

ZHAO, ZHAN

CONTACT INFORMATION	Rm 809, 8/F, Knowles Building The University of Hong Kong Pokfulam Road, Hong Kong	Tel: (852) 3917 6171 Mobile: (852) 9512 0322 Email: zhanzhao@hku.hk
RESEARCH INTERESTS	<ul style="list-style-type: none">• Human Mobility and Travel Behavior• Public Transit and Shared Mobility on Demand Systems• Network Science and Graph Machine Learning• Urban Computing and Spatiotemporal Data Mining	
WORKING EXPERIENCE	The University of Hong Kong , Hong Kong, China Assistant Professor Department of Urban Planning & Design Faculty of Architecture	2020-Present
	Via Transportation, Inc. , New York, NY, USA Senior Data Scientist	2018-2020
EDUCATION	Massachusetts Institute of Technology , Cambridge, MA, USA Ph.D. in Transportation	2018
	University of British Columbia , Vancouver, BC, Canada M.S. in Civil Engineering	2013
	Tongji University , Shanghai, China B.E. in Transportation Engineering	2011
JOURNAL PUBLICATIONS	(* refers to the corresponding author) <ul style="list-style-type: none">• Liang, Y., Zhao, Z.*, and Zhang, X. (2022). Modeling taxi cruising time based on multi-source data: A case study in Shanghai. <i>Transportation</i>, accepted in October 2022.• Zhao, Z.*, Koutsopoulos, H. N., and Zhao, J. (2022). Identifying hidden visits from sparse call detail record data. <i>Transactions in Urban Data, Science, and Technology</i>, 1(3-4), 121-141.• Liang, Y., Zhao, Z.*, and Sun, L. (2022). Memory-augmented dynamic graph convolution networks for traffic data imputation with diverse missing patterns. <i>Transportation Research Part C: Emerging Technologies</i>, 143, 103826.• Liang, Y., Huang, G., and Zhao, Z.* (2022). Joint demand prediction for multi-modal systems: A multi-task multi-relational spatiotemporal graph neural network approach. <i>Transportation Research Part C: Emerging Technologies</i>, 140, 103731.• Bi, W., Lu, W.*, Zhao, Z., and Webster, C. (2022). Combinatorial optimization of construction waste collection and transportation: A case study of Hong Kong. <i>Resources, Conservation & Recycling</i>, 179, 106043.• Li, J., and Zhao, Z.* (2022). Impact of COVID-19 travel-restriction policies on road traffic accident patterns with emphasis on cyclists: A case study of New York City. <i>Accident Analysis & Prevention</i>, 167, 106586.• Liang, Y., and Zhao, Z.* (2021). NetTraj: A network-based vehicle trajectory prediction model with directional representation and spatiotemporal attention mechanisms. <i>IEEE Transactions on Intelligent Transportation Systems</i>.	

- Mo, B., **Zhao, Z.***, Koutsopoulos, H. N., and Zhao, J. (2021). Individual mobility prediction in mass transit systems using smart card data: An interpretable activity-based hidden Markov approach. *IEEE Transactions on Intelligent Transportation Systems*.
- **Zhao, Z.***, Koutsopoulos, H. N., and Zhao, J. (2020). Discovering latent activity patterns from transit smart card data: A spatiotemporal topic model. *Transportation Research Part C: Emerging Technologies*, 116, 102627.
- **Zhao, Z.**, and Zhao, J*. (2020). Car pride and its behavioral implication: An exploration in Shanghai. *Transportation*, 47(2), 793-810.
- **Zhao, Z.**, Koutsopoulos, H. N., and Zhao, J*. (2018). Detecting pattern changes in individual travel behavior: A Bayesian approach. *Transportation Research Part B: Methodological*, 112, 73-88.
- **Zhao, Z.**, Koutsopoulos, H. N., and Zhao, J*. (2018). Individual mobility prediction using transit smart card data. *Transportation Research Part C: Emerging Technologies*, 89, 19-34.
- Goulet-Langlois, G., Koutsopoulos, H. N., **Zhao, Z.**, and Zhao, J*. (2018). Measuring regularity of individual travel patterns. *IEEE Transactions on Intelligent Transportation Systems*, 19(5), 1583-1592.
- Zhao, J.*, Frumin, M., Wilson, N. H., and **Zhao, Z.** (2013). Unified estimator for excess journey time under heterogeneous passenger incidence behavior using smartcard data. *Transportation Research Part C: Emerging Technologies*, 34, 70-88.
- Frumin, M., Zhao, J.*, Wilson, N. H., and **Zhao, Z.** (2013). Automatic data for applied railway management: Case study on the London Overground. *Transportation Research Record: Journal of the Transportation Research Board*, 2353, 47-56.
- **Zhao, Z.**, Zhao, J.*, and Shen, Q. (2013). Has transportation demand of Shanghai, China, passed its peak growth? *Transportation Research Record: Journal of the Transportation Research Board*, 2394, 85-92.

