

Song Gao

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ACADEMIC APPOINTMENTS

University of Massachusetts Amherst
Department of Civil and Environmental Engineering

Amherst, MA

Professor

Sep. 2020 - Present

Associate Professor

Sep. 2013 - Aug. 2020

Assistant Professor

Sep. 2007 - Aug. 2013

EDUCATION

Massachusetts Institute of Technology

Cambridge, MA

Ph.D. in Transportation, February 2005

Dissertation: "Optimal Adaptive Routing and Traffic Assignment in Stochastic Time-Dependent Networks"

Committee: Moshe Ben-Akiva (chair), Jon Bottom, Patrick Jaillet, Nigel Wilson

M.S. in Transportation, February 2002

Thesis: "Routing Problems in Stochastic Time-Dependent Networks with Applications in Dynamic Traffic Assignment"

Advisor: Ismail Chabini

Tsinghua University

Beijing, China

B.S. in Civil Engineering, July 1999

Class rank: 1st out of 98

AWARDS AND HONORS

- Public Engagement Project (PEP) Fellow, University of Massachusetts Amherst, 2024.
- Public Interest Technology (PIT) Faculty Fellow, University of Massachusetts Amherst, 2023-2024.
- Co-author of the 4th Place Finalist, INFORMS Annual Meeting Poster Competition, 2016.
- Member of the Winning Team for the Project "NOx No More: Connecting Travel Logs with Simulation, Gaming, and Environmental Education", MacArthur Digital Media and Learning Competition, 2010. ([Press Release](#))
- Scholarship from the Federal Highway Administration (FHWA) for Workshop on Traffic Modeling: Traffic Behavior and Simulation, Jun. 30 - Jul. 2, 2008, Graz, Austria
- Honorable Mention (Second Place), Dissertation Prize Competition of the Transportation Science and Logistics (TSL) Society, Institute for Operations Research and Management Science (INFORMS), 2005.
- MIT United Parcel Service (UPS) Doctoral Fellowship, 2001-2002.
- MIT Presidential Fellowship, 1999-2000.

EDITORIAL SERVICES

- Editorial Board Editor, *Transportation Research Part B*
- Past Associate Editor, *Transportation Science*
- Past Editorial Board, *Journal of Intelligent Transportation Systems*

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|---|--|-------------------------------------|
| | <ul style="list-style-type: none"> • Past Editorial Board, Transportation Network Modeling Committee (ADB30), <i>Transportation Research Record</i> • Guest Editor, Special issue on “Emerging Mobility Services: Supply Strategies, Traveler Responses and Network Impacts”, <i>Transportation Research Part C</i> | |
| PROFESSIONAL SOCIETY COMMITTEES | <ul style="list-style-type: none"> • Member, Committee on Transportation Network Modeling (ADB30), Transportation Research Board (TRB), Apr. 15, 2012 - Apr. 14, 2021. • Member, Committee on Traveler Behavior and Values (ADB10), Transportation Research Board (TRB), Apr. 15, 2011 - Apr. 14, 2020. • Chair, Joint Subcommittee on Route Choice and Spatio-Temporal Behavior (ADB10(2), ADB30(3)), Transportation Research Board (TRB), Apr. 15, 2014 - Jun. 30, 2019. • Chair, Urban Transportation Planning and Modeling Special Interest Group, Transportation Science and Logistics (TSL) Society, Institute for Operations Research and Management Science (INFORMS), Oct. 2014 - Oct. 2017. | |
| PROFESSIONAL EXPERIENCE | Caliper Corporation Transportation Engineer | Newton, MA Nov. 2004 - Aug. 2007 |
| | <ul style="list-style-type: none"> • Enhanced and implemented a practical dynamic traffic assignment model that runs efficiently on large-scale regional planning networks in TransCAD, a GIS-based transportation planning software • Developed an interface to run SATURN, a simulation/assignment package widely used in Europe • Developed dynamic shortest path finding functions in TransCAD • Taught travel demand forecasting training courses to consultants, government employees, university professors and graduate students | |
| RESEARCH INTERESTS | Methodologies <ul style="list-style-type: none"> • Experimental studies and econometric models of choice behavior in transportation networks • Stochastic optimization algorithms in networks • Urban transportation network modeling and simulation in uncertain systems with real-time traveler information Applications <ul style="list-style-type: none"> • ICT (Information and Communication Technology) for transportation systems • Sustainable transportation systems • Transportation planning for normal and emergency conditions | |
| PAPERS IN REFEREED JOURNALS (PUBLISHED OR ACCEPTED) | (* indicates a student co-author in all publications and presentations) <ol style="list-style-type: none"> 1. Arriagada, J., Guevara, C.A., Munizaga, M. and Gao, S. (2024) An experiential learning-based transit route choice model using large-scale smart-card data. <i>Transportation</i>. doi.org/10.1007/s11116-024-00000-0 2. Ayaz, S. B.*, Tian, H.*, Gao, S. and Fisher, D. L. (2023). Proactive route choice with real-time information: Learning and effects of network complexity and cognitive load. <i>Transportation Research Part C</i> 149:104035. doi.org/10.1016/j.trc.2023.104035 | |

3. Yu, X.* and **Gao, S.** (2022). A Batch Reinforcement Learning Approach to Vacant Taxi Routing. *Transportation Research Part C* **139**:103640. doi.org/10.1016/j.trc.2022.103640
4. Mai, T., Yu, X.*, **Gao, S.** and Frejinger, E. (2021). Routing policy choice prediction in a stochastic network: Recursive model and solution algorithm. *Transportation Research Part B* **151**:42-58. doi.org/10.1016/j.trb.2021.06.016
5. Plotnikov, M., Collura, J., **Gao, S.** and Burleson, W. (2021). Assessing the Impacts of Placing Tolls on Interstate Highways: An Illustrative Example on Interstate 93 in Boston. *Boston Society of Civil Engineers Section (BSCES) Civil Engineering Practice Journal* **28**(1):6-17.
6. Yu, X. * and **Gao, S.** (2019). Learning Routing Policies in a Disrupted, Congestible Network with Real-Time Information: An Experimental Approach. *Transportation Research Part C* **106**:205-219. doi.org/10.1016/j.trc.2019.07.014
7. Araldo, A., **Gao, S.**, Seshadri, R., Azevedo, C. L., Ghafourian, H.*, Sui, Y., Ayaz, S. B.*, Sukhin, D. and Ben-Akiva, M. (2019). System-Level Optimization of Multi-Modal Transportation Networks for Energy Efficiency Using Personalized Incentives: Formulation, Implementation and Performance. *Transportation Research Record* **2673**:425-438. doi.org/10.1177/0361198119864906
8. Ding-Mastera, J.*, **Gao, S.**, Jenelius, E., Rahmani, M. and Ben-Akiva, M. (2019). A Latent-Class Adaptive Routing Choice Model in Stochastic Time-Dependent Networks. *Transportation Research Part B* **124**:1-17. doi.org/10.1016/j.trb.2019.03.018
9. Yu, X.*, **Gao, S.**, Hu, X. and Park, H. (2019). A Markov Decision Process Approach to Vacant Taxi Routing with E-Hailing. *Transportation Research Part B* **121**:114-134. doi.org/10.1016/j.trb.2018.12.013
10. Park, H., Haghani, A. **Gao, S.**, Knodler, M., and Samuel, S (2018). Anticipatory Dynamic Traffic Sensor Location Problems with Connected Vehicle Technologies. *Transportation Science* **52**:1297-1588. doi.org/10.1287/trsc.2018.0838
11. Guevara, C. A., Tang, Y.* and **Gao, S.** (2018). The Initial Condition Problem with Complete History Dependency in Learning Models for Travel Choices. *Transportation Research Part B* **117**:850-861. [doi:10.1016/j.trb.2017.09.006](https://doi.org/10.1016/j.trb.2017.09.006)
12. Huang, H.* and **Gao, S.** (2018). Trajectory-Adaptive Routing in Dynamic Networks with Dependent Random Link Travel Times. *Transportation Science* **52**:102-117. [doi:10.1287/trsc.2016.0691](https://doi.org/10.1287/trsc.2016.0691)
13. Park, H., **Gao, S.** and Samuel, S. (2017). Modeling Effects of Forward Roadway Glance Durations on Latent Hazard Detection. *Transportation Research Record* **2663**: 90-98. [doi:10.3141/2663-12](https://doi.org/10.3141/2663-12)
14. Tang, Y.*, **Gao, S.** and Ben-Elia, E. (2017). An Exploratory Study of Instance-Based Learning for Route Choice with Random Travel Times. *Journal of Choice Modeling* **24**: 22-35. [doi:10.1016/j.jocm.2017.03.004](https://doi.org/10.1016/j.jocm.2017.03.004)
15. Ben-Akiva, M., **Gao, S.**, Lu, L.* and Wen, Y. (2015). Combining Disaggregate Route Choice Estimation with Aggregate Calibration of a Dynamic Traffic Assignment Model. *Networks and Spatial Economics* **15**:559-581. [doi:10.1007/s11067-014-9232-z](https://doi.org/10.1007/s11067-014-9232-z)
16. Ding-Mastera, J.*, **Gao, S.**, Jenelius, E., Rahmani, M., Huang, H. Ma, L., Pereira, F. and

