

# Ruda Zhang

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Dept. of Civil & Environmental Engineering

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## Education

- May 2018      Ph.D., Civil Engineering.  
**University of Southern California**, Los Angeles, California.  
Dissertation: "Taxicab Transportation: Operations, Equilibrium, and Efficiency".  
Committee: *Roger G. Ghanem* (Chair), Ketan Savla, Juan D. Carrillo (Economics).
- May 2018      M.A., Economics.  
**University of Southern California**, Los Angeles, California.  
Thesis: "Taxi Driver Learns Dynamic Multi-Market Equilibrium".  
Committee: *Matthew E. Kahn* (Chair), M. Hashem Pesaran, Geert Ridder.
- Jun 2012      B.E., Engineering Structure Analysis.  
**Peking University**, Beijing, China.

## Appointment

- Jun 2018–      Postdoctoral fellow.  
University of Southern California, Los Angeles, California.

## Research Interests

Urban Systems; Transportation; Big Data Analytics; Machine Learning; Game Theory; Institutional Analysis.

## Publications

- **Environmental Economics and Uncertainty: Review and a Machine Learning Outlook.**  
Ruda Zhang, Patrick Wingo, Rodrigo Duran, Matthew Kahn, Kelly Rose, Jennifer Bauer, Roger Ghanem.  
In press. Oxford Encyclopedia of Environmental Economics. 2018.
  - **Demand, Supply and Performance of Street-hail Taxi.**  
Ruda Zhang and Roger Ghanem.  
Revise and resubmit. IEEE Transactions on Intelligent Transportation Systems.
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- **Taxi Driver Learns Dynamic Spatial Equilibrium.**

Ruda Zhang and Roger Ghanem.

Finalist, Student Paper Competition. Probabilistic Mechanics & Reliability Conference 2016.

Finalist, Graduate Student Paper Competition. North American Meeting of the Regional Science Association International 2018.

Under review. Nature Communications.

- **Early Impacts of Transportation Network Companies on Taxi Demand.**

Ruda Zhang and Roger Ghanem.

In preparation.

## Data

- New York City Taxi Trip Records, 2009-2013. Zhang, Ruda. 2018 February 20. Open Science Framework. [doi:10.17605/OSF.IO/ZHP7K](https://doi.org/10.17605/OSF.IO/ZHP7K). (Total size: ~200 GB)

## Fellowships & Awards

2012-2016	Provost Fellow, University of Southern California.
2009-2010	Peking University Academic Excellence Award.
2009-2010	Wusi Scholarship.
2009 Fall	HKUST Dean's List.
2008-2009	Peking University Three-Good Student (Highest Honor).
2008-2009	First Prize, Starlight International Media Scholarship.

## Computer Skills

Languages	R, C/C++17, Python; JavaScript, Ruby, SQL;
Applications	QGIS, GRASS GIS, JOSM; OSRM, OpenTripPlanner, Conveyal R5; Emacs, Git, Inkscape;
Systems	AWS (EC2, S3, CloudFront); HPC (Slurm); Debian Linux;

## Teaching

2017 Spring	Teaching Assistant. CE 402: Computer Methods in Engineering. Prof. Sami F. Masri
2016 Fall	Teaching Assistant. CE 408: Risk Analysis in Civil Engineering. Prof. Roger G. Ghanem
2014 Fall	Teaching Assistant. CE 408: Risk Analysis in Civil Engineering. Prof. Roger G. Ghanem

## Presentations

- 65th Annual North American Meetings of the Regional Science Association International (NARSC 2018). San Antonio, TX. Nov 7–10, 2018. Title: Taxi driver learns dynamic spatial equilibrium.
- GIS-Pro 2018 & CalGIS 2018. Palm Springs, CA. Oct 9-12, 2018. Title: Pick your poison: point, line, or polygon as your spatial unit?
- National Travel Monitoring Exposition and Conference 2018 (NaTMEC 2018). Irvine, CA. June 10–13, 2018. Title: Estimating Taxi Traffic from GPS Records.
- Engineering Mechanics Institute Conference 2018 (EMI 2018). Massachusetts Institute of Technology. May 29—Jun 1, 2018. Title: Taxi driver learns dynamic spatial equilibrium.
- Probabilistic Mechanics & Reliability Conference 2016 (PMC 2016). Vanderbilt University, May 22-25, 2016. Title: Sociodynamic Modeling of Urban Transportation System: Case Study of Taxi Commute in New York City.
- Engineering Mechanics Institute Conference 2016 (EMI 2016). Vanderbilt University, May 22-25, 2016. Title: Sustainability Score for Urban Systems.
- Engineering Mechanics Institute Conference 2015 (EMI 2015). Stanford University, June 16-19, 2015. Title: Quantifying Transit Accessibility in Urban Systems: Case Study in Portland Metropolitan Area.
- The National Workshop on Resilience Research (NWRR) for Critical Infrastructure: Current Status and Challenges. National Science Foundation, Arlington, VA. October 22-23, 2015. Title: Performance Metrics for Urban Infrastructure Systems: Transit Accessibility in Portland and Its Resilience.

## Academic Service

- Session chair, Urban Economics. 65th Annual North American Meetings of the Regional Science Association International (NARSC 2018).

## Academic and Professional Association

American Society of Civil Engineers (ASCE), Engineering Mechanics Institute (EMI).

Society for Industrial and Applied Mathematics (SIAM).

Institute for Operations Research and the Management Sciences (INFORMS).

Regional Science Association International (RSAI).

Urban Economics Association (UEA).

California Geographic Information Association (CGIA).