

HONGCHAO LIU
Professor of Civil, Environmental and Construction Engineering
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Professional Preparation

B.S.E. in Civil Engineering, Hebei University of Technology, China, 1990
M.S.E. in Civil Engineering, Tsinghua University, China, 1996
Ph. D. in Civil Engineering (transportation), the University of Tokyo, Japan, 2000
Postdoctoral in Transportation Engineering, the University of California at Berkeley, 2003

Professional Chronology

Professor, Texas Tech University (2014-present)
Associate Professor, Texas Tech University (2009-2014)
Assistant Professor, Texas Tech University (2004-2019)
Assistant Research Engineer, the University of California at Berkeley (2003-2004)
Research Associate, the University of Tokyo (2000-2001)
Research Assistant, the University of Tokyo (1997-2000)
Transportation Engineer, Beijing Urban Planning and Design Institute (1996-1997)

Research Interests

Traffic operation and optimal control and management of highway systems
Data analytics and mathematic modeling of transportation systems
Multimodal transportation
Intelligent transportation systems
Traffic flow theory

Honors/Awards

George T. And Gladys Abell-Hanger Faculty Award, Whitacre College of Engineering (2015)
Whitacre Research Award, Whitacre College of Engineering (2012)
Huangshan Endowed Visiting Professor, Hefei University of Technology, China (2011)
Teacher of the Year, Department of Civil, Environmental and Construction Engineering, (2010)
Most Influential Professor, Whitacre College of Engineering Honors Convocation, (2009)
Hemphill-Wells New Professor Excellence in Teaching Award, Finalist of the Whitacre College of Engineering (2006)
Fellowship, American Society of Civil Engineers (ASCE) Excellence in Civil Engineering Education (ExCEED), (2006)
Featured Young Faculty in ENVISION 2(2), Newsletter of the Whitacre College of Engineering (2006)
Monbusho Japanese Government Scholarship, the University of Tokyo (1997-2000)

Synergistic Activities/Committee Membership

1. Developed and maintained an active research and education program in traffic engineering at the Department of Civil, Environmental and Construction Engineering
2. Supervised and mentored over 30 graduate students including nine PhD students and four postdoctoral researchers
3. Member of ASCE, ITE, IEEE, TRB, and engaged in a range of professional society activities as program committee member, conference organizer and paper reviewer

4. Served as editor-in-chief for one international journal and editorial board member of several other academic journals
5. Chair or member of university, college and departmental committees on faculty development leave, tenure and promotion, faculty search, award, and curriculum development

Recent Publications (Authors marked by * are my graduate students and postdoctoral researchers)

1. Wei, D. *, C. Yuan*, **H. Liu**, D. Wu*, and W. J. Kumfer* (2017). "The Impact of Service Refusal to the Supply-Demand Equilibrium in the Taxicab Market." *Networks and Spatial Economics*, **17**(1), 225-253.
2. Kumfer, W.J.*, **H. Liu**, D. Wu*, D. Wei*, and S. Sama* (2017). "Development of a Supplementary Driver Education Tool for Teenage Drivers on Rural Roads." *Safety Science*. Vol. 98, 136-144.
3. Wu, D. *, J. Zhao*, and **H. Liu** (2017). "The Assessment of Damage to Texas Highways Due to Oversize and Overweight Loads Considering Climatic Factors." Forthcoming in *International Journal of Pavement Engineering*. DOI: 10.1080/10298436.2017.1353392
4. Wu, D. *, W. Kumfer*, **H. Liu**, and C. Yuan* (2017). "A Life-cycle Optimization Model Using Semi-Markov Deterioration Process for Highway Bridge Maintenance." *Applied Mathematical Modeling*, Vol. 43, 45-60.
5. Yuan, C. *, D. Wu*, D. Wei*, and **H. Liu** (2017). "Modeling and Analyzing Taxi Congestion Premium in Congested Cities." Forthcoming in *Journal of Advanced Transportation*. DOI:10.1155/2017/2619810.
6. Wu, D. *, C. Yuan*, and **H. Liu** (2017). "A Risk-based Optimization for Pavement Preventative Maintenance with Probabilistic LCCA: A China Case." *International Journal of Pavement Engineering*, 18(1), 11-25.
7. Lin, W., **H. Liu**, and H.K. Lo (2016). "Editorial: Big Data for Driver, Vehicle, and System Control in ITS." *IEEE Transactions on Intelligent Transportation Systems*, **17**(6), 1663-1665.
8. Feng, Z, Y. Lei, **H. Liu**, W. J. Kumfer*, W. Zhang, K Wang, and S. Lu (2016). "Driving Anger in China: A Case Study on Professional Drivers." *Transportation Research, Part F*, Vol.42, 255-266.
9. Wei, D. *, W. Kumfer*, and **H. Liu** (2016). "Traffic Queuing at Unsignalized Crosswalks with Probabilistic Priority." Forthcoming in *Transportation Letters*. DOI: 10.1080/19427867.2016.1236069.
10. Pang, B. *, H. Xu*, and **H. Liu** (2016). "Calculating the Approach Capacity of Diverging Diamond Interchanges with Consideration of Internal Queue Spillback." *Transportation Research Record*, No. 2553. DOI:10.3141/2553-07.
11. Wei, D. *, Y. Qin, and **H. Liu** (2015). "Modeling Cascade Dynamics of Railway Network under Inclement Weather." *Transportation Research, Part E: Logistics and Review*, Vol.80, 95-122.
12. Wei, D. *, **H. Liu**, and Z. Tian (2015). "Vehicle Delay Estimation at Unsignalized Pedestrian Crosswalks with Probabilistic Yielding Behavior." *Transportmetrica A: Transport Science*. 11(2), 103-118.
13. Wei, D. *, H. Xu*, W. Kumfer*, **H. Liu**, and Z. Wang (2015). "Vehicular traffic capacity at unsignalized crosswalks with probabilistic yielding behavior." *Transportation Research Record* No. 2483, 80-90.
14. Kumfer, W.J. *, D. Wei*, and **H. Liu** (2015). "Investigating the Effects of Demographic and Driver Factors on Single-Vehicle and Multi-Vehicle Fatal Crashes Using Multinomial Logistic Regression." *Transportation Research Record*, No.2518, 37-45.
15. Xu, H. *, **H. Liu** and H. Gong* (2013). "Modeling the Asymmetry in Traffic Flow (a): Microscopic Approach." *Applied Mathematical Modeling*. Vol. 37, 9431-9440.
16. Wei, D. *, and **H. Liu** (2013). "Analysis of Asymmetric Driving Behavior Using a Self-learning Approach." *Transportation Research Part B: Methodological* **46**(1), 1-14.