- Ben-Akiva, M. (2014). Routing Policy Choice Set Generation in Stochastic Time-Dependent Networks: Case Studies for Stockholm and Singapore. *Transportation Research Record* **2466**:76-86. doi:10.3141/2466-09
17. Lu, X.*, **Gao, S.**, Ben-Elia, E. and Pothering, R.* (2014). Travelers' Day-to-Day Route Choice Behavior with Real-Time Information in a Congested Risky Network. *Mathematical Population Studies* **21**:205-219. doi:10.1080/08898480.2013.836418
 18. Razo, M.* and **Gao, S.** (2013). A Rank-Dependent Expected Utility Model for Strategic Route Choice with Stated Preference Data. *Transportation Research Part C* **27**:117-130. doi:10.1016/j.trc.2011.08.009
 19. Rachtan, P.*, Huang, H.* and **Gao, S.** (2013). Spatiotemporal Link Speed Correlations: An Empirical Study. *Transportation Research Record* **2390**: 34-43. doi:10.3141/2390-04
 20. Hu, X.*, **Gao, S.**, Chiu, Y. and Lin, D. (2012). Modeling Routing Behavior for Vacant Taxi Cabs in Urban Traffic Networks. *Transportation Research Record* **2284**: 81-88. doi:10.3141/2284-10
 21. **Gao, S.** (2012). Modeling Strategic Route Choice and Real-Time Information Impacts in Stochastic and Time-Dependent Networks. *IEEE Transactions on Intelligent Transportation Systems* **13**(3):1298-1311. doi:10.1109/TITS.2012.2187197
 22. Huang, H.* and **Gao, S.** (2012). Optimal Paths in Dynamic Networks with Dependent Random Link Travel Times. *Transportation Research Part B* **46**(5):579-598. doi:10.1016/j.trb.2012.01.005
 23. Ben-Akiva, M. E., **Gao, S.**, Wei, Z.* and Wen, Y. (2012). A Dynamic Traffic Assignment Model for Highly Congested Urban Networks. *Transportation Research Part C* **24**:62-82. doi:10.1016/j.trc.2012.02.006
 24. **Gao, S.** and Huang, H.* (2012). Real-Time Traveler Information for Optimal Adaptive Routing in Stochastic Time-Dependent Networks. *Transportation Research Part C* **21**(1):196-213. doi:10.1016/j.trc.2011.09.007
 25. **Gao, S.**, Frejinger, E. and Ben-Akiva, M. E. (2011). Cognitive Cost in Route Choice Models with Real-Time Information: An Exploratory Analysis. *Transportation Research Part A* **45**(9):916-926. doi:10.1016/j.tra.2011.04.008
 26. Lu, X.*, **Gao, S.** and Ben-Elia, E. (2011). Information Impacts on Route Choice and Learning Behavior in a Congested Network: An Experimental Approach. *Transportation Research Record* **2243**:89-98. doi:10.3141/2243-11
 27. Paciulli, M.*, Collura, J. and **Gao, S.** (2011). Developing an Evaluation Approach to Assess Large Scale ITS Infrastructure Improvements: I-91 Project in Massachusetts. *Transportation Research Record* **2243**:81-88. doi:10.3141/2243-10
 28. Andrews, S.*, Wang*, H., Ni, D., **Gao, S.** and Collura, J. (2010). Development and Implementation of an Adapted Evacuation Planning Methodology in the Framework of Emergency Management and Disaster Response: A Case Study Using TranCAD. *Journal of Transportation Safety and Security* **2**(4):352-368. doi:10.1080/19439962.2010.517743
 29. Razo, M.* and **Gao, S.** (2010). Strategic Thinking and Risk Attitudes in Route Choice: A

Stated Preference Approach. *Transportation Research Record* **2156**:28-35. doi:10.3141/2156-04

30. **Gao, S.**, Frejinger, E. and Ben-Akiva, M. E. (2010). Adaptive Route Choices in Risky Traffic Networks: A Prospect Theory Approach. *Transportation Research Part C* **18**(5):727-740. doi:10.1016/j.trc.2009.08.001
31. **Gao, S.**, Frejinger, E. and Ben-Akiva, M. E. (2008). Adaptive Route Choice Models in Stochastic Time-Dependent Networks. *Transportation Research Record* **2085**:136-143. doi:10.3141/2085-15
32. Ben-Akiva, M. E., Bottom, J., **Gao, S.**, Koutsopoulos, H. and Wen, Y. (2007). Towards Dis-aggregate Dynamic Travel Forecasting Models. *Tsinghua Science and Technology* **12**(2):115-130. doi:10.1016/S1007-0214(07)70019-6
33. **Gao, S.** and Chabini, I. (2006). Optimal Routing Policy Problems in Stochastic Time-Dependent Networks. *Transportation Research Part B* **40**(2):93-122. doi:10.1016/j.trb.2005.02.001
34. **Gao, S.** and Chabini, I. (2002). Best Routing Policy Problem in Stochastic Time-Dependent Networks. *Transportation Research Record* **1783**:188-196. doi:10.3141/1783-23

REFEREED BOOK
CHAPTERS
(PUBLISHED OR
ACCEPTED)

1. Tian, H.* and **Gao, S.** (2013). A Process Model for Route Choice in Risky Traffic Networks. *Procedia - Social and Behavioral Sciences (20th International Symposium on Transportation and Traffic Theory)*. Elsevier. Vol. 80, pp. 764-778. doi: 10.1016/j.sbspro.2013.05.041
2. Balakrishna, R., Ben-Akiva, M., Bottom, J. and **Gao, S.** (2013). Information Impacts on Traveler Behavior and Network Performance: State of Knowledge and Future Directions. In: Ukkusuri, S. and Ozbay, K. (ed.) *Advances in Dynamic Network Modeling in Complex Transportation Systems*. Springer. pp.193-224.

EXTERNALLY
FUNDED PROJECTS
(ACTIVE)

1. **Gao, S.** (PI) Understanding and Optimizing Ride-Sourcing Drivers' Learning Dynamics. National Science Foundation. Jun. 2023 - May 2026. \$495,638.