CONFERENCE PAPERS

- Liang, Y., Huang, G., and **Zhao, Z.** (2022). Bike sharing demand prediction based on knowledge sharing across modes: A graph-based deep learning approach. *2022 IEEE 25th International Conference on Intelligent Transportation Systems (ITSC)*, 857-862.
- Liang, Y., and **Zhao, Z.** (2022). Unraveling spatial, temporal and behavioral factors affecting trip-level taxi cruising time using large-scale GPS trajectories. *Transportation Research Board 101st Annual Meeting*, Washington, DC.
- Li, J., and **Zhao, Z.** (2022). Impact of COVID-19 travel-restriction policies on road traffic accident patterns with emphasis on cyclists: A case study of New York City. *Transportation Research Board 101st Annual Meeting*, Washington, DC.
- **Zhao, Z.**, Koutsopoulos, H. N., and Zhao, J. (2018). Discovering latent activity patterns from human mobility. *The 7th ACM SIGKDD International Workshop on Urban Computing (UrbComp'18)*, London, UK.
- **Zhao, Z.**, Koutsopoulos, H. N., and Zhao, J. (2018). Detecting changes in individual travel behavior patterns. *Transportation Research Board 97th Annual Meeting*, Washington, DC.
- **Zhao, Z.**, Koutsopoulos, H. N., and Zhao, J. (2017). Mobility as a language: Predicting individual mobility in public transportation using n-gram models. *Transportation Research Board 96th Annual Meeting*, Washington, DC.
- **Zhao, Z.**, Zhao, J., and Koutsopoulos, H. N. (2016). Individual-level trip detection using sparse call detail record data based on supervised statistical learning. *Transportation Research Board 95th Annual Meeting*, Washington, DC.

	<ul style="list-style-type: none"> • Zhao, Z., and Zhao, J. (2015). Car pride: Psychological structure and behavioral implications. <i>Transportation Research Board 94th Annual Meeting</i>, Washington, DC. • Zhao, Z., Chua G., and Zhao, J. (2012). Evolution of trip chaining patterns in London from 1991 to 2010. <i>Innovations in Travel Modelling Conference</i>, Tampa, FL.
BOOK CHAPTERS	<ul style="list-style-type: none"> • Zhao, Z., Koutsopoulos, H. N., and Zhao, J. (2019). Uncovering Spatiotemporal Structures from Transit Smart Card Data for Individual Mobility Modeling. Book chapter for <i>Demand for Emerging Transportation Systems</i>, 123-149.
INVITED TALKS	<ul style="list-style-type: none"> • Urban transport networks and trajectory data mining. <i>Peking University-HKU Sustainable Development and Smart Cities in the Greater Bay Area</i>. November 2021. • Trajectory Data Mining for Smart Urban Mobility. <i>University of Michigan-Shanghai Jiaotong University Joint Institute</i>. June 2021. • Uncovering Behavior Dynamics in Human Mobility using Transit Smart Card Data. <i>Hong Kong Polytechnic University</i>. September 2020.
GRANTS	<ul style="list-style-type: none"> • PI. “Generalizable Deep Learning across Cities and Modes for Human Mobility Prediction”. <i>National Natural Science Foundation of China (NSFC) Young Scientists Fund</i> (NSFC 42201502). 01/2023-12/2025 (RMB 300,000) • PI. “Quantifying the Impact of Street Network Structure on Urban Congestion: A Multi-City Study”. <i>Seed Fund for Basic Research</i>. 2021-2024 (HK\$ 95,500) • PI. “A Simulation-based Analytical Framework for the Design of an Integrated Autonomous Vehicle and Public Transit System and Evaluation of its Impact on Urban Form”. <i>Seed Funding for Strategic Interdisciplinary Research Scheme</i>. 2021-2024 (HK\$ 995,160) • PI. “Urban Embedding: Learning Spatial Representation from Urban Mobility Flows”. <i>Seed Fund for Basic Research for New Staff</i>. 2020-2022 (HK\$ 138,780)
TEACHING EXPERIENCE	<p>The University of Hong Kong Lecturer</p> <ul style="list-style-type: none"> • <i>URBA6002 Urban Big Data Analytics</i>, Spring 2021-Present • <i>URBA6004 Spatial Mobilities Analytics</i>, Spring 2021-Present • <i>URBS2005 Research Methods in Urban Studies</i>, Fall 2021-Present • <i>GEOG7003 Transport Economics</i>, Spring 2022-Present • <i>URBA6402 Smart Planning and Design Studio</i>, Spring 2022-Present <p>Massachusetts Institute of Technology Teaching Assistant</p> <ul style="list-style-type: none"> • <i>11.478 Behavior and Policy</i>, Spring 2015 <p>University of British Columbia Teaching Assistant</p> <ul style="list-style-type: none"> • <i>CIVL 441 Transportation Planning and Analysis</i>, Spring 2013 • <i>CIVL 587 Urban Transportation Economics and Policy</i>, Fall 2012

HONORS AND AWARDS

- Second Prize (as Supervisor), 6th Chengyuan Cup - Planning Decision Support Model Design Contest, 2022
- Fellow, Meeting of Minds@HKU Forum for Outstanding Young Scholars, 2019
- Mitacs-Accelerate Internship Award, 2012
- Tongji University Outstanding Graduate Award, 2011
- Second Prize, Competition of Transport Science and Technology of Tongji University, 2010
- Scholarships for Excellent Academic Performance, 2008-2010

SERVICE

Editorial Board Member for

- Transactions in Urban Data, Science, and Technology, 2022-Present

Senior Program Management Team Member for

- HKU Master of Arts in Transport Policy and Planning (MATPP), 2022-Present
- HKU Master of Science in Urban Design and Transport (MScUDT), 2022-Present

Member/fellow for

- HKU Institute of Transport Studies, 2021-Present
- HKU Institute of Data Science, 2022-Present

Organizer/co-organizer for

- University of Glasgow-HKU Symposium on Urban Analytics, June 2021

Reviewer for

- Transportation Research Part C: Emerging Technologies
- Transportation Research Part B: Methodological
- Transportation Research Part A: Policy and Practice
- IEEE Transactions on Intelligent Transportation Systems
- Journal of Transport Geography
- Travel Behaviour and Society
- Sustainable Cities and Society
- PLOS ONE