

Xing Wu, Ph.D., P.E. (licensed in TX)  
 Cherry Engineering Building, RM C-2032, Lamar University, Beaumont, TX 77710  
 Work Phone: 409-880-8757; Fax: 409-880-8121  
 Email: [xing.wu@lamar.edu](mailto:xing.wu@lamar.edu)

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## EDUCATION

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**Northwestern University, Evanston, IL**  
**Ph.D. in Transportation Engineering** **June 2011**  
 Dissertation: "Routing and traffic assignment in stochastic networks"  
 Honors: Dissertation Year Fellowship of NU Transportation Center

**Carnegie Mellon University, Pittsburgh, PA**  
**M.S. in Civil Engineering** **May 2006**

**Tsinghua University, Beijing, China**  
**M.S. in Management Science and Engineering** **July 2005**  
 Thesis: "Environmental impact assessment of infrastructure systems and application"  
 Honors: Best master thesis of Tsinghua University (only one in each department)

**Tsinghua University, Beijing, China**  
**B.S in Civil Engineering** **July 2002**  
 Areas of Concentration: Construction Management

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## PROFESSIONAL APPOINTMENT

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**Associate Professor** **Aug. 2018 – present**  
*Department of Civil and Environmental Engineering, Lamar University*

**Assistant Professor** **Aug. 2012 – Aug. 2018**  
*Department of Civil and Environmental Engineering, Lamar University*

**Postdoctoral Fellow** **Sep. 2011 – May 2012**  
*Department of Civil and Environmental Engineering, Northwestern University*

**Visiting Scholar** **Oct. 2011 – Apr. 2012**  
*Oak Ridge National Laboratory*  
 Worked on Project "Data Analysis for Plug-In Electric Vehicle Studies" funded by the ORNL, as a key researcher.

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## HONORS & AWARDS

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| 11. Research "SWEET SIXTEEN" 2017*, American Association of State Highway and Transportation Officials (AASHTO) | 2017      |
| 10. ASCE ExCEED Fellowship, American Society of Civil Engineers (ASCE)  | 2017      |
| 9. University Merit Award, Lamar University   | 2017      |
| 8. Larry Lawson Faculty Fellowship, Lamar University  | 2017-2019 |
| 7. Presidential Faculty Fellowships for Undergraduate Research, Lamar University                                | 2014-2015 |
| 6. Postdoctoral Fellowship, Northwestern University   | 2011-2012 |
| 5. Dissertation Year Fellowship, Northwestern University  | 2010-2011 |
| 4. Walter P. Murphy Fellowship, Northwestern University   | 2006-2007 |

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| 3. Jidian Liang Fellowship, Carnegie Mellon University | 2005 |
| 2. Outstanding Master Graduate, Tsinghua University    | 2005 |
| 1. Outstanding Master Thesis, Tsinghua University      | 2005 |

\* For 2016 TxDOT-funded project "*Proactive Traffic Signal Timing and Coordination for Congestion Mitigation on Arterial Roads*", worked as PI.

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## RESEARCH PROJECT INVOLVEMENT