EXTERNALLY
FUNDED PROJECTS
(COMPLETED)

1. **Gao, S.** (PI) and Christofa, E. Outdoor Information Panels to Convey Real-Time Travel Information for Ridership Recovery. Massachusetts Department of Transportation. May 2021 - Jul. 2023. \$124,999.
2. Siby, S., Knodler, M. and **Gao, S.** (co-PI). Using the New SHRP2 Naturalistic Driving Study Database to Examine Safety Concerns for Older Drivers. New England Transportation Consortium (NETC). Nov. 2016 - Dec. 2018. \$150,000.
3. Ben-Akiva, M. (lead PI) and **Gao, S.** (UMass PI). Mobility Electronic Market for Optimized Travel (MeMOT). Advanced Research Projects Agency-Energy (ARPA-E), Department of Energy. Nov. 2015 - Sep. 2018. \$3,990,128. UMass portion: \$500,000.
4. **Gao, S.** (PI). Routing Policy Choice Models in Stochastic Time-Dependent Networks: The Stockholm Case Study. US Department of Transportation through New England University Transportation Center. Jun. 2014 - May 2018. \$159,694.
5. **Gao, S.** (PI) Electric Vehicle: Impacts on the Transportation Infrastructure. Apr. 2017 - Jul. 2017. Massachusetts Department of Transportation. \$30,696.

6. Fisher, D. L., **Gao, S.** (co-PI) and Knodler, M. ADHD Teen Driver Evaluation and Training Tool Development. US Department of Transportation through New England University Transportation Center. Jul. 2013 - Aug. 2017. \$99,825.
7. **Gao, S.** (PI), Ni, D. and Romoser, M. R. E. Mitigation Techniques to Modify Driver Performance to Improve Fuel Efficiency, Reduce Emissions, and Improve Safety. Massachusetts Department of Transportation. Dec. 2012 - Jul. 2016. \$264,260.
8. Tessier, R., **Gao, S.** (co-PI) and Hardy, D. A Proposal to Evaluate Portable Road Weather Information Systems. Massachusetts Department of Transportation. Oct. 2012 - Jun. 2016. \$395,293.
9. **Gao, S.** (PI). An Optimal Adaptive Routing Algorithm for Large-Scale Stochastic Time-Dependent Networks. US Department of Transportation through New England University Transportation Center. Jul. 2013 - Jun. 2015. \$99,994.
10. **Gao, S.** (PI). Cognitive Maps for Route Choice Modeling. US Department of Transportation through New England University Transportation Center. Jun. 2012 - Dec. 2014. \$60,076.
11. **Gao, S.** (PI). A Spatial Learning Model for the Micro-Simulation of Travel Dynamics. US Department of Transportation through New England University Transportation Center. Jun. 2012 - Dec. 2014. \$60,007.
12. Collura, J., Burleson, W. and **Gao, S.** (co-PI) A Decision Support System to Assess Disruptive Impacts of Alternative Transportation Financing Approaches. US Department of Transportation through New England University Transportation Center. Jun. 2012 - Dec. 2014. \$60,085.
13. Zhang, L. (lead PI) and **Gao, S.** (UMass PI). Agent-based Approach for Integrated Driver and Traveler Behavior Modeling: Theory, Methodology, and Applications to Transportation Management and Investment Planning. Exploratory Advanced Research Program (EARP) of Federal Highway Administration (FHWA). Apr. 2011 - Mar. 2014. \$650,000. UMass portion: \$175,000.
14. **Gao, S.** (PI). Route Choice in a Risky Traffic Network: Econometric vs. Process Modeling Paradigms. US Department of Transportation through University of Massachusetts University Transportation Center. Oct. 2011 - Sep. 2012. \$49,749.
15. **Gao, S.** (PI). Evaluation of the Traveler Information Service Provided by the Regional Traveler Information Center. Massachusetts Department of Transportation. Apr. 2011 - Jun. 2012. \$37,410.
16. **Gao, S.** (PI). Evaluating Real-time Traveler Information Benefits for the Pioneer Valley Region. US Department of Transportation through University of Massachusetts University Transportation Center. Oct. 2010 - Mar. 2012. \$79,037.
17. McDonald, A., Garcia, R., **Gao, S.** (co-PI) and Chan, K. NOx No More: Connecting Travel Logs with Simulation, Gaming, and Environmental Education. HASTAC/MacArthur Foundation. Sep. 2010 - Aug. 2011. \$155,000.
18. Polydoropoulou, A., Ben-Akiva, M. E., Macario, R., Van de Voorde, E. and **Gao, S.** (co-PI). EU-US ATLANTIS Program: Policy Analysis for Complex Transport Systems. US

Department of Education. Sep. 2010 - Sep. 2012. \$77,000.

19. **Gao, S.** (PI) and Balasubramanian, H. Trajectory-Adaptive Route Choice Models: Specification, Choice Set Generation, and Estimation. US Department of Transportation through New England University Transportation Center. Sep. 2010 - Aug. 2012. \$79,302.
20. **Gao, S.** (PI). Characterizing Traffic under Uncertain Disruptions: An Experimental Approach. US Department of Transportation through New England University Transportation Center. Nov. 2009 - Aug. 2011. \$79,163.
21. **Gao, S.** (PI). Stochastic Dependencies of Traffic Networks in Adaptive Routing with Real-Time Information. US Department of Transportation through University of Massachusetts University Transportation Center. Oct. 2009 - Mar. 2011. \$62,445.
22. **Gao, S.** (PI) and Fisher, D. L. Adaptive Route Choice Models with Real-Time Information. US Department of Transportation through New England University Transportation Center. Apr. 2009 - Aug. 2011. \$74,378.
23. Collura, J., **Gao, S.** (co-PI) and Ni, D. Evacuation Planning. Berkshire Regional Planning Commission, Franklin Regional Council of Governments and the Pioneer Valley Planning Commission. Sep. 2008 - Jun. 2009. \$100,000.
24. **Gao, S.** (PI). Value of Information for Optimal Adaptive Routing in Stochastic Time-Dependent Traffic Networks: Algorithms and Computational Tools. US Department of Transportation through University of Massachusetts University Transportation Center. Jul. 2008 - Jun. 2010. \$64,649.

INTERNALLY FUNDED PROJECTS

1. **Gao, S.** (PI). A Cooperative Ride-Sourcing Platform for Optimized Mobility Solutions: Data-Driven vs Model-Based Approaches. University of Massachusetts Faculty Research Grant. Jul. 2020 - Jun. 2021. \$16,500.
2. **Gao, S.** (PI). Adaptive Route Choices with Real-Time Traveler Information. University of Massachusetts Faculty Research Grant. Jun. 2009 - May. 2010. \$14,918.

PARTICIPATED RESEARCH PROJECTS

1. Senior Personnel (PI: Elisabeth Hamin, co-PI: Henry Renski). SRS RN: Preparing for Just and Sustainable Climate Migration. National Science Foundation. Sep. 2022 - Aug. 2023.
2. Consultant (Project Leader: Ben-Akiva, M.). Integrated Modeling of Mobility, Land-use, Environmental, and Energy-use Impacts. The Singapore-MIT Alliance for Research and Technology, Oct. 2009 - Oct. 2014.
3. Consultant (PI: Ben-Akiva, M.). Collaborative Development of Dynamic Traffic Simulation Models for Beijing: Phase II. Beijing Transportation Research Center (China), Apr. 2009 - Aug. 2010.
4. Consultant (PI: Ben-Akiva, M.). Collaborative Development of Dynamic Traffic Simulation Models for Beijing: Phase I. Beijing Transportation Research Center (China), Jan. - Dec. 2008.
5. Research Assistant (Supervisor: Chabini, I.). CAREER: High Performance Computing and Network Optimization Methods with Applications to Intelligent Transportation Systems. Na-

tional Science Foundation, Jun. 2000 - Oct. 2004.

6. Research Assistant (Supervisor: Chabini, I.). Variable Message Sign Placement for Regional Traffic Management of New York State Region 8, New York State Department of Transportation, Jan. 2003 - May 2003.
7. Research Assistant (Supervisor: Chabini, I.). Sentient Vehicle: Mobility and Environment (Phase I). Cambridge (UK) - Massachusetts Institute of Technology (MIT) Institute, Sep. 2001 - Jun. 2002
8. Research Assistant (Supervisor: Ben-Akiva, M.). DynaMIT: Real-Time Traffic Estimation and Prediction Systems. Federal Highway Administration, Sep. 1999 - May 2000.

