# Sina Bahrami

## CONTACT INFORMATION

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| *Address* | Department of Civil & Environmental Engineering |
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## WORK EXPERIENCE

**Assistant Research Scientist**                                                     Feb. 2023 - Present
  *University of Michigan, Ann Arbor, United States*
  Department of Civil & Environmental Engineering
**Assistant Professor**                                                     Sep 2021 - Jan. 2023
  *Eindhoven University of Technology, Eindhoven, Netherlands*
  Department of Built Environment
**Postdoctoral Fellow**                                                     Jan. 2020 - Aug. 2021
  *University of Michigan, Ann Arbor, United States*
  Research: Vehicle-Infrastructure Cooperative Development for Automated Driving
  Supervisor: Professor Yafeng Yin
**Postdoctoral Fellow**                                                     Sep. 2019 - Dec. 2019
  *University of Toronto, Toronto, Canada*
  Research: Impacts of New Technologies on Urban Freight Movement
  Supervisor: Professor Matthew J. Roorda

## EDUCATION

**Ph.D. in Civil-Transportation Engineering**                                                     2015-2019
  *University of Toronto, Toronto, Canada*
  Thesis: Impacts of Autonomous Vehicles on Parking and Congestion
  Supervisor: Professor Matthew J. Roorda

**M.Sc. in Civil-Transportation Engineering**                                                     2013-2015
  *Sharif University of Technology, Tehran, Iran*
  Thesis: Optimal Charging Facility Location for Electric Vehicles
  Supervisor: Professor Hedayat Z. Aashtiani

**B.Sc. in Civil Engineering**                                                     2007-2012
  *Sharif University of Technology, Tehran, Iran*
  Thesis: Economic Analysis of Earthquake Disasters and the Role of Transportation
  Supervisor: Professor Hossain Poorzahedy

# PUBLICATIONS

**Published Papers:**

13. Radvand, T., **Bahrami, S.**, Yin, Y., and Laberteaux, K. (2022) Curbing Cruising-as-Substitution-for-Parking in Automated Mobility. *Transportation Research Part C: Emerging Technologies.*, 143, 103853.

12. Vignon, D., Yin, Y., **Bahrami, S.**, and Laberteaux, K. (2022). Economic analysis of vehicle-infrastructure cooperative approach to automated driving. *Transportation Research Part C: Emerging Technologies*, 142, 103757.

11. Niroumand, R., **Bahrami, S.**, Aashtiani, H. Z., and Hajbabaie, A. (2022). Battery electric vehicles network equilibrium with flow-dependent energy consumption. *Transportation Research Record: Journal of the Transportation Research Board*, forthcoming.

10. **Bahrami, S.**, Nourinejad, M., Nesheli, M. M., and Yin, Y. (2022). Optimal composition of solo and pool services for on-demand ride-hailing. *Transportation Research Part E: Logistics and Transportation Review*, 161, 102680.

9. **Bahrami, S.**, and Roorda, M. J. (2022). An autonomous vehicle parking policies: A case study of the City of Toronto. *Transportation Research Part A: Policy and Practice.*, 155, 283-296.

8. **Bahrami, S.**, Vignon, D., Yin, Y., and Laberteaux, K. (2021). Parking management of automated vehicles in downtown areas. *Transportation Research Part C: Emerging Technologies*, 126, 103001.

7. **Bahrami, S.**, Nourinejad, M., Amirjamshidi, G., and Roorda, M. J. (2020). The hybrid electric vehicle routing problem: A power management model. *Transportation Research Part C: Emerging Technologies*, 111, 318-333.

6. **Bahrami, S.**, and Roorda, M. J. (2020). Optimal traffic management policies for mixed human and automated traffic flows. *Transportation Research Part A: Policy and Practice*, 135, 130-143.

5. **Bahrami, S.**, and Roorda, M. J. (2020). Autonomous vehicles relocation problem in a parking facility. *Transportmetrica A: Transport Science*, 16(3), 1604-1627.

4. Nourinejad, M., **Bahrami, S.**, and Roorda, M. J. (2018). Design of parking facilities for autonomous vehicles. *Transportation Research Part B: Methodological*, 109, 110-127.

3. **Bahrami, S.**, Aashtiani, H. Z., Nourinejad, M., and Roorda, M. J. (2017). A complementarity equilibrium model for electric vehicles with charging. *International Journal of Transportation Science and Technology*, 6(4), 255-271.