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17. High Frequency Radar for Texas Bays and Ports. **Co-PI** (with Dr. Liv Haselbach as PI of LU contract), subcontracted from the University of Texas El-Paso, funded by Texas General Land Office (GLO), \$90,850, October 1<sup>st</sup>, 2021 – March 31<sup>st</sup>, 2023.
16. Use Connected Vehicle (CV) Environments to Improve Resiliency of Transportation System in Severe Weathers. **Co-PI** (with Dr. Yueqing Li as PI), funded by the LU Center for Resilience, \$14,000, December 1<sup>st</sup>, 2021 – August 31<sup>st</sup>, 2022.
15. GIS and Satellite Radar InSAR for Flooding Risk Analysis to Pipelines in Southeast Texas. **PI**, funded by *LU Center for Midstream Management and Science* (Undergraduate Summer Research Program), \$9,750, June 1<sup>st</sup>, 2021 -- August 31<sup>st</sup>, 2021.
14. Southeast Texas Flood Coordinate Study. **Co-PI** (with Dr. Liv Haselbach as PI), funded by Lower Neches Valley Authority, \$100,000, June 1<sup>st</sup>, 2020 – August 31<sup>st</sup>, 2021.
13. Vessels' Arrival Time Estimates: an AIS Data Based Method and Application to the Houston Ship Channel. **PI**, \$10,000, funded by the *Center for Advances in Port Management of Lamar University*, April 1<sup>st</sup>, 2019 – August 31<sup>st</sup>, 2019.
12. A Decision Framework for Enhancing Waterway Utilization with Application to Houston Ship Channel. **Co-PI** (with Maryam Hamidi as PI), \$30,000, funded by the *Center for Advances in Port Management of Lamar University*, September 1<sup>st</sup>, 2018 – August 31<sup>st</sup>, 2019.
11. Wake Wash in Sabine-Neches Waterway, Phase II. **Co-PI** (with V. Zaloom as PI), \$99,734, funded by Sabine Neches Navigation District. October 1<sup>st</sup>, 2017 – January 31<sup>st</sup>, 2019.
10. Implementation of Proactive Traffic Signal Control System at Multiple Intersections at the Greater Houston Area. **PI**, \$157,794, funded by Texas Department of Transportation. April 1<sup>st</sup>, 2017 – December 31<sup>st</sup>, 2018.
9. Proactive Traffic Signal Timing and Coordination for Congestion Mitigation on Arterial Roads. **PI**, \$60,861, funded by Texas Department of Transportation. January 1<sup>st</sup>, 2016 – December 31<sup>st</sup>, 2016.
8. Wake Wash in Sabine-Neches Waterway Phase I. **Co-PI** (with V. Zaloom as PI), \$99,742, funded by Sabine Neches Navigation District. October 1<sup>st</sup>, 2015 – April 30<sup>th</sup>, 2017.
7. Analysis of Vessel Conflicts in In-land Waterways: An AIS Data based Approach and Application to Sabine-Neches Waterways. **PI**, \$10,012, funded by the Center for Advances in Port Management of Lamar University, March 1<sup>st</sup>, 2016 – May 30<sup>th</sup>, 2017.
6. Analysis of Utility Factor of Plug-in Hybrid Vehicles Using Longitudinal GPS Data with Spatial Information. **PI**, \$25,086, *subcontracted from Oak Ridge National Laboratory*, funded by the US Department of Energy, May 2014 – December 2015.
5. Risk Analysis and Mitigation Solutions of Vessel Accidents in the Sabine-Neches Waterways. **PI**, \$10,089, funded by the *Presidential Faculty Fellowships for Undergraduate Research of Lamar University*, September 2014 – May 2015
4. Finding Optimal Mean-Risk Routes in Large Time Dependent Stochastic Networks. **PI**, \$5,000, funded by the *Research Enhancement Grants (REG) of Lamar University*, September 2014 – August 2015.
3. Assessing Energy Use and Charging Facility Investment for Plug-in Hybrid Electric Vehicles based on Longitudinal Travel Data. **PI**, \$5,000, funded by the *Research Enhancement Grants (REG) of Lamar University*, September 2013 – August 2014.

2. Quantitative Risk Analysis of Vessel Accidents in Southeast Texas Waterways. **PI**, \$5,000, funded by the Texas A&M Transportation Institute, March 2013 – August 2013.
1. Projecting Plug-in Vehicle Demand and Impact with Detailed Market Segmentation. **Postdoctoral Researcher**, funded by Vehicles Technologies Program of the U.S. Department of Energy, 2011-2012.

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## REFERRED PUBLICATIONS

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**In Journals ONLY** (\* = corresponding author)