PAPERS IN
REFEREED
PROCEEDINGS
(PUBLISHED OR
ACCEPTED)

1. Arriagada, J., Guevara, A., Munizaga, M. and **Gao, S.** Evaluating the role of experience in a route choice context using smart card data in a large-scale public transport network. *The 102nd Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #TRBAM-23-03609. Washington, DC, Jan. 8-12, 2023.
2. Yu, X.*, **Gao, S.** and Khani, A. Optimal Routing of Multiple Vacant Taxis: A Policy Gradient Method with Endogenous State Transition Probabilities. *The 100th Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #TRBAM-21-04165. Virtual Meeting, Jan. 25-29, 2021.
3. Xu, J.*, Chow, J. and **Gao, S.** Online Route Choice Modeling for Mobility-as-a-Service Networks with Non-Separable, Congestible Link Capacity Effects. *The 99th Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #20-01963. Washington, DC, Jan. 12-16, 2020.
4. Yu, X.*, **Gao, S.** and Hu, X. Optimizing Vacant Taxis Routing Decisions: Model-based and Model-free Approaches. *The 98th Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #19-03142. Washington, DC, Jan. 13-17, 2019.
5. Araldo, A., **Gao, S.**, Seshadri, R., Azevedo, C. L., Ghafourian, H., Sui, Y., Ayaz, S. B., Sukhin, D. and Ben-Akiva, M. System-Level Optimization of Multi-Modal Transportation Networks for Energy Efficiency Using Personalized Incentives: Formulation, Implementation and Performance. *The 98th Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #19-03092. Washington, DC, Jan. 13-17, 2019.
6. Jiang, T.*, **Gao, S.**, Ni, D. and Tang, Y.* A Field Study of Effectiveness of Eco-Driving: Real-time Feedback and Classroom Training. *The 97th Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #18-03492. Washington, DC, Jan. 7-11, 2018.
7. Ayaz, S. B.*, **Gao, S.** and Park, H. Cooperative Scheme - An Alternative Approach to an Equitable and Pareto-Improving Transportation System. *The 97th Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #18-00304. Washington, DC, Jan. 7-11, 2018.
8. Azevedo, C. L., Seshadri, R., **Gao, S.**, Atasoy, B., Akkinipally, A. P., Park, H., Song, X., Gupta, S., Sui, Y., Sukhin, D., Needell, Z. A., Ayaz, S. B., Christofa, E., Zhao, F., Trancik, J. and Ben-Akiva, M. Tripod: Sustainable Travel Incentives with Prediction, Optimization and

- Personalization. *The 97th Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #18-06769. Washington, DC, Jan. 7-11, 2018.
9. Yu, X.* and **Gao, S.** Route Choice in Highly Disrupted Network: Learning, Inertia, and Real-Time Information. *The 96th Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #17-05776. Washington, DC, Jan. 8-12, 2017.
 10. Tang, Y.*, Guevara, C. and **Gao, S.** Endogeneity Due to Missing Observations in a Learning Model For Travel Choice. *The 96th Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #17-06323. Washington, DC, Jan. 8-12, 2017.
 11. Park, H., **Gao, S.** and Haghani, A. Optimal Relocation of Portable Traffic Sensors to Improve Arterial Mobility. *The 96th Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #17-06276. Washington, DC, Jan. 8-12, 2017.
 12. Park, H., **Gao, S.** and Haghani, A. Sequential Interpretation and Prediction of Secondary Incident Probability in Real Time. *The 96th Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #17-06254. Washington, DC, Jan. 8-12, 2017.
 13. Tang, Y.* and **Gao, S.** An Exploratory Study of Instance-based Learning for Network Route Choice. *The 94th Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #15-5503. Washington, DC, Jan. 11-15, 2015.
 14. Ding, J.*, **Gao, S.**, Jenelius, E., Rahmani, M., Pereira, F. C. and Ben-Akiva, M. E. A Latent-Class Routing Policy Choice Model with Revealed Preference Data. *The 94th Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #15-1963. Washington, DC, Jan. 11-15, 2015.
 15. Ding, J.*, **Gao, S.**, Jenelius, E., Rahmani, M., Huang, H. Ma, L., Pereira, F. and Ben-Akiva, M. Routing Policy Choice Set Generation in Stochastic Time-Dependent Networks: Case Studies for Stockholm and Singapore. *The 93rd Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #14-1732. Washington, DC, Jan. 12-16, 2014.
 16. Rachtan, P.*, Huang, H.* and **Gao, S.** Spatial and Temporal Correlations of Freeway Link Speeds: An Empirical Study. *The 92nd Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #13-0598. Washington, DC, Jan. 13-17, 2013.
 17. Ding, J.* and **Gao, S.** An Optimal Adaptive Routing Algorithm for Large-scale Stochastic Time-Dependent Networks. *The 92nd Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #13-4273. Washington, DC, Jan. 13-17, 2013.
 18. Tian, H.* and **Gao, S.** A Process Model for Route Choice in Risky Traffic Networks. *The 92nd Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #13-4656. Washington, DC, Jan. 13-17, 2013.
 19. Pothering, R.* and **Gao, S.** Calibration of a User Equilibrium Model with Heterogeneous Risk Attitudes. *The 92nd Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #13-3641. Washington, DC, Jan. 13-17, 2013.
 20. Plotnikov, M.*, Collura, J., **Gao, S.** and Burleson, W. A Decision Support System to Assess the Impacts of Placing Tolls along Interstate Highways. *The 92nd Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #13-3959. Washington, DC,

Jan. 13-17, 2013.

21. Berliner, R.*, Collura, J. and **Gao, S.** Seeking New Revenues to Finance Transportation Investments: Placing Tolls on Untolled Interstates and the Challenges of Estimating Changes in Demand. *The 92nd Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #13-3700. Washington, DC, Jan. 13-17, 2013.
22. Lu, X.*, **Gao, S.**, Ben-Elia, E. and Pothering, R.* Information Impacts on Travelers' Route Choice Behavior in a Risky, Congested Network. *The 91st Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #12-2956. Washington, DC, Jan. 22-26, 2012.
23. Hu, X.*, **Gao, S.**, Chiu, Y. and Lin, D. Modeling Routing Behavior for Vacant Taxi Cabs in Urban Traffic Networks. *The 91st Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #12-3616. Washington, DC, Jan. 22-26, 2012.
24. Huang, H.* and **Gao, S.** Trajectory-Adaptive Routing in Dynamic Networks with Dependent Random Link Travel Times. *The 91st Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #12-2874. Washington, DC, Jan. 22-26, 2012.
25. Tian, H.*, **Gao, S.**, Fisher, D. L. and Post, B.* A Mixed-Logit Latent-Class Model of Strategic Route Choice Behavior with Real-time Information. *The 91st Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #12-2867. Washington, DC, Jan. 22-26, 2012.
26. Plotnikov, M.*, Collura, J., Burleson, W. and **Gao, S.** Evaluating Impacts of Placing Tolls on Interstate Highways. *The 91st Annual Meeting of Transportation Research Board Compendium of Papers*. Paper #12-3714. Washington, DC, Jan. 22-26, 2012.
27. **Gao, S.**, Frejinger, E. and Ben-Akiva, M. Cognitive Cost in Route Choice with Real-Time Information: An Exploratory Analysis. *Procedia Social and Behavioral Sciences* **17**: 136-149. (Papers selected for the 19th International Symposium on Transportation and Traffic Theory, Berkeley, CA, USA, 18-20 July 2011. Eds. Cassidy, M. J. and Skabardonis, A.)
28. Lu, X.*, **Gao, S.** and Ben-Elia, E.. Information Impacts on Route Choice and Learning Behavior in a Congested Network: An Experimental Approach. *The 90th Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #11-2275. Washington, DC, Jan. 23-27, 2011.
29. Tian, H.*, **Gao, S.**, Fisher, D. L. and Post, B.* Route Choice Behavior in a Driving Simulator with Real-Time Information. *The 90th Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #11-1474. Washington, DC, Jan. 23-27, 2011.
30. Paciulli, M.*, J. Collura and **Gao, S.**. Developing an Evaluation Approach to Assess Large Scale ITS Infrastructure Improvements: I-91 Project in Massachusetts. *The 90th Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #11-2265. Washington, DC, Jan. 23-27, 2011.
31. Ben-Akiva, M. E., **Gao, S.**, Wei, Z. and Wen, Y. A Dynamic Traffic Assignment Model for Highly Congested Urban Networks. *The 90th Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #11-3374. Washington, DC, Jan. 23-27, 2011.

