovee Xu. 2021. A research of information diffusion models and popularity prediction using graph neural networks (in Chinese). Master's Thesis. School of Information and Software Engineering, University of Electronic Science and Technology of China (UESTC), Chengdu, Sichuan, China, Jun 2021, 93 pages. Advisor: Ting Zhong. Committee chair: Jingye Cai. <https://doi.org/10.27005/d.cnki.gdzku.2021.001672>
Excellent Master Thesis of UESTC (105/4929)
2. Xovee Xu. 2018. Testing methods for large-scale insurance payment systems (in Chinese). Bachelor's Thesis. School of Information and Software Engineering, University of Electronic Science and Technology of China (UESTC), Chengdu, Sichuan, China, Jun 2018, 54 pages. Advisors: Xiaoqing Hao and Jie Gao.

Patent

1. Fan Zhou, Zhangtao Cheng, Zhe Xiao, Xovee Xu, and Ting Zhong. 2022. Information cascade popularity prediction method and system based on probability diffusion.
China Invention Patent, No. CN116308854A, Filed Dec 9, 2022.
2. Fan Zhou, Zhangtao Cheng, Zhe Xiao, Xovee Xu, and Ting Zhong. 2022. Information diffusion prediction system and method based on meta-knowledge learning.
China Invention Patent, No. CN115936120A, Filed Dec 8, 2022.
3. Fan Zhou, Liu Yu, Ting Zhong, Xovee Xu, and Ping Kuang. 2022. Information cascade prediction system and method based on Transformer-enhanced Hawkes process.
China Invention Patent, No. CN115409155A, Filed Aug 17, 2022.
4. Fan Zhou, Chengtai Cao, Ting Zhong, and Xovee Xu. 2021. Meta-learner based training data generation method and causal effect heterogeneous reaction difference estimation method.
China Invention Patent, No. CN113095440A, Filed Apr 30, 2021, Issued May 17, 2022.

Conference Presentation

32 nd ACM International Conference on Information and Knowledge Management, Birmingham, UK	2023
48 th IEEE International Conference on Acoustics, Speech, and Signal Processing, Rhodes Island, Greece	2023
39 th IEEE International Conference on Computer Communications, Virtual Conference	2020

Competition

Weibo Diffusion Popularity Prediction Track, AI Algorithm Competition	2021
Honorable Mention. Group member: Xovee Xu, Ce Li, and Zhiyuan Wang	
Organizer: People's Daily Online, State Key Laboratory of Communication Content Cognition	

Dataset

MDCC: A Multimodal Dynamic Dataset for Donation-based Crowdfunding Campaigns https://github.com/Jiayang-L1/mdcc	2023
DiDi-Xi'an Dataset for Fine-Grained Urban Flow Inference https://github.com/PattonYu/fufi-didi-xian	2022

Demo & Resource

	https://www.xoveexu.com/project	
CANV: Co-Authorship Network Visualization, https://github.com/Xovee/canv		2021
LaTeX Template of Curriculum Vitae, https://github.com/Xovee/latex-cv		2021
UESTC Course Materials, https://github.com/Xovee/uestc-course		2019

Distinction (Longer List)

Student Award & Scholarship

Name	Criterion	Issuer	Year
Tencent Scholarship - Special Prize, ¥15K	1 st of 1/150	Tencent	2023
Graduate Academic Scholarship - First Prize (Doctoral), ¥18K	1 st of 5/55	UESTC	2023
Wuliangye Innovation Scholarship, ¥20K	1 st of 1/130	Wuliangye	2022
Graduate Academic Scholarship - First Prize (Doctoral), ¥18K	2 nd of 5/55	UESTC	2022
Academic Rising Star, ¥3K	5%	UESTC	2022
Excellent Graduate Student (PhD Program)	-	UESTC	2022
AAAI-22 Scholarship (Free regist.)	-	AAAI	2022
PhD Entrance Scholarship, ¥10K	-	UESTC	2021
Excellent Master Thesis	105 out of 4929	UESTC	2021
Excellet Graduate Student (Master Program)	-	UESTC	2020
Graduate Academic Scholarship - First Prize (Master's), ¥10K	11 th of 36/135	UESTC	2020
INFOCOM 2020 Student Conference Award	-	IEEE ComSoc	2020

Teaching Experience

C Programming Language	Spring 2020
Teaching Assistant, with Prof. Ting Zhong, at UESTC	
Software Project Management	Summer 2019
Teaching Assistant, with Prof. Gianmario Motta (University of Pavia), at UESTC	

Industrial Experience

Kash Institute of Electronics and Information Industry , Kashi, Xinjiang, China	Jul - Aug 2023
Research Intern, on designing crowdfunding simulation algorithms	
Ant Group , Hangzhou, Zhejiang, China	Dec 2022 - Jan 2023
Algorithm Engineer Intern, on building large-scale service-content knowledge graph	
Nickname: 程璐	
PICC Property & Casualty Co. Ltd. , Chengdu, Sichuan, China	Feb - May, 2018
Software Test Engineer Intern, on large-scale insurance payment systems	
Chengdu Gluxen Tech. Co. Ltd. , Chengdu, Sichuan, China	Feb - Jul, 2017
Web Developer Intern, on designing webpages	

Erdős Number for Fun

Paul Erdős $\xrightarrow{1}$ János Pach $\xrightarrow{2}$ Hervé Brönnimann $\xrightarrow{3}$ Goce Trajcevski $\xrightarrow{4}$ Xovee Xu

Language

Native Chinese (Mandarin & Northern Shaanxi Dialect)

Fluent English