40. Li, Y., Li, Y., **Wu, X.**, and Craig, B. "Investigation of contributing factors to traffic crashes severity in Southeast Texas using multiple correspondence analysis", *The Australasian College of Road Safety Journal and Conference*, under the 2<sup>nd</sup>-round review.
  39. Haselbach, L., Adesina M., Muppavarapu, N., and **Wu, X.** (2022) "Spatially estimating flooding depths from damage reports", *Water Science and Engineering*, under review.
  38. Qian, Q, Su, L. Zaloom, V., Jao, M., **Wu, X.**, and Wang, K. (2022) "Bank erosion due to wake wash at the Sabine Neches Waterway - a case study", *Ocean Engineering*, under the 2<sup>nd</sup>-round review.
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37. Zohoori, S., Roy, U., Hamidi, M., **Wu, X.** (2022) "Quantifying wide-body vessels navigation delay in narrow waterways: a case study at Houston Ship Channel", *Journal of Waterway, Port, Coastal, and Ocean Engineering*, accepted.
  36. Kabir, M., Kang, M., **Wu, X.\***, and Hamidi, M. (2022) "Study on U-turn behavior of vessels in narrow waterways based on AIS data", *Ocean Engineering*, vol. 246, 110608. [doi:10.1016/j.oceaneng.2022.110608](https://doi.org/10.1016/j.oceaneng.2022.110608).
  35. Kang, M., Zohoori, S., Hamidi, M., and **Wu, X.** (2021) "Study of narrow waterways congestion based on automatic identification system (AIS) data". *Journal of Ocean Engineering and Science*, [doi:10.1016/j.joes.2021.10.010](https://doi.org/10.1016/j.joes.2021.10.010).
  34. Abbasi, E., Li, Y., **Wu, X.**, and Craig, B. (2021) "Using classification and regression trees (CART) to identify factors contributing to vehicle crash severity in a port city. *International Journal of Transportation Systems*, Vol.6, pp. 29-38. [link](#)
  33. **Wu, X\***, Adhikari, B., Chiu, S., Sajjadi, S., Yang, H. and Roy, U. (2021) "Volume-occupancy-based actuated signal control system: design and implementation to diamond interchanges in Houston", *International Journal of Civil Engineering*, [doi: 10.1007/s40999-021-00666-0](https://doi.org/10.1007/s40999-021-00666-0).
  32. **Wu, X.\***, Roy, U., Hamidi, M., and Craig, B. (2020) "Estimate travel time of ships in narrow channel based on AIS data", *Ocean Engineering*, Vol. 202, pp. 106790. [doi: 10.1016/j.oceaneng.2019.106790](https://doi.org/10.1016/j.oceaneng.2019.106790).
  31. **Wu, X.\***, Yang, H., Mainali, B., Pokharel, P., Chiu, S. (2020) "Development of platoon-based actuated signal control systems to coordinated intersections: application in corridors in Houston", *IET Intelligent Transport Systems*, Vol. 14, pp. 127-137. [doi: 10.1049/iet-its.2019.0289](https://doi.org/10.1049/iet-its.2019.0289).
  30. Dong, J., **Wu, X.**, Liu, C. and Lin, Z. (2020) "The impact of reliable range estimation on battery electric vehicle feasibility", *International Journal of Sustainable Transportation*, Vol.14, pp. 833-842. [doi: 10.1080/15568318.2019.1639085](https://doi.org/10.1080/15568318.2019.1639085).
  29. Chen, Z., Hu, Y. and **Wu, X.** (2020) "Optimal deployment of electric bicycle sharing stations: model formulation and solution technique", *Network and Spatial Economics*, Vol. 20, pp.99-136. [doi: 10.1007/s11067-019-09469-2](https://doi.org/10.1007/s11067-019-09469-2).
  28. Roy, U. and **Wu, X.\***(2019) "AIS-data based vessel traffic's characteristics and travel behavior analysis: a case study at Houston Ship Channel", *Journal of Ocean Technology*, Vol. 14, pp. 58-74. [https://www.thejot.net/article-preview/?show\\_article\\_preview=1113](https://www.thejot.net/article-preview/?show_article_preview=1113).
  27. Kontou, E., Liu, C., Xie, F., **Wu, X.** and Lin, Z., (2019) "Understanding the linkage between electric vehicle charging network coverage and charging opportunity using GPS travel data". *Transportation Research Part C*, Vol. 98, pp. 1-13. [doi:10.1016/j.trc.2018.11.008](https://doi.org/10.1016/j.trc.2018.11.008).