32. Huang, H.* and **Gao, S.** Optimal Paths in Dynamic Networks with Dependent Random Link Travel Times. *The 90th Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #11-2473. Washington, DC, Jan. 23-27, 2011.
33. Razo, M. and **Gao, S.** Strategic Thinking and Risk Attitudes in Route Choice: A Stated Preference Approach. *The 89th Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #10-3915. Washington, DC, Jan. 10-14, 2010.
34. Lu, X.* and **Gao, S.** Evaluating the Potential of Traditional Demand Forecasting Software in Assisting Small and Medium-Sized Regions under Unexpected Emergency Situations. *The 89th Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #10-1415. Washington, DC, Jan. 10-14, 2010.
35. **Gao, S.** and Huang, H.* Is More Information Better for Routing in an Uncertain Network? *The 88th Annual Meeting of Transportation Research Board Compendium of Papers DVD*. Paper #09-1315, 21 pages, Washington, DC, Jan. 11-15, 2009.
36. **Gao, S.**, Frejinger, E. and Ben-Akiva, M. E. Adaptive Route Choice Models. *The 10th International Conference on Applications of Advanced Technologies in Transportation Proceedings CD*, Paper #644, 19 pages, Athens, Greece, May 28-30, 2008.
37. **Gao, S.**, Frejinger, E., and Ben-Akiva, M. E.. Adaptive Route Choice Models in Stochastic Time-Dependent Networks. *The 87th Annual Meeting of Transportation Research Board Compendium of Papers DVD*, Paper #08-1349, 19 pages, Washington, DC, Jan. 12-17, 2008.
38. **Gao, S.** Online Traveler Information in Stochastic Dynamic Networks. *Proceedings of the IEEE 9th International Conference on Intelligent Transportation Systems*, Toronto, Canada. Sep. 17-20, pp. 204-211 , 2006.
39. **Gao, S.** Equilibrium Dynamic Traffic Assignment with Adaptive Routing Decisions. *The 85th Annual Meeting of Transportation Research Board Compendium of Papers CD-ROM*, Paper #06-0205, 33 pages, Washington, DC, Jan. 22-26, 2006.
40. **Gao, S.** and Chabini, I. A Policy-Based Approach to Dynamic Traffic Assignment. *The 82nd Annual Meeting of Transportation Research Board Compendium of Papers CD-ROM*, Paper #03-2299, 14 pages, Washington, DC, Jan. 12-16, 2003.
41. **Gao, S.** and Chabini, I. Policy-Based Stochastic Dynamic Traffic Assignment Models and Algorithms. *Proceedings of the IEEE 5th International Conference on Intelligent Transportation Systems*, Singapore, Sep. 3-6, pp. 445-453, 2002.
42. **Gao, S.** and Chabini, I. Optimal Routing Policy Problems in Stochastic Time-Dependent Networks, Part I: Framework and Taxonomy. *Proceedings of the IEEE 5th International Conference on Intelligent Transportation Systems*, Singapore, Sep. 3-6, pp. 549-554, 2002.
43. **Gao, S.** and Chabini, I. Optimal Routing Policy Problems in Stochastic Time-Dependent Networks, Part II: Exact and Approximation Algorithms. *Proceedings of the IEEE 5th International Conference on Intelligent Transportation Systems*, Singapore, Sep. 3-6, pp. 555-559, 2002.
44. Gao, S. and Chabini, I.. The Best Routing Policy Problem in Stochastic Time-Dependent Networks. *The 81st Annual Meeting of Transportation Research Board Compendium of Pa-*

pers CD-ROM, Paper #02-4069, 39 pages, Washington, DC, Jan. 13-17, 2002.

SELECTED
CONFERENCE
PRESENTATIONS

(TRB presentations are omitted to avoid duplication with items in Refereed Proceedings.)

1. Jiang, G.* and **Gao, S.** Scalable Routing of Multiple Vacant Taxis in Large Networks. The 9th International Symposium on Dynamic Traffic Assignment (DTA 2023), Evanston, IL, Jul. 10-12, 2023.
2. Jiang, G.* and **Gao, S.** A Recursive Logit Model for Vacant Ride-Sourcing Vehicle Routing Behavior Prediction. The 16th International Conference on Travel Behaviour Research, Santiago, Chile, Dec. 11-15, 2022.
3. Jiang, G.*, Yu, X. and **Gao, S.** Optimal Routing of Multiple Vacant Taxi with Endogenous State Transition Probabilities. The Annual Meeting of the Institute for Operations Research and Management Science, Anaheim, CA, Oct. 24-27, 2021.
4. Tien. M., Yu, X.*, **Gao, S.** and Frejinger. E. A Link-Based Recursive Route Choice Model for Stochastic and Time-Dependent Networks. The 15th International Conference on Travel Behavior Research, Santa Barbara, CA, Jul. 15-20, 2018.
5. Ayaz, S.*, **Gao, S.**, and Park. H. Cooperative Scheme - An Alternative Approach to Equitable and Pareto-Improving System Optimum. The Annual Meeting of the Institute for Operations Research and Management Science, Houston, TX, Oct. 22-26, 2017.
6. Yu, X.*, **Gao, S.**, Park, H. and Hu, X. Multi-cycle Optimal Taxi Routing with E-hailing. The Annual Meeting of the Institute for Operations Research and Management Science, Houston, TX, Oct. 22-26, 2017.
7. Oduwole, A.*, **Gao, S.**, Park, H., and Ben-Akiva, M. Reward Allocation for Maximizing Energy Saving in a Transportation System. The Annual Meeting of the Institute for Operations Research and Management Science, Houston, TX, Oct. 22-26, 2017.
8. Guevara, C. A., Tang, Y.* and **Gao, S.** The Initial Condition Problem with Complete History Dependency in Learning Models for Travel Choices. The 22nd International Symposium of Transportation and Traffic Theory (ISTTT22), Evanston, IL, Jul. 24-26, 2017.
9. Yu, X.*, **Gao, S.**, Hu, X. and Park, H. Multi-Cycle Optimal Taxi Routing with E-Hailing. The First Triennial Conference of the Transportation Science and Logistics (TSL) Society of the Institute of Operations Research and Management Science (INFORMS), Chicago, IL, Jul. 26-29, 2017.
10. Ayaz, S. B.*, **Gao, S.** and Park, H. Cooperative Scheme - An Alternative Approach to Pareto-Improving System Optimum. The First Triennial Conference of the Transportation Science and Logistics (TSL) Society of the Institute of Operations Research and Management Science (INFORMS), Chicago, IL, Jul. 26-29, 2017.
11. Ayaz, S. B.*, Tian, H.*, **Gao, S.**, Fisher, D. L. and Post, B. Looking-Ahead Route Choice with Real-Time Information: Driving Simulator and PC-Based Experiments. The Annual Meeting of the Institute for Operations Research and Management Science, Nashville, TN, Nov. 13-16, 2016.
12. Yu, X.* and **Gao, S.** Route Choice in Highly Disrupted Network: Learning, Inertia, and

Real-Time Information. The Annual Meeting of the Institute for Operations Research and Management Science, Nashville, TN, Nov. 13-16, 2016.

