Shangjia Dong, Ph.D.

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Skills

- **Programming Languages**: Python, MATLAB, R, C/C++
- **Analytics**: Statistical analysis (NumPy, SciPy, Pandas and R), Mathematical modeling, Algorithm design
- **Artificial Intelligence**: Machine learning (Sklearn, MATLAB toolbox), Deep learning (TensorFlow, Keras)
- **Data Visualization/Animation**: Python, MATLAB, R, Web map
- **Other**: Network Analysis, Version control, Computer vision, Database management

Education

- **Oregon State University** — Corvallis, OR
  Ph.D. Candidate in Transportation Engineering; Minor in Computer Science — *Nov. 2015 – Sep. 2018*
  M.Sc. in Civil Engineering (Transportation Engineering.) — *Sep. 2013 – Nov. 2015*
- **University of Electronic Sciences and Technology of China** — Chengdu, CHINA
  B.Sc. in Information and Computation Science; Dual B.Sc. in Finance — *Sep. 2009 – July. 2013*

Selected Projects

- **An Integrated Social Science and Agent-based Modeling Approach to Improve Life Safety from Near-field Tsunami Hazards**: Quantify the impacts of unplanned network disruptions to the critical links on network resilience and retrofitting planning
- **Understanding Interdependence Between Systems Towards Resilient Critical Lifeline Infrastructure in the Pacific Northwest**: Identify the interdependent relationship among critical infrastructure system and develop network-of-networks analysis framework to characterize the network interactions
- **Characterizing the System Impact of Connected/Autonomous Vehicle in Transition Phase**: Unveil the mobility percolation phenomenon and identify the transition threshold in a connected vehicle network with varying market penetration and connection range

Selected Publications

- **Shangjia Dong**, Alireza Mostafizi, Haizhong Wang, Jianxi A Gao, and Xiaopeng Li. "Measuring the topological robustness of transportation networks to disaster-induced failures: A percolation approach" *Journal of Infrastructure System.* (2018) (Under 2nd round review)
- **Shangjia Dong**, Alireza Mostafizi, Haizhong Wang, Jia Li. "A Stochastic Analysis of Highway Capacity: Empirical Evidences and Implications," *Journal of Intelligent Transportation System*, 2017. 22 (4), 338-352
- Alireza Mostafizi, **Shangjia Dong**, Haizhong Wang. "Percolation phenomenon in connected vehicle network through a multi-agent approach: Mobility benefits and market penetration," *Transportation Research Part C: Emerging Technologies*, 2017. Vol 85, age 312-333
- Jason Anderson, **Shangjia Dong**. "Heavy Vehicle Driver Injury Severity Analysis by Time of Week: A Mixed Logit Approach Using HSIS Crash Data," *Journal of ITE, 2017 HSIS Research Paper Competition* (2017)
- Haizhong Wang, Lu Liu, **Shangjia Dong**, Zhen Qian, Heng Wei. "A Novel Work Zone Short-term Vehicle-type Specific Traffic Speed Prediction Model Through The Hybrid EMD-ARIMA Framework," *Transportmetrica B: Transport Dynamics* 2016 Vol 4(3), page: 159-186
- **Shangjia Dong**, Haizhong Wang, David Hurwitz, Guohui Zhang, Jianjun Shi. "Nonparametric Modeling Of Vehicle type-specific Headway Distribution In Freeway Work Zones," *Journal of Transportation Engineering*, 2015, 141(11)

Honors & Awards

1st Place	**Highway Safety Information System Research Paper Competition**	2017
1st Place	**Oregon ITE 25th Annual Bill Kloos Traffic Bowl**	2016
1st Place	**OSU College of Engineering Graduate Student Research Exposition**	2015
2nd Place	**PacTrans Student Conference Student Research Poster Competition**	2015
Awarded	**Richard and Lilo Smith Graduate Fellowship**	2015

Relevant Courses

- Machine Learning • Deep Learning • Algorithm and Data Structure • Parallel Programming
- Statistical Computing & Big Data • GeoVisulization: Web Mapping • Applied Multivariate Analysis
- Time Series • Data Visualization • Bayesian Statistics • Geographic Information Systems and Science