26. Xie, C., **Wu, X.**, and Boyles, S. (2019) "Traffic equilibrium with a continuously distributed bound on travel weights: the rise of range anxiety and mental account", *Annals of Operations Research*, Vol. 273, pp. 279-310. [doi: 10.1007%2Fs10479-018-2990-0](https://doi.org/10.1007%2Fs10479-018-2990-0)
25. **Wu, X.\*** (2018) "Role of workplace charging opportunities on adoption of plug-in electric vehicles -- analysis based on GPS-based longitudinal travel data", *Energy Policy*, Vol. 114, pp. 367-379. [doi: 10.1016/j.enpol.2017.12.015](https://doi.org/10.1016/j.enpol.2017.12.015)
24. **Wu, X.\***, Rahman, A. and Zaloom, V. (2018) "Study of travel behavior of vessels in inland waterways using AIS data – a case study at hot spots in Sabine-Neches Waterways". *Ocean Engineering*, Vol. 147, pp. 399-413. [doi: 10.1016/j.oceaneng.2017.10.049](https://doi.org/10.1016/j.oceaneng.2017.10.049)
23. **Wu, X.\***, Mehta, A., Zaloom, V. and Craig, B. (2016) "Analysis of waterway transportation in Southeast Texas waterways based on AIS data", *Ocean Engineering*, Vol. 121, pp. 196-209. [doi:10.1016/j.oceaneng.2016.05.012](https://doi.org/10.1016/j.oceaneng.2016.05.012)
22. **Wu, X.\*** (2015) "Study on mean-standard deviation shortest path problem in stochastic and time-dependent networks: a stochastic dominance based approach", *Transportation Research Part B*, Vol. 80, pp. 275-290. [doi:10.1016/j.trb.2015.07.009](https://doi.org/10.1016/j.trb.2015.07.009)
21. **Wu, X.\***, Aviguzzaman, M. and Lin, Z. (2015) "Analysis of plug-in hybrid electric vehicles' utility factors using GPS-based longitudinal travel data", *Transportation Research Part C*, Vol. 57, pp. 1-12. [doi:10.1016/j.trc.2015.05.008](https://doi.org/10.1016/j.trc.2015.05.008)
20. **Wu, X.\***, Dong, J. and Lin, Z. (2014) "Cost analysis of plug-in hybrid electric vehicles using GPS-based longitudinal travel data", *Energy Policy*, Vol. 68, pp. 206-217. [doi: 10.1016/j.enpol.2013.12.054](https://doi.org/10.1016/j.enpol.2013.12.054)
19. **Wu, X.\***, Rahman, M. and Zaloom, V. (2014) "Probability analysis of vessel collisions and groundings in Southeast Texas Waterway", *Transportation Research Record*, Vol.2426, pp. 44-53.
18. **Wu, X.\*** (2013) "Finding reliable shortest paths in dynamic stochastic networks", *Transportation Research Record*, No. 2333, pp. 80-90.
17. **Wu, X.\*** and Nie, Y. (2013) "Solving multi-class percentile user equilibrium traffic assignment problem: a computational study", *Transportation Research Record*, No. 2334, pp. 75-83.
16. Zockaie, A., Nie, Y. **Wu, X.** and Mahmassani, H. (2013) "Impacts of correlations on reliable shortest path finding: a simulation-based study", *Transportation Research Record*, No. 2334, pp. 1-9.
15. Nie, Y., **Wu, X.**, Nelson, P. and Dillenburg, J. (2012) "Providing reliable route guidance: a case study using Chicago data", *Transportation Research Part A*, Vol. 46, pp. 403-419.
14. Nie, Y., **Wu, X.** and Homem-de-Melo, T. (2012) "Optimal path problems with second order stochastic dominance constraints", *Networks and Spatial Economics*, Vol. 12, pp. 561-587.
13. **Wu, X.** and Nie, Y. (2011) "Modeling heterogeneous risk-taking behavior in route choice: a stochastic dominance approach", *Transportation Research Part A*, Vol. 45, pp. 896-915.
12. **Wu, X.** and Nie, Y. (2011) "Application of discrete Fourier transform in finding reliable shortest paths", *Transportation Research Record*, No. 2263, pp. 82-91.
11. Nie, Y. and **Wu, X.** (2009) "Reliable a priori shortest path problem with limited spatial and temporal dependencies", In book: *Transportation and Traffic Theory 2009: Golden Jubilee*, pp. 169-195.
10. Nie, Y. and **Wu, X.** (2009) "Shortest path problem considering on-time arrival probability", *Transportation Research Part B*, Vol. 43, pp. 597-613.
9. **Wu, X.** and Nie, Y. (2009) "Implementation issues in approximate algorithms for reliable a priori shortest path problem", *Transportation Research Record*, No. 2091, pp. 51-60.
8. **Wu, X.**, Akinci, B. and Davidson, C. (2007). "Modeling graywater in residences: use of shower effluent in the toilet reservoir", *Journal of Green Buildings*, Vol. 2, pp. 111-120, 2007
7. Zhang, Z., **Wu, X.** and Yang, X. (2006) "BAPAS – a life cycle building environmental performance assessment model", *Building and Environment*, Vol. 41, pp. 669-675.

