JIAHAO JI

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RESEARCH INTEREST

My research interests include spatio-temporal data mining, interpretable machine learning and urban computing. In particular, I have passion in designing (1) interpretable and robust algorithms for mining spatio-temporal data and graph data and (2) models for learning from these data types for various applications such as transportation, hazardous chemicals, epidemic, etc.

EDUCATION

Beihang University — Beijing, China
Ph.D. student in Technology of Computer Application, GPA: 3.8/4.0 — *Sep. 2019 - June 2024*
Core Courses: Data Science Foundations, Machine Learning, Principles of Artificial Intelligence

Beihang University — Beijing, China
Bachelor of Computer Science and Technology, GPA: 3.7/4.0 — *Sep. 2015 - June 2019*
Core Courses: Introduction of Data Mining, Principles of Compilers, Operating System

RESEARCH EXPERIENCE

BIGSCity Lab, Beihang University — Beijing, China
Research Assistant — *Seq. 2019 - June 2024*
Supervisor: **Prof. Jingyuan Wang**; Research: Urban Computing, Data Mining, Interpretability

DMAL Lab, Nanyang Technological University — Singapore
Visiting Ph.D. Student — *Feb. 2023 - Jan. 2024*
Supervisor: **Prof. Cheng Long**; Research: Physics-Guided Spatio-Temporal Prediction

JD Intelligent Cities Research — Beijing, China
Research Internship — *Mar. 2021 - Jan. 2023*
Supervisor: **Dr. Yu Zheng** and **Junbo Zhang**, Research: Trajectory Mining, Flow Prediction

HONORS & AWARDS

Chinese Government Scholarship: 2022
CETC The 14TH Research Institute Glarun Scholarship: 2022, 2020
Scholarships for Postgraduate Studies: the First Prize, 2022, 2021, 2020, 2019
Huawei Scholarship: 2021
CASC Scholarship: 2020
Outstanding Freshman Scholarship: 2019
National Encouragement Scholarship: 2018, 2017, 2016
MIIT Innovation and Entrepreneurship Scholarship: 2019
ASC18 - ASC Student Supercomputer Challenge: the First Prize, 2018
COMAP's Mathematical Contest in Modeling: Meritorious Winner, 2018

PUBLICATIONS

1. **J. Ji**, J. Wang, C. Huang, J. Wu, B. Xu, Z. Wu, J. Zhang and Y. Zheng, "Spatio-temporal self-supervised learning for traffic flow prediction," in *Thirty-seventh AAAI Conference on Artificial Intelligence (**AAAI'23**)*, 2023. **(CCF A)**

2. J. Wang, **J. Ji**, Z. Jiang, and L. Sun, "Traffic flow prediction based on spatiotemporal potential energy fields," *IEEE Transactions on Knowledge and Data Engineering (**TKDE**)*, 2022. **(CCF A, IF=9.235)**

3. **J. Ji**, J. Wang, J. Wu, B. Han, J. Zhang, and Y. Zheng, "Precision CityShield against hazardous chemicals threats via location mining and self-supervised learning," in *Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD'22**)*, 2022, pp. 3072-3080. **(CCF A)**

4. **J. Ji**, J. Wang, Z. Jiang, Jiawei Jiang, Hu Zhanng, "STDEN: Towards physics-guided neural networks for traffic flow prediction," in *Thirty-Sixth AAAI Conference on Artificial Intelligence (**AAAI'22**)*, vol. 36, no. 4, pp. 4048-4056, 2022. **(CCF A, acceptance rate=15%)**

5. **J. Ji**, J. Wang, Z. Jiang, J. Ma, and H. Zhang, "Interpretable spatiotemporal deep learning model for traffic flow prediction based on potential energy fields," in *IEEE International Conference on Data Mining (**ICDM'20**)*, 2020, pp. 1076-1081. **(CCF B, acceptance rate=9.9%)**

6. J. Wang, H. Shi, **J. Ji**, X. Lin, H. Tian, "High-Resolution Data on Human Behavior for Effective COVID-19 Policy-Making — Wuhan City, Hubei Province, China, January 1–February 29, 2020," in *China CDC Weekly*, 2023.

7. Z. Wu, L. Wu, S. Song, **J. Ji**, B. Zou, Z. Li, and X. He, "DialCSP: A two-stage attention-based model for customer satisfaction prediction in e-commerce customer service," in *Joint European Conference on Machine Learning and Knowledge Discovery in Databases (**ECML PKDD'22**)*, 2022. **(CCF B)**

8. Z. Wu, X. Yu, M. Chen, L. Wu, **J. Ji**, and Z. Li, "Enhancing New Intent Discovery via Robust Neighbor-based Contrastive Learning," *The 24th INTERSPEECH Conference (**Interspeech'23**)*, 2023. **(CCF C)**