2. Jahangiriesmaili, M., **Bahrami, S.**, and Roorda, M. J. (2017). Solution of two-echelon facility location problems by approximation methods. *Transportation Research Record: Journal of the Transportation Research Board*, 2610, 1-9.

1. Nourinejad, M., Zhu, S., **Bahrami, S.**, and Roorda, M. J. (2015). Vehicle relocation and staff rebalancing in one-way carsharing systems. *Transportation Research Part E: Logistics and Transportation Review*, Vol. 81, No. 1, pp 98-113.

**Under Review papers:**

1. Nourinejad, M., **Bahrami, S.**, and Yin, Y. Optimal Investment in Driving Automation: Individual vs. Cooperative Sensing. *Submitted to Transportation Research Part B: Methodological.*

2. **Bahrami, S.**, Nourinejad, M., Yin, Y., and Wang, H. The three-sided market of on-demand delivery. *Submitted to Transportation Science.*

3. Liu, Y., **Bahrami, S.**, Feng, T., and Vries, J., Impact of crowdsourced speed check data on traffic speed: A case study of the Netherlands. *Submitted to Journal of Transportation Engineering, Part A: Systems.*

## LEADERSHIP EXPERIENCE

**Project Manager** 2020
*Potential Impacts of Automated Vehicles on Transportation and Land Use*
*Principle Investigator: Professor Yafeng Yin*
*Sponsor: Toyota Motor Engineering and Manufacturing North America*

**Project Manager** 2020
*Hybrid Optimization of Ride-Sharing Requests*
*Principle Investigator: Professor Yafeng Yin*
*Sponsor: Ford Motor Research and Advanced Engineering*

**Project Manager** 2019
*Design and Analysis of City Logistics Systems in Toronto*
*Principle Investigator: Professor Matthew J. Roorda*
*Sponsor: NSERC CRD & Purolator Express Delivery*

**Project Manager** 2019
*Applications of Drones for Last Mile Logistics*
*Principle Investigator: Professor Matthew J. Roorda*
*Sponsor: Transport Canada*

## SUPERVISED STUDENTS

| Name | Thesis Title | Degree | Period |
|------|-------------|--------|--------|
| Yutian Liu | Impact of crowdsourced data on traffic speed prediction | PhD | 2021-2022 |
| Senna Baijens | Exploring the impacts of mobility on well-being | MSc | 2021-2022 |
| Hamzeh Moghaddam | Bike-share demand prediction | MSc | 2021-2022 |
| Dennis Andreoli | Driver compliance to in-vehicle smart parking system advises | MSc | 2020-2022 |

## TEACHING EXPERIENCE

**Lecturer** 2021-2022
*Department of Built Environment, Eindhoven University of Technology*
Courses: Mobility and Logistics, Smart Cities, and Big Data for Urban Analysis.

**Lecturer** 2020-2021
*Department of Civil & Environmental Engineering, University of Michigan*
Co-teaching Transportation Network Modeling course with Dr. Yafeng Yin

**Guest Lecturer** 2018-2020
*Department of Civil Engineering, University of Toronto*
Courses: Freight Transportation and ITS Applications, and Transport I: Introduction to Urban Transportation Systems

## PROFESSIONAL SERVICE

**Examination Committee** 2021-2022
*Department of Built Environment, Eindhoven University of Technology*

| **Assessment Committee** | 2021-2022 |
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*Department of Built Environment, Eindhoven University of Technology*

| **Committee Member** | 2016-Present |
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*TRB Freight Transportation Planning and Logistics Committee (AT015)*

| **Committee Member** | 2016-2019 |
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*TRB Regional Transportation Systems Management and Operations Committee (AHB10)*

| **Special Issue Editor** | 2022 |
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*Journal of Frontiers in Future Transportation*

| **Organizing Committee** | 2020-2021 |
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*2021 International Symposium on Transportation Data and Modelling*

**Peer review** (Num. of manuscripts)

*Transportation Science (2), Transportation Research Part A (10), Transportation Research Part B (9), Transportation Research Part C (22), Transportation Research Part D (6), Transportation Research Part E (13), Transportation Research Record (17), IEEE Transactions on Intelligent Transportation Systems (12), Transportation Letters (6), Journal of Advanced Transportation (2), Journal of Traffic and Transportation Engineering (2), Journal of the Operational Research Society (1), SN Applied Sciences (1), IET Intelligent Transport Systems (1), Operations Research Forum (1).*

## MEDIA COVERAGE

- **Forbes**: How autonomous vehicles might reshape our cities.

- **University of Toronto Engineering News**: How self-driving cars could shrink parking lots.