6. **Wu, X.**, Zhang, Z. and Chen, Y. (2005) "Study of the environmental impacts based on the 'green tax' - applied to several types of building materials", *Building and Environment*, Vol. 40, pp. 227-237, 2005
5. **Wu, X.** and Zhang, Z. (2005) "Input-output analysis of Chinese construction sector", *Construction Management and Economics*, Vol. 23, pp. 905-912.
4. Li, X., **Wu, X.** and Zhang, Z. (2005) "Study on social WTP for environmental impacts based on the LCA theory", *Journal of Harbin Institute of Technology*, 2005(11), pp. 1507-1510. (In Chinese)
3. **Wu, X.**, Zhang, Z. and Xiao H. (2005) "Environmental impact of multi-story residential buildings in Beijing", *Journal of Tsinghua University (Science and Technology)*, 2005(06), pp.721-725. (In Chinese).
2. Zhang, Z. and **Wu, X.** (2004) "LCA based building's environmental impact assessment system", *Urban Environmental and Urban Ecology*, 2004(5), pp. 27-29. (In Chinese)
1. Zhang, Z., **Wu, X.** and Gong, Z. (2004) "Study on environmental assessment theory and implementation standard of construction projects", *Environmental Protection*, 2004(5), pp. 39-42. (In Chinese)

***Full Papers in International Conference Proceedings*** (underlined: advised student)

13. Roy, U., Zohoori, S., **Wu, X.**, and Hamidi, M. (2020) "An AIS-data based one-way traffic delay analysis in Houston Ship Channel". In the *Proceeding of Transportation Research Board (TRB) 99<sup>th</sup> Annual Meeting*, Washington, DC, Washington, DC., January 12-16, 2020.
12. **Wu, X.** Yang, H., Mainali, B., and Pokharel, P. (2019) "Implementation of Platoon-based Actuated Signal Control to Coordinated Intersections: a case study at two arterial corridors in Greater Houston". In the *Proceeding of Transportation Research Board (TRB) 98<sup>th</sup> Annual Meeting*, Washington, DC, Washington, DC., January 13-17, 2019.
11. **Wu, X.** (2018) "Analysis of workplace charges on plug-in electric vehicle market acceptance". In the *Proceeding of Transportation Research Board (TRB) 97<sup>th</sup> Annual Meeting*, Washington, DC, January 7-11, 2018.
10. Yang, H., Haque, M., and **Wu, X.** (2018) "Connected vehicle-enabled proactive signal control for congestion mitigation on arterial corridors". In the *Proceeding of Transportation Research Board (TRB) 97<sup>th</sup> Annual Meeting*, Washington, DC, January 7-11, 2018.
9. Yang, H., Haque, M., and **Wu, X.** (2018) "Development and implementation of a platoon-based actuated signal control system". In the *Proceeding of Transportation Research Board (TRB) 97<sup>th</sup> Annual Meeting*, Washington, DC, January 7-11, 2018.
8. Xie, C., **Wu, X.**, and Boyles, S. (2018) "Path-constrained traffic assignment: continuously distributed bounds on travel weights". In the *Proceeding of Transportation Research Board (TRB) 97<sup>th</sup> Annual Meeting*, Washington, DC, January 7-11, 2018.
7. Qian, Q., Kolkmeier, B., Su, L., **Wu, X.**, Jao, M., Yuan, R., Wang, K. H., Zaloom, V. (2017) "Streambank erosion and protection due to wake wash in the sabine neches waterway". In the *Proceeding of the 18<sup>th</sup> Mainland-Taiwan Environmental Protection Conference*, Taipei, Taiwan, November 18-23, 2017.
6. **Wu, X.**, Rahman, A. and Zaloom, V. (2017) "Study of vessel travel behavior at Hot Spots in Sabine-Neches Waterways". In the *Proceeding of Transportation Research Board (TRB) 96<sup>th</sup> Annual Meeting*, Washington, DC, January 8-12, 2017.
5. Hu, Y., Chen, Z. and **Wu, X.** (2017) "Station allocation model for electric bicycle-sharing system". In the *Proceeding of Transportation Research Board (TRB) 96<sup>th</sup> Annual Meeting*, Washington, DC, January 8-12, 2017.
4. **Wu, X.** and Zhang, H. (2016) Analysis of time-dependent travel time reliability for urban corridors: a case study in Houston. In the *Proceeding of the 19<sup>th</sup> International IEEE Conference on Intelligent Transportation Systems (ITSC 2016)*, pp. 1939-1944, Rio de

Janeiro, Brazil, November 1-4, 2016.

