Shangjia Dong

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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**: Version control, Computer vision, Self-driving car application, Complex network resilience

Education

- **Oregon State University** — Corvallis, OR
  Ph.D. Candidate in Civil Engineering (Transportation Eng.); Minor in Computer Science — *Nov. 2015 – Present*
  M.Sc. in Civil Engineering (Transportation Eng.) — *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

- **Characterizing the System Impact of Connected/Autonomous Vehicle in Transition Phase**: Measured the impact of connected vehicle's market penetration and connection range on network-wide mobility through percolation.
- **Understanding Interdependencies Between Systems Towards Resilient Critical Lifeline Infrastructure**: Modeled the cascading failure between inter-connected systems and identify the critical transition threshold.
- **Percolation Phenomenon in Connected Vehicle Network, Using a Multi-agent approach**: Characterized percolation phenomenon in a dynamic agent-based connected vehicle network. Presented at USDOT T3e Webinar.
- **Mapping Accessibility to Critical Facility on Transportation Network**: Create web map to visualized the accessibility by travel time under different network disruption scenarios.
- **Deep-Learning in Self-driving Car Application**: Developed projects to detect road lane lines, classify the traffic sign, cloning driving behavior, and detect vehicle from video footage.

Selected Publications

- **Shangjia Dong**, Alireza Mostafizi, Haizhong Wang, Jia Li. "A Stochastic Analysis of Highway Capacity: Empirical Evidences and Implications," *Journal of Intelligent Transportation System*, 2017. (In press)
- 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 • Algorithm and Data Structure • Parallel Programming • Data Visualization
- Statistical Computing & Big Data • GeoVisulization: Web Mapping • Applied Multivariate Analysis
- Time Series • Traffic Simulation • Bayesian Statistics • Geographic Information Systems and Science