13. Ding-Mastera, J.*, **Gao, S.**, Jenelius, E., Rahmani, M., Pereira, F. C. and Ben-Akiva, M. E. A Latent-Class Routing Policy Choice Model in Stochastic Time-Dependent Networks. The Annual Meeting of the Institute for Operations Research and Management Science, Philadelphia, PA, Nov. 1-4, 2015.
14. Ding-Mastera, J.*, **Gao, S.**, Jenelius, E., Rahmani, M., Pereira, F. C. and Ben-Akiva, M. E. Modeling Adaptive Route Choice in Stochastic Networks. The 14th International Conference on Travel Behavior Research. Windsor, UK, Jul. 19-23, 2015.
15. Tang, Y* and **Gao, S.** Endogeneity Due to Missing Observations in a Learning Model for Travel Choice. The 14th International Conference on Travel Behavior Research. Windsor, UK, Jul. 19-23, 2015.
16. Tang, Y.* and **Gao, S.** An Exploratory Study of Instance-based Learning for Network Route Choice. The 5th International Conference of Choice Modeling (ICMC), Austin, TX, May 10-13, 2015.
17. Yu, X.*, Mai, T.*, Ding-Mastera, J.*, **Gao, S.** and Frejinger, E. Comparison of the Recursive and Non-Recursive Models for Routing Policy Choice in Stochastic Time-Dependent Networks. The 5th International Conference of Choice Modeling (ICMC), Austin, TX, May 10-13, 2015.
18. Ding, J*, **Gao, S.**, Jenelius, E., Rahmani, M., Huang, H. Ma, L., Pereira, F. and Ben-Akiva, M. Adaptive Route Choice Models: Specification, Choice Set Generation, and Estimation -Case Study in Stockholm, Sweden. TSLWS 2014: 3rd INFORMS Transportation and Logistics Society Workshop, Chicago, Jun. 30 - Jul. 2, 2014.
19. Ding, J.*, **Gao, S.**, Jenelius, E., Rahmani, M., Huang, H. Ma, L., Pereira, F. and Ben-Akiva, M. Routing Policy Choice Set Generation in Stochastic Time-Dependent Networks: Case Studies for Stockholm and Singapore. The Annual Meeting of the Institute for Operations Research and Management Science, Minneapolis, MN, Oct. 6-9, 2013.
20. Tian, H.* and **Gao, S.** A Process Model for Route Choice in Risky Traffic Networks. The 20th International Symposium on Transportation and Traffic Theory (ISTTT 2013), Noordwijk, the Netherlands, Jul. 17-19, 2013.
21. Ding, J.* and **Gao, S.** Adaptive Route Choice Models: Choice Set Generation and Model Estimation. The Annual Meeting of the Institute for Operations Research and Management Science, Phoenix, AZ, Oct. 14-17, 2012.
22. Lu, X.*, **Gao, S.** and Ben-Elia, E. Comparison of Basic Assumptions of a Learning-Based Route Choice Model in a Congested, Uncertain Environment. The 13th International Conference on Travel Behavior Research, Toronto, Canada, Jul. 15-20, 2012.
23. Tian, H.* and **Gao, S.** A Process Model for Route Choice in Risky Traffic Networks. The 13th International Conference on Travel Behavior Research, Toronto, Canada, Jul. 15-20, 2012.
24. Ben-Akiva, M., **Gao, S.**, Lu, L. and Wen, Y. Combining Disaggregate Route Choice Esti-

- mation with Aggregate Calibration of a Dynamic Traffic Assignment Model. The 4th International Symposium on Dynamic Traffic Assignment. Marthas Vineyard, MA, Jun. 4-6, 2012.
25. Lu, X.*, **Gao, S.**, Ben-Elia, E. and Pothering, R.* Information Impacts on Travelers' Route Choice Behavior in a Congested Risky Network. The 16th International Conference of Hong Kong Society for Transportation Studies, Dec. 17-20, 2011.
 26. Lu, X.*, **Gao, S.**, Ben-Elia, E. and Pothering, R.* Information Impacts on Travelers' Route Choice Behavior in a Congested Risky Network. The Annual Meeting of the Institute for Operations Research and Management Science, Charlotte, NC, Nov. 13-18, 2011.
 27. Hu, X.*, **Gao, S.**, Chiu, Y. and Lin, D. A Routing Behavior Model for Vacant Taxi Cabs in Urban Traffic Networks. The Annual Meeting of the Institute for Operations Research and Management Science, Charlotte, NC, Nov. 13-18, 2011..
 28. Huang, H.* and **Gao, S.** Trajectory-Adaptive Routing in Dynamic Networks with Dependent Random Link Travel Times. The Annual Meeting of the Institute for Operations Research and Management Science, Charlotte, NC, Nov. 13-18, 2011.
 29. Tian, H.*, **Gao, S.**, Fisher, D. L. and Post, B.* Modeling Route Choice Behavior in a Driving Simulator with Real-Time Information. The Annual Meeting of the Institute for Operations Research and Management Science, Charlotte, NC, Nov. 13-18, 2011.
 30. **Gao, S.**, Frejinger, E. and Ben-Akiva, M. Cognitive Cost in Route Choice with Real-Time Information: An Exploratory Analysis. The 19th International Symposium on Transportation and Traffic Theory (ISTTT19). Berkeley, CA, July 18-20, 2011.
 31. Lu, X.*, **Gao, S.** and Ben-Elia, E. Information Impacts on Route Choice and Learning in a Congested Network: An Experimental Approach. The 19th Triennial Conference of the International Federation of Operational Research Societies. Melbourne, Australia, July 10-15, 2011.
 32. Tian, H.*, **Gao, S.**, Fisher, D. L. and Post, B.*. Strategic Route Choice Behavior in a Driving Simulator. The Annual Meeting of the Institute for Operations Research and Management Science, Austin, TX, Nov. 7-10, 2010.
 33. Huang, H.* and **Gao, S.** Optimal Paths in Dynamic Networks with Dependent Random Link Travel Times. The Annual Meeting of the Institute for Operations Research and Management Science, Austin, TX, Nov. 7-10, 2010.
 34. Lu, X.*, **Gao, S.** and Ben-Elia, E.. Experimental Analysis of User Equilibrium with Real-time Information in Randomly Disrupted Networks. The Annual Meeting of the Institute for Operations Research and Management Science, Austin, TX, Nov. 7-10, 2010.
 35. Razo, M.* and **Gao, S.** A Prospect Theory Model for Strategic Route Choice with Stated Preference Data. The Annual Meeting of the Institute for Operations Research and Management Science, Austin, TX, Nov. 7-10, 2010.
 36. Lu, X.*, **Gao, S.** and Ben-Elia, E.. Experimental Analysis of Route Choice Behavior with Real-time Information in Congested, Risky Networks. The European Transport Conference (ETC). Glasgow, UK, Oct. 11-13, 2010.