3. Zhao, T., Nie, Y., **Wu, X.** and Zhang, Y. (2014) Empirical analysis of the dependence structure in traffic data using copula function. In *the Proceeding of the 17th International IEEE Conference on Intelligent Transportation Systems (ITSC 2014)*, pp.38-42, Qingdao, China, October 8-11, 2014.
2. Xie, C., **Wu, X.** and Boyles, S. (2014) Network equilibrium of electric vehicles with stochastic range anxiety. In *the Proceeding of the 17th International IEEE Conference on Intelligent Transportation Systems (ITSC 2014)*, pp.2505-2510, Qingdao, China, October 8-11, 2014.
1. Zhao, T., Nie, Y., **Wu, X.** and Zhang, Y. (2012) Capturing the dependence structure in traffic data using a new copula function. In *the Proceeding of the 5th International Symposium on Transportation Network Reliability (INSTR2012)*, Hong Kong, China, December, 2012.

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## ACADEMIC SERVICE & ASSOCIATIONS

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### Guest Editor

- *Journal of Advanced Transportation* (2016-2017)

### Reviewer:

#### **Journals**

1. *Transportation Research Part B: Methodological*
2. *Transportation Research Part C: Emerging Technologies*
3. *Transportation Research Part A: Policy and Practice*
4. *Transportation Research Part E: Logistics and Transportation Review*
5. *Transportation Research Part D: Transport and Environment*
6. *Ocean Engineering*
7. *Energy Policy*
8. *Computer Aided Civil and Infrastructure Engineering*
9. *Transportation Science*
10. *European Journal of Operational Research*
11. *Networks and Spatial Economics*
12. *Transactions on Intelligent Transportation Systems*
13. *IEEE Intelligent Transportation Systems Magazine*
14. *Transportmetrica A: Transport Science*
15. *Applied Energy*
16. *Energy*
17. *Transportation*
18. *Transport Policy*
19. *Journal of Transportation Engineering*
20. *Journal of Urban Planning and Development*
21. *Journal of Advanced Transportation*
22. *Journal of Energy Engineering*
23. *International Journal of Transportation Science and Technology*
24. *Energies*
25. *Entropy*

#### **Conferences**

1. *Annual Meeting of Transportation Research Board (TRB)*, 2012-2021
2. *International IEEE Conference on Intelligent Transportation Systems (IEEE-ITSC)*, 2012-2020
3. *10<sup>th</sup> EASTS Conference*, Taipei, Taiwan, Sep 9-12, 2013

### Academic Association

Committee Member of Marine Safety and Human Factors  
(AW040) of the Transportation Research Board (TRB)

**2014 - present**



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## OFF-CAMPUS PRESENTATIONS

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28. Lidar Data for Digital Elevation Modelling using ArcGIS. Presented to the Southeast Texas Flooding Coordinate Research Monthly Meeting. Beaumont, Texas, October, 2020.
27. Implementation of Platoon-based Actuated Signal Control to Coordinated Intersections: a case study at two arterial corridors in Greater Houston. *The 98th Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2019.
26. Path-constrained traffic assignment: continuously distributed bounds on travel weights. *The 97th Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2018.
25. Development and implementation of a platoon-based actuated signal control system. *The 97th Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2018.
24. Connected vehicle-enabled proactive signal control for congestion mitigation on arterial corridors. *The 97th Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2018.
23. Analysis of workplace charges on plug-in electric vehicle market acceptance. *The 97th Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2018.
22. Study on mean-standard deviation shortest path problem in stochastic and time-dependent networks: a stochastic dominance-based approach. Invited Talk at National University of Singapore, September, 2017.
21. Connected-vehicle enabled proactive signal control system for congestion mitigation on arterial corridors. *Automated Vehicles Symposium (AVS) 2017*, San Francisco, CA, July 2017.
20. Proactive traffic signal timing and coordination for congestion mitigation on arterial roads. Invited to Talk at Texas State Transportation Innovation Council, Austin, TX, June 2017.
19. A station allocation model for electric bicycle sharing system. *The 96th Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2017.
18. Study of Vessel Travel Behavior at Hot Spots in Sabine-Neches Waterway. *The 96th Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2017.
17. Analysis of time-dependent travel time reliability for urban corridors: a case study in Houston. *The IEEE 19th International Conference on Intelligent Transportation Systems (ITSC2016)*, Rio de Janeiro, Brazil, Nov. 2016.
16. Analysis of waterway transportation in Southeast Texas waterways based on AIS data. *The 95th Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2016.
15. Routing electric vehicles in stochastic networks considering vehicle range uncertainty. *The 2015 Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting*, Philadelphia, PA, Nov. 2015.
14. Finding optimal mean-risk routes in dynamic stochastic networks: a stochastic dominance approach. *The 2014 Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting*, San Francisco, CA, Nov. 2014.
13. Probability analysis of vessel collisions and groundings in Southeast Texas Waterway. *The 93rd Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2014.
12. Cost analysis of plug-in hybrid electric vehicles using GPS-based longitudinal travel data. *The 2013 Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting*, MN, Oct. 2013.
11. Finding reliable shortest paths in dynamic stochastic networks. *The 92nd Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2013.
10. Solving multi-class percentile user equilibrium traffic assignment problem: a computational study. *The 92nd Annual Meeting of Transportation Research Board*, Washington DC, Jan. 2013.
9. Routing and traffic assignment in stochastic network. *Section of Doctoral Student Research Presentation in Transportation Modeling, the 91st Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2012.

