

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">• Urban Computing and Spatiotemporal Data Mining• Human Mobility and Travel Behavior• Public Transit and Shared Mobility on Demand Systems• Network Science and Graph Machine Learning	
EDUCATION	<p>Massachusetts Institute of Technology, Cambridge, MA, USA Ph.D. Transportation, July 2018 Department of Civil and Environmental Engineering Thesis: <i>“Uncovering Individual Mobility Patterns from Transit Smart Card Data: Trip Prediction, Activity Inference, and Change Detection”</i> Committee: Jinhua Zhao, Haris Koutsopoulos, Nigel Wilson, Tamara Broderick</p> <p>University of British Columbia, Vancouver, BC, Canada M.S. Civil Engineering, August 2013 Department of Civil Engineering</p> <p>Tongji University, Shanghai, China B.E. Transportation Engineering, July 2011 College of Transportation Engineering</p>	
PROFESSIONAL EXPERIENCE	<p>The University of Hong Kong, Hong Kong, China Assistant Professor Department of Urban Planning & Design Faculty of Architecture</p> <p>Via Transportation, Inc., New York, NY, USA Senior Data Scientist</p> <p>SMART, Singapore, Singapore Visiting Researcher</p> <p>IBM Research, Dublin, Ireland Research Intern</p> <p>Transport for London, London, UK Research Intern</p> <p>Translink, Vancouver, BC, Canada Research Intern</p>	<p>07/2020-Present</p> <p>08/2018-06/2020</p> <p>06/2017-08/2017</p> <p>06/2016-09/2016</p> <p>06/2015-08/2015</p> <p>09/2012-11/2012</p>
JOURNAL PUBLICATIONS	<p>(* refers to the corresponding author)</p> <ul style="list-style-type: none">• 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. <i>IEEE Transactions on Intelligent Transportation Systems</i>.	

- **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
- **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.
 - **Zhao, Z.**, and Zhao, J. (2015). Car pride: Psychological structure and behavioral implications. *Transportation Research Board 94th Annual Meeting*, Washington, DC.
 - **Zhao, Z.**, Chua G., and Zhao, J. (2012). Evolution of trip chaining patterns in London from 1991 to 2010. *Innovations in Travel Modelling Conference*, Tampa, FL.
- BOOK CHAPTERS
- **Zhao, Z.**, Koutsopoulos, H. N., and Zhao, J. (2019). Uncovering Spatiotemporal Structures from Transit Smart Card Data for Individual Mobility Modeling. Book chapter for *Demand for Emerging Transportation Systems*, 123-149.
- UNDER REVIEW
- Liang, Y., Zhao, Z., and Sun, L. (2021). Dynamic Spatiotemporal Graph Convolutional Neural Networks for Traffic Data Imputation with Complex Missing Patterns. *Transportation Research Part C: Emerging Technologies*. Submitted in September, 2021.

	<ul style="list-style-type: none"> • 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>. Submitted in May, 2021. • Li, J., and Zhao, Z.* (2021). 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>. Submitted in September, 2021. • Bi, W., Lu, W.*, Zhao, Z., and Webster, C. (2021). Combinatorial optimization of construction waste collection and transportation: A case study of Hong Kong. <i>Resources, Conservation & Recycling</i>. Submitted in August, 2021.
INVITED TALKS	<ul style="list-style-type: none"> • 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. “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 <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	<ul style="list-style-type: none"> • 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

Member/fellow for

- HKU Insititue of Transport Studies, 2021-Present

Organizer/co-organizer for

- University of Glasgow-University of Hong Kong Symposium on Urban Analytics, June 2021

Reviewer for

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