

Haomin Wen

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Research Interests

Data Mining; Applied Machine Learning; Spatiotemporal Data Forecasting; Graph Neural Networks

Education

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| Now Sep 2019 | Beijing Jiaotong University Ph.D. student in Computer Science (CS), Beijing Key Lab of Traffic Data Analysis and Mining | Beijing, China |
| June 2019 Sep 2015 | Beijing Jiaotong University Bachelor of Computer Science (GPA: 91/100, Rank: 12/320) | Beijing, China |

Publications

- [1] **Package Pick-up Route Prediction via Modeling Couriers' Spatial-Temporal Behaviors**
Haomin Wen, Youfang Lin, Fan Wu, Huaiyu Wan, Shengnan Guo, Lixia Wu, Chao Song, Yinghui Xu
IEEE International Conference on Data Engineering (Published) [ICDE'21]
- [2] **DeepRoute+: Modeling Couriers' Spatial-Temporal Behaviors and Decision Preferences for Package Pick-up Route Prediction**
Haomin Wen, Youfang Lin, Fan Wu, Huaiyu Wan, Shengnan Guo, Lixia Wu, Chao Song, Yinghui Xu
ACM Transactions on Intelligent Systems and Technology (Published) [TIST]
- [3] **Context-aware Distance Measures for Dynamic Networks**
Yiji Zhao, Youfang Lin, Zhihao Wu, Yang Wang and Haomin Wen
ACM Transactions on the Web (Published) [TWEB]
- [4] **Enough Waiting for Couriers — Learning to Estimate Package Pick-up Arrival Time from Couriers' Spatial-Temporal Behaviors**
Haomin Wen, Youfang Lin, Fan Wu, Huaiyu Wan, Lixia Wu, etc.
ACM Transactions on Intelligent Systems and Technology (In Submission, Major revision) [TIST]
- [5] **Modeling Spatial-Temporal Constraints and Spatial-Transfer Patterns for Couriers' Package Pick-up Route Prediction**
Haomin Wen, Youfang Lin, Huaiyu Wan, Lixia Wu, Haoyuan Hu, etc.
IEEE Transactions on Intelligent Transportation Systems (In Submission, Major revision) [TITS]
- [6] **Traffic Inflow and Outflow Forecasting by Modeling Intra- and Inter-Relationship between Flows**
Yiji Zhao, Youfang Lin, Yongkai Zhang, Haomin Wen, Yunxiao Liu, etc.
IEEE Transactions on Intelligent Transportation Systems (Published) [TITS]
- [7] **Spatial-Temporal Position-aware Graph Convolutional Networks for Traffic Network Flows Forecasting**
Yiji Zhao, Youfang Lin, Haomin Wen, etc.
IEEE Transactions on Intelligent Transportation Systems (In Submission, Major revision) [TITS]
- [8] **Graph2Route: A Dynamic Spatial-Temporal Graph Neural Network for Pick-up and Delivery Route Prediction**
Haomin Wen, Youfang Lin, Xiaowei Mao, Fan Wu, Yiji Zhao, Haochen Wang, Lixia Wu, Haoyuan Hu, Huaiyu Wan
KDD '22: ACM SIGKDD Conference on Knowledge Discovery and Data Mining(Accepted) [KDD'22]
- [9] **Modeling Spatial-Temporal Correlations and Uncertainty for Dynamic Wind Power Forecasting via PaddlePaddle**
Yiji Zhao, Haomin Wen, Junhong Lou, Jinji Fu, Jianbin Zheng and Youfang Lin
KDD '22: ACM SIGKDD Conference on Knowledge Discovery and Data Mining, Workshop (Accepted) [KDD Workshop'22]

Competition

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| First Prize of ACM KDD Cup, 2022 | Team Member | World Ranking: 5/2490 (regular track), 3/2490 (PaddlePaddle track) |
| First Prize of ACM 29th SIGSPATIAL Cup, 2021. | Team Adviser | World Ranking: 5/128 |
| First Prize of 2nd IKCEST International Big Data Competition, 2020. | Team Member | World Ranking: 48/3023 |
| Grand Prize of 4th "Changfeng Cup" Big Data Analysis and Mining, 2020. | Team Adviser | National Ranking: 1/662 |
| First Prize of 1st IKCEST International Big Data Competition, 2019. | Team Member | World Ranking: 2/2312 |
| Meritorious Winner of Mathematical Contest in Modeling, 2018. | Team Leader | World Ranking: Top 10% |

Honors and Awards

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| First Prize Scholarship of Beijing Jiaotong University, 2021. | Top 5% |
| First Prize Scholarship of Beijing Jiaotong University, 2020. | Top 5% |
| National Scholarship, China, 2019. | Top %1 |

Academic & Patent Experience

Research Intern Experience

- > **AI Lab @ Alibaba Cainiao Network (June 2021 - Now):** Designed and trained a two-stage deep model to improve the accuracy of the Estimated Time of courier's Arrival (ETA) prediction and the customer experience.
- > **AI Lab @ Alibaba Cainiao Network (June 2020 - Aug 2021):** Proposed and deployed a new deep model equipped with Transformer encoder and Pointer decoder to predict couriers' future pick-up routes. (Achieves 73% in Hit-Rate@3)

Research Fund Experience

- > Fundamental Research Funds for Central Universities (*Successfully Application, Rank: Top 1%*).
- > CCF-Alibaba Innovative Research Funds (*Successfully Application*)

Patent Experience

- > As the second inventor of patent "A Method for Predicting Couriers' Pickup Order Based on Deep Learning".

Academic Activities

- > Attend the Alibaba Supply chain and operational research optimization conference (poster).
- > Attended the KDD Summer School in China & KDD2021 Pre-Conference (Jul 2021).
- > Invited to make a presentation as author in 37th IEEE International Conference on Data Engineering (Apr 2021).
- > Invited to give a [talk](#) "Intelligent Practice of Terminal Logistics Network" in [Swarma Club](#) (Jan 2021).
- > Attended the CCF Conference on Artificial Intelligence (CCFAI) (Aug 2019).

Academic Services

- > Sub-Reviewer: TITS, TIST.
- > Volunteer: WSDM'19, WWW'20, AAAI'20, KDD'20, KDD'21, TKDE, TIST, TITS.

Teaching Experience

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| Deep Learning, Teaching Assistant, BJTU | Fall 2021 |
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| Machine Learning, Teaching Assistant, BJTU | Fall 2021 |
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Research Guidance, College Students' Innovation Project, BJTU

- > Team Member: Zhongxiang Sun, Hongyu Liu, Chuang Zhao. Province-level (Top 20%), 2020-2021.
- > Team Member: Xinyi Zhang, Mingxuan Xia, Yuxuan Hu. Province-level (Top 20%), 2020-2021.
- > Team Member: Haochen Wang, Hao Hao, Bocheng Zhang. Province-level (Top 20%), 2020-2021.
- > Team Member: Wanen Gao, Yuxin Zheng, Zhilong Xu. National-level (Top 10%), 2021-2022.

Professional Skills

Programming | **Python, C, C++, SQL, Shell**

Tools&Packages | **Pytorch, Linux, Latex, Git, Docker**