8. Time-dependent reliable shortest path problem. *The 2011 Institute for Operations Research and the Management Sciences (INFORMS) Midwestern Conference*, Columbus OH, Aug. 2011.
7. Modeling heterogamous risk-taking behavior in route choice: a stochastic dominance approach. *The 19th International Symposium on Transportation and Traffic Theory (ISTTT19)*, Berkeley CA, July 2011.
6. Modeling heterogamous risk-taking behavior in route choice: a stochastic dominance approach. *Invited by the Center for Nonlinear Studies, Los Alamos National Laboratory*, Los Alamos NM, May 2011.
5. Modeling heterogamous risk-taking behavior in route choice: a stochastic dominance approach. *Invited presentation as Transportation Center Dissertation Year Fellow*, Transportation Center of Northwestern University, Evanston, IL, Apr. 2011
4. Application of discrete Fourier transform in finding reliable shortest paths. *The 90th Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2011.
3. Providing reliable route guidance: a case study using Chicago data. *The 89th Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2010.
2. Some implementation issues in approximate algorithms for reliable a priori shortest path problem. *The 88th Annual Meeting of Transportation Research Board (TRB)*, Washington DC, Jan. 2009.
1. Input-output analysis of Chinese construction sector. *The 1st CIB Student Chapter International Symposium: Innovation in Construction & Real Estate*, Hong Kong, Sep. 2003.

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## TECHNICAL REPORTS

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10. **Wu, X.**, Amer, R., Tan, M. and Albalawi, F. (2021) Final Report: GIS and Satellite Radar InSAR for Flooding Risk Analysis to Pipelines in Southeast Texas. Tech Report for the LU Center for Midstream Management and Science.
9. **Wu, X.**, Yang, H., Adhikari, B., Mainali, B. and Pokharel, P. (2019) Final Report: Implementation of Proactive Signal Control System at Multiple Intersections at the Greater Houston Area. Project # 5-6920. Tech Report for Texas Department of Transportation.
8. Zaloom, V., Qian, Q., Jao, M., **Wu, X.** and Wang, K. H. (2017) Wake Wash in Sabine-Neches Waterway. Tech Report for Sabine-Neches Navigation District.
7. **Wu, X.**, Yang, H. and Haque, M. (2017) Report on the Initial Investigation of Two Intersections on MLK Pkwy. Submitted to the City of Beaumont.
6. **Wu, X.**, Yang, H. and Haque, M. (2016) Final Report: Proactive Traffic Signal Timing and Coordination for Congestion Mitigation on Arterial Roads: A Case Study in Houston. Project # 0-6920. Tech Report for Texas Department of Transportation.
5. **Wu, X.** (2014) Utility Analysis of Electric Vehicles based on Seattle Travel Data. Submitted to the Oak Ridge National Laboratory.
4. **Wu, X.** (2012) Explanation of the Seattle Travel Choice Data. Submitted to the Oak Ridge National Laboratory.
3. Nie, Y., **Wu, X.**, Li, Q., Dillenburg, J. and Nelson, P. (2011) Developing Travel Reliability Inventory for the Chicago Region. Prepared for the Illinois Department of Transportation.
2. Nie, Y., **Wu, X.**, Zissman, J., Lee, C., Haynes, M., Nelson, P. and Dillenburg, J. (2010) Providing Reliable Route Guidance: Phase II, Technical Report #2010-001. Prepared for the Center for the Commercialization of the Innovative Transportation Technology, Northwestern University.
1. Nie, Y., **Wu, X.**, Nelson, P. and Dillenburg, J.. (2009) Providing Reliable Route Guidance using Chicago Data, Technical Report #2009-001. Prepared for the Center for the Commercialization of the Innovative Transportation Technology, Northwestern University.