37. Razo, M.* and **Gao, S.** Modeling Strategic Route Choice Behavior: A Cumulative Prospect Theory Approach. The European Transport Conference (ETC). Glasgow, UK, Oct. 11-13, 2010.
38. Razo, M.* and **Gao, S.** Risk Taking and Strategic Thinking in Route Choice: A Stated-Preference Experiment. The Seventh Triennial Symposium on Transportation Analysis. Tromso, Norway, Jun. 20-25, 2010.
39. Huang, H.* and **Gao, S.** Trajectory-Adaptive Routing in Dynamic Networks with Dependent Random Link Travel Times. The Seventh Triennial Symposium on Transportation Analysis. Tromso, Norway, Jun. 20-25, 2010.
40. Huang, H.* and **Gao, S.** Optimal Paths in Dynamic Networks with Dependent Random Link Travel Times. Optimization Days 2010. Montreal, Canada, May 10-12, 2010.
41. Ben-Akiva, M., **Gao, S.**, Wei, Z. and Wen, Y.. A Dynamic Traffic Assignment Model for Highly Congested Urban Networks. The Annual Meeting of the Institute for Operations Research and Management Science, San Diego, CA, Oct. 11-14, 2009.
42. **Gao, S.**, Frejinger, E. and M. Ben-Akiva. Adaptive Route Choice in Risky Traffic Networks: A Prospect Theory Approach. The Annual Meeting of the Institute for Operations Research and Management Science, San Diego, CA, Oct. 11-14, 2009.
43. **Gao, S.** User Equilibrium in Static Stochastic Networks with Adaptive Travelers. The Annual Meeting of the Institute for Operations Research and Management Science, San Diego, CA, Oct. 11-14, 2009.
44. Razo, M.* and **Gao, S.** Strategic Thinking and Risk Attitudes in Route Choice: An Experimental Approach. The Annual Meeting of the Institute for Operations Research and Management Science, San Diego, CA, Oct. 11-14, 2009.
45. Huang, H.* and **Gao, S.** Trajectory-Adaptive Routing in Dynamic Networks with Dependent Random Link Travel Times. The Annual Meeting of the Institute for Operations Research and Management Science, San Diego, CA, Oct. 11-14, 2009.
46. Huang, H.* and **Gao, S.** Value of Traveler Information for Adaptive Routing in Stochastic Time-Dependent Networks. The Annual Meeting of the Institute for Operations Research and Management Science, Washington, DC, Oct. 12-15, 2008.
47. Lu, X.* and **Gao, S.** Reliable Departure Time and Route Choices in Stochastic Time-Dependent Networks. The Annual Meeting of the Institute for Operations Research and Management Science, Washington, DC, Oct. 12-15, 2008.
48. **Gao, S.**, Frejinger, E. and M. Ben-Akiva. Adaptive Route Choice Models. Workshop on Traffic Modeling: Traffic Behavior and Simulation, Graz, Austria, Jun. 30-July 2, 2008.
49. **Gao, S.**, Frejinger, E. and M. Ben-Akiva. Adaptive Route Choice Models. The 10th International Conference on Applications of Advanced Technologies in Transportation, Athens, Greece, May 28-30, 2008.
50. **Gao, S.**, Frejinger, E. and M. Ben-Akiva. Adaptive Route Choice Models. The 13th Annual ITS Massachusetts Meeting and Conference, Boston, MA, Apr. 14, 2008.

51. **Gao, S.**, Frejinger, E. and M. Ben-Akiva. Adaptive Route Choice Models. The Annual Meeting of the Institute for Operations Research and Management Science, Seattle, WA, Nov. 4-7, 2007.
52. **Gao, S.**, Brandon, J. and Rabinowicz, A. A Practical Equilibrium Dynamic Assignment Model for Planners. European Transport Conference, The Netherlands, Oct. 17-19, 2007.
53. Ben-Akiva, M., Bottom, J., **Gao, S.**, Koutsopoulos, H. and Wen. Y. Towards Disaggregate Dynamic Travel Forecasting Models. The 11th World Conference on Transportation Research, Berkeley, CA, Jun. 24-28, 2007.
54. **Gao, S.** Adaptive Traffic Assignment in Stochastic Dynamic Networks. The Sixth Triennial Symposium on Transportation Analysis, Phuket Island, Thailand, Jun. 10-15, 2007.
55. **Gao, S.**, Brandon, J. and A. Rabinowicz. A Practical Equilibrium Dynamic Assignment Model for Planners. The 2007 Transportation Research Board Planning Application Conference. Daytona Beach, Florida. May 6-10, 2007.
56. Ben-Akiva, M., Bottom, J., **Gao, S.**, Koutsopoulos, H. and Wen, Y. Towards Disaggregate Dynamic Traffic Assignment (DDTA). The Annual Meeting of the Institute for Operations Research and Management Science, Pittsburgh, PA, Nov. 5-8, 2006.
57. **Gao, S.** Online Traveler Information in Stochastic Dynamic Networks. The IEEE 9th International Conference on Intelligent Transportation Systems, Toronto, Canada. Sep. 17-20, 2006.
58. **Gao, S.** Equilibrium Dynamic Traffic Assignment with Adaptive Routing Choices. The First International Symposium on Dynamic Traffic Assignment, University of Leeds, United Kingdom, Jun. 21-23, 2006.
59. **Gao, S.** and Chabini, I.. Policy-Based Stochastic Dynamic Traffic Assignment Models and Algorithms. The IEEE 5th International Conference on Intelligent Transportation Systems, Singapore, Sep. 3-6, 2002.
60. **Gao, S.** and Chabini, I.. Optimal Routing Policy Problems in Stochastic Time-Dependent Networks, Part I: Framework and Taxonomy. The IEEE 5th International Conference on Intelligent Transportation Systems, Singapore, Sep. 3-6, 2002.
61. **Gao, S.** and Chabini, I.. Optimal Routing Policy Problems in Stochastic Time-Dependent Networks, Part II: Exact and Approximation Algorithms. The IEEE 5th International Conference on Intelligent Transportation Systems, Singapore, Sep. 3-6, 2002.
62. **Gao, S.** and Chabini, I.. Optimal Routing Policy Problems in Stochastic Time-Dependent Networks. The Annual Meeting of the Institute for Operations Research and Management Science, Miami Beach, FL, Nov. 4-7, 2001.

INVITED
SEMINARS,
WORKSHOPS, AND
PANELS

1. Understanding Learning for Travel Choice Modeling. Workshop in Honor of Daniel McFadden (organized by Stephane Hess, Joan Walker and Moshe Ben-Akiva), Santa Barbara, CA, Jul. 20, 2018.
2. Route Choice Decision under Risk and Uncertainty. Guest Lecturer for 1.205 Advanced Demand Modeling, Massachusetts Institute of Technology, 2015, 2018.

3. Route Choice in an Uncertain Environment: Algorithms and Behavioral Studies. Transport and Mobility Laboratory, Ecole Polytechnique Federale de Lausanne, Switzerland, May 28, 2014.
4. Adaptive Routing in Stochastic Time-Dependent Networks with Real-Time Information. Northwestern University Transportation Center, Evanston, IL, Oct. 24, 2013.
5. Route Choice Models. Guest Lecturer for 1.205 Advanced Demand Modeling, Massachusetts Institute of Technology, Oct. 18, 2013.
6. A Rank-Dependent Expected Utility Model for Strategic Route Choice with Stated Preference Data, CEAR (Center for Economic Analysis of Risks) Workshop: Traffic Risk, George State University, Atlanta, GA, Feb. 21, 2011.
7. Strategic Route Choice Behavior. Department of Civil and Environmental Engineering, University of California, Berkeley, CA, Feb. 18, 2011.
8. Strategic Route Choice Behavior. Department of Industrial Engineering, Tsinghua University, Beijing, China, Dec. 15, 2010.
9. Route Choice Models. Guest Lecturer for 1.205 Advanced Demand Modeling, Massachusetts Institute of Technology, Sep. 24, 2010.
10. Strategic Route Choices in Risky Networks with Real-Time Information. Department of Civil and Environmental Engineering, University of Maryland, College Park, MD, Sep. 10, 2010.
11. Issues and Innovations in Transportation: An Academic Viewpoint. Waltham IBM Innovation Center, Waltham, MA, Jun. 2, 2010.
12. Modeling Adaptive Route Choice Behavior. Intelligent Transportation Systems (ITS) Lab, Massachusetts Institute of Technology, Cambridge, MA, May 26, 2009.
13. Adaptive Travel Choices with Real-Time Information in Uncertain Networks. School of Engineering, Massachusetts Institute of Technology, Cambridge, MA, May 10, 2009.
14. Adaptive Travel Choices in Risky Dynamic Networks with Real-Time Information. Pervasive Decisioning Systems Lab, General Motors (GE) Global Research Center, Niskayuna, NY, Jul. 25, 2008.
15. Dynamic Traffic Assignment Models for the City of Beijing. Beijing Transportation Research Center, Beijing, China, Dec. 18-20, 2007.
16. Optimal Adaptive Routing and Traffic Assignment in Stochastic Time-Dependent Networks. Institute of Transportation Engineering, Tsinghua University, Beijing, China, Dec. 21, 2007.