- **Global News**: Parking lot karma: How driverless cars could change the urban landscape.

- **Gizmag**: Parking lots: Why autonomous cars could save acres of space.

- **Design Quarterly**: Self-driving cars may condense parking lots: study.

- **TechXplore**: How self-driving cars could shrink parking lots.

- **Science Daily**: How self-driving cars could shrink parking lots.

- **New Atlas**: Parking lots: Why autonomous cars could save acres of space.

- **IEEE Spectrum**: How Self-Driving Cars Might Transform City Parking.

- **REMI Network**: Self-driving cars may condense parking lots: study.

## TECHNICAL PRESENTATIONS

**Invited talks:**

1. Parking management of automated vehicles in downtown areas. Traffic flow webinars.

2. Impacts of Automated Vehicles on Parking. Department of Civil & Architectural Engineering & Mechanics at University of Arizona, Tucson, AZ.

3. Impacts of Autonomous Vehicles on Parking and Congestion. Department of Civil Engineering at university of Michigan, Ann Arbor, MI.

4. Impacts of Autonomous Vehicles on Parking and Congestion. Department of Civil Engineering at McMaster University, Hamilton, ON.

5. Autonomous Vehicle Parking Policies: A Case Study of the City of Toronto. iCity-CATTS Symposium, Toronto, ON.

6. Design of parking facilities for autonomous vehicles. 2018 TAC-ITS Canada Joint Conference & Exhibition, Niagara Falls, ON.

**Selected Podium Presentations:**

1. **Bahrami, S.** Bundle design for mobility as a service. Presented at 10th symposium of the European Association for Research in Transportation (hEART) in Leuven.

2. **Bahrami, S.**, and Roorda, M. J., Optimal Operations of an Automated Vehicle Parking Lot. Presented at Canadian Transportation Research Forum 54th Annual Conference, Vancouver, BC.

3. **Bahrami, S.**, and Roorda, M. J., Optimal Traffic Management Policies for Mixed Human and Automated Traffic Flows. presented at 98th Annual Meetings of Transportation Research Board (TRB), Washington, D.C.

4. **Bahrami, S.**, Mousavi, K., Shafiee Fard, M., and Roorda, M. J., Optimizing Delivery Location for Online Shopping. Presented at 7th METRANS International Urban Freight Conference, Long Beach, CA.

5. **Bahrami, S.**, Shafiee Fard, M., and Roorda, M. J., Optimal Deployment of Fast Charging Stations. Presented at Canadian Transportation Research Forum 52nd Annual Conference, Winnipeg, MB.

**Selected Poster Presentations:**

1. **Bahrami, S.**, Vignon, D., Yin, Y., and Laberteaux, K. Parking Management of Automated Vehicles in Downtown Areas. Presented at 100th Annual Meetings of Transportation Research Board (TRB), Washington, D.C.

2. Vignon, D., **Bahrami, S.**, Yin, Y., and Laberteaux, K. Infrastructure Investment in the Age of Automated Vehicles. Presented at 100th Annual Meetings of Transportation Research Board (TRB), Washington, D.C.

3. Meredith-Karam, P., Jiang, J., **Bahrami, S.**, and Roorda, M. J., Express Package Delivery Optimization Using On-Foot Personnel, Cargo Tricycles and Delivery Trucks. Presented at 99th Annual Meetings of Transportation Research Board (TRB), Washington, D.C.

4. Niroumand, R., **Bahrami, S.**, Aashtiani, H. Z., and Roorda, M. J., Battery Electric Vehicles Network Equilibrium with Flow-Dependent Energy Consumption. Presented at 97th Annual Meetings of Transportation Research Board (TRB), Washington, D.C.

5. Jahangiriesmaili, M., **Bahrami, S.**, and Roorda, M. J., Two-Echelon Facility Location Problems Using Approximation Methods. Presented at 96th Annual Meetings of Transportation Research Board (TRB), Washington, D.C.

6. **Bahrami, S.**, Nourinejad, M., Amirjamshidi, G., Roorda, M. J., A plugin hybrid electric vehicle routing problem with recharging. Presented at 95th Annual Meeting of the Transportation Research Board (TRB), Washington, D.C.

## HONORS AND AWARDS

**Runner-Up to Best Paper Award**                                       2019
*ITS Canada: $1,000*
**Runner-Up to Best Conference Paper Award**                            2019
*54th Canadian Transportation Research Forum: $800*
**Richard Soberman Graduate Student Fellowships**                       2017
 *$5,000*
**University of Toronto Fellowship**                               2015-2019
*$40,000/year*