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## HIGHER EDUCATION EXPERIENCE

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### **Undergraduate Course:**

1. CVEN 2272 Introduction to CAD and Surveying, Spring 2020 - present
2. CVEN 2270 Mechanics of Solid, core course, Spring 2018 – present
3. CVEN 3290 *Engineering Probability and Statistics*, core course, Fall 2012 – 2016, 2018
4. CVEN 4365 *Introduction to Transportation Engineering*, core course, Fall 2012 - present

### **Graduate Course:**

#### Current:

1. CVEN 5320 *Engineering Project Management*
2. CVEN 5364 *Transportation Engineering and Traffic Analysis*, graduate elective
3. CVEN 5370 *GIS Applications in Engineering*
4. CVEN 5366 *Travel Demand Analysis*

#### Previous:

5. CVEN 5347 *Statistical Principal Engineering Systems* (2012 - 2016)
  6. CVEN 5375 *Risk Analysis and Decision Making in Engineering* (2013 - 2017)
  7. CVEN 5365 *Urban Transportation System Analysis* (2013)
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## STUDENT ADVISING

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### **Doctoral Students:**

3. Mubarak Adesina, 2020 – present, as dissertation advisee.
2. Shahin Sajjadi, 2019 – present, as dissertation advisee.
1. Uttara Roy, 2017 – 2020, as dissertation advisee

**Dissertation:** *Study of the Travel Time of Vessels and Their Delays Based on AIS Data: a Case Study in Houston Ship Channel*

### **Master students (with thesis)**

13. Fayez Albalawi, expected to graduate in May 2022, as thesis advisee.
12. Mdmasarul Kabir, graduated in August 2020, as thesis advisee.  
**Thesis:** *Study of U-turn Behavior of Vessels in Houston Ship Channel*
11. Binod Adhikari, graduated in August 2019, as thesis advisee.  
**Thesis:** *Platoon-based Traffic Signal Design and Implementation for Diamond Intersections: A Case Study in Houston*
10. Hao Zhang, graduated in December 2018 (expected), as thesis advisee.  
**Thesis:** *Travel Time Reliability Analysis in Major Corridors of Houston*
9. Pratik Pokharel, graduated in August 2018, as thesis advisee.  
**Thesis:** *Development of Platoon-based Signal Control System for Arterial Corridors: A Case Study in Houston*
8. Bipil Mainali, graduated in May 2018, as thesis advisee.  
**Thesis:** *Implementation of Proactive Signal Control in Arterial Corridor with Multi-Intersections Equipped with Loop Detectors*
7. Benjamin Kolkmeie, graduated in May 2017, as thesis co-advisee.  
**Thesis:** *Study of Wake Wash in Sabine-Neches Waterways*
6. Afifa Rahman, graduated in May 2017, as thesis advisee.  
**Thesis:** *Study of Travel Behavior of Vessels in Inland Waters Using AIS Data*

5. MM Haque, graduated in May 2017, as thesis advisee.  
**Thesis:** *Proactive Traffic Signal Timing and Coordination for Congestion Mitigation on Arterial Roads*
4. Debashis Das, graduated in December 2016, as thesis advisee.  
**Thesis:** *Role of Work Place Charging Opportunities on Plug-in Hybrid Electric Vehicle Adoption*
3. Aesha Mehta, graduated in May 2016, as thesis advisee.  
**Thesis:** *Probability Analysis of Vessel Collisions in the Sabine-Neches Waterways based on AIS data*
2. Md. Aviquzzaman, graduated in December 2014, as *thesis advisee*.  
**Thesis:** *Utility Factor Analysis for Plug-in Hybrid Electric Vehicles based on Longitudinal Travel Data*
1. Md. Hafizur Rahman, graduated in May 2014, as thesis advisee.  
**Thesis:** *Probability Analysis of Vessel Accidents in Southeast Texas Waterways*

#### **Undergraduate Research Assistant**

Mellisa Tan

**Project:** GIS and Satellite Radar InSAR for Flooding Risk Analysis to Pipelines in Southeast Texas

Lauren Combs

**Project:** Risk Analysis and Mitigation Solutions of Vessel Accidents in Sabine-Neches Waterways, Fall 2014 – Spring 2015.