**TEACHING
EXPERIENCE**

**University of Massachusetts Amherst
Department of Civil and Environmental Engineering**

Amherst, MA

Instructor

- CEE270 Systems Analysis and Engineering Economy for Civil Engineers (Spring 2009-2013, 2015-2024)
- CEE509 Transportation Systems Analysis (Fall 2015-2023, 2010-2013, Spring 2008-2010)

- CEE611 Transportation Pricing and Investment Analysis (Spring 2017, 2020, Fall 2008-2009, 2018, 2021-2023)
- CEE610 Transportation Planning and Analysis (Spring 2016, 2018, 2020, Fall 2012, 2021)

Massachusetts Institute of Technology
Department of Civil and Environmental Engineering

Cambridge, MA

Lecturer

- 1.10s Modeling and Simulation of Transportation Networks (Summer 2009, 2008)

Teaching Assistant

- 1.202 Demand Modeling (Spring 2004)
- 1.222 Transportation Demand and Economics (Fall 2003)
- 1.204 Computer Algorithms for System Analysis (Spring 2002)
- 1.225 Transportation Flow Systems (Fall 2000)

EU / US Cooperation Programme in Higher Education and Vocational Education and Training
Actions for Transatlantic Links and Academic Networks in Training and Integrated Studies

Lecturer

- Summer Course “Policy Analysis of Complex Transport Systems”, Jun. 2-7, 2012, San Miguel, Portugal (18 students)

GRADUATE

PhD Students

COMMITTEE CHAIR

- Yuxin Sun
- Guocheng Jiang
- Melissa Paciulli
- Xuan Lu
- Sayeeda Ayaz, May 2022
- Xinlian Yu, Jan. 2019
- Yue Tang, May 2017
- Jing Ding-Mastera, Jan. 2016
- Hengliang Tian, Sep. 2013
- He Huang, Jan. 2012

MS Students

- Hossein Ghafourian, Aug. 2019
- Adewale Oduwole, May. 2018
- Piotr Rachtan, Aug. 2012
- Jing Ding, Aug. 2012
- Ryan Pothering, May 2012
- Tyler de Ruiter, May 2012
- Hengliang Tian, Aug. 2010
- Michael Razo, Feb. 2010

- Xuan Lu, Feb. 2009
- He Huang, Feb. 2009

GRADUATE
COMMITTEE
MEMBER

PhD Students

- Mahsa Arabi
- Yang Tao (ECE), Aug. 2020
- Hao Dong (ECE), Aug. 2019
- Nicholas Fournie, Jan. 2019
- Zhuorui Yang (ECE), Aug. 2018
- Farnoush Khalighi, May 2018
- Mahour Rahimi, May 2017
- Mahyar Amirgholy, May 2016
- Michael Plotnikov, May 2012
- Chris Ahmadjian, 2009

MS Students

- Mohammed Mohammed
- Meha Kainth (ECE), 2015
- Ashley Costa, May 2012
- Rosaria Berliner, 2011
- Steven Andrews, 2009
- Melissa Paciulli, 2009
- Pothu Raju Khanta, 2008

DEPARTMENTAL
SERVICE

- Transportation Engineering Program Coordinator, 2023 - Present
- Department Diversity, Equity and Inclusion (DEI) Committee, member (2020 - Present), co-chair (2023 - Present)
- Department Personnel Committee, 2015 - 2019
- Department Curriculum Committee, 2018 - Present
- Faculty Advisor, Chi Epsilon UMass Student Chapter, 2010 - Present
- Faculty Advisor, Women in Transportation Seminar (WTS) UMass Student Chapter, 2010 - Present
- Member, Department Head Search Committee, Department of Civil and Environmental Engineering, 2018-2019
- Member, Water Resources Faculty Search Committee, Department of Civil and Environmental Engineering, 2014-2015
- Member, Faculty Search Committee, Department of Civil and Environment Engineering, 2010-2011

COLLEGE AND
UNIVERSITY
SERVICE

- ADVANCE Fellow, 2022 - 2023
- Coordinator, Engineering Women's Faculty Forum, College of Engineering, 2016 - 2018
- Member, International Study Council, Faculty Senate, Spring 2013 - 2018

Conference Committees

- Member, Scientific Committee. 2023 INFORMS Transportation and Logistics Society Conference, Chicago, IL, July 23-26, 2023.
- Member, Scientific Committee. The 2nd INFORMS Transportation Science and Logistics Society Conference, Washington, DC, May 27-29, 2020.
- Member, Organizing Committee. The 8th TRB Innovations in Travel Modeling (ITM2018) Conference, Atlanta, GA, Jun. 24-27, 2018.
- Cluster Chair on Urban Transportation Planning and Modeling for the Transportation Science & Logistics Society. The Annual Meeting of the Institute of Operations Research and Management Science (INFORMS), Houston, TX, Oct. 22-25, 2017.
- Member, Scientific Committee. The 1st INFORMS Transportation Science and Logistics Society Conference, Chicago, IL, Jul. 26-29, 2017.
- Cluster Chair on Urban Transportation Planning and Modeling for the Transportation Science & Logistics Society. The Annual Meeting of the Institute of Operations Research and Management Science (INFORMS), Nashville, TN, Nov. 13-16, 2016.
- Cluster Chair on Urban Transportation Planning and Modeling for the Transportation Science & Logistics Society. The Annual Meeting of the Institute of Operations Research and Management Science (INFORMS), Philadelphia, PA, Nov. 1-4, 2015.
- Cluster Chair on Urban Transportation Planning and Modeling for the Transportation Science & Logistics Society. The Annual Meeting of the Institute of Operations Research and Management Science (INFORMS), San Francisco, CA, Nov. 9-12, 2014.
- Organizing committee member for the stream “Travel Behavior”. The 18th Triennial Conference of the International Federation of Operational Research Societies (IFORS), Melbourne, Australia, July 10-15, 2011.
- Associate Editor. The 13th International IEEE Conference on Intelligent Transportation Systems, Madeira Island, Portugal, Sep. 19-22, 2010.
- Associate Editor. The 10th International Conference of Chinese Transportation Professionals (ICCTP), Beijing, China, Aug. 4-8, 2010.
- Co-Chair, Special Session “Approaches and Algorithms for Dynamic Travel Information Systems”. The IEEE 9th International Conference on Intelligent Transportation Systems, Toronto, Canada, Sep. 17-20, 2006.

Journals Refereed

- China Economic Review
- European Journal of Operational Research
- European Journal of Transport and Infrastructure Research
- IEEE Transactions on Automation Science and Engineering
- IEEE Transactions on Intelligent Transportation Systems
- International Journal of Production Economics
- Journal of Applied Econometrics
- Journal of Computing in Civil Engineering
- Journal of Intelligent Transportation Systems
- Journal of Transportation Engineering
- Networks and Spatial Economics

- Operations Research
- Simulation Modelling Practice and Theory
- Transport Policy
- Transportation
- Transportation Research Part A
- Transportation Research Part B
- Transportation Research Part C
- Transportation Research Part D
- Transportation Research Part E
- Transportation Research Record: Journal of Transportation Research Board
- Transportation Science

Books Refereed

- Encyclopedia of Complexity and Systems Science, Springer
- Network Reliability in Practice, Springer

Conferences Refereed

- The International Symposia on Transportation and Traffic Theory (ISTTT)
- The IEEE International Conferences on Intelligent Transportation Systems (ITSC)
- The Annual Meetings of Transportation Research Board (TRB)
- The International Conferences of Chinese Transportation Professionals (ICCTP)

Community Outreach

- Faculty advisor, UMass STEM Coaching Program, Operated by the UMass Student Chapter of WTS (Women in Transportation Seminars), in Partnership with Girls. Inc. of Holyoke, MA, Sponsored by Women for UMass Amherst, 2016-2017.
- Lecturer, Summer Transportation Institute at the University of Massachusetts Amherst, July 5-30, 2010. Sponsored by the Federal Highway Administration (FHWA).
- Lecturer, Summer Transportation Institute at the University of Massachusetts Amherst, July 6-31, 2009. Sponsored by the Federal Highway Administration (FHWA).