

# Majbah Uddin

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## Professional Experience

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### Oak Ridge National Laboratory

R&D STAFF

Oak Ridge, TN

April 2024–Present

### Oak Ridge National Laboratory

R&D ASSOCIATE STAFF

Oak Ridge, TN

December 2021–March 2024

### Oak Ridge National Laboratory

POSTDOCTORAL RESEARCH ASSOCIATE

Oak Ridge, TN

September 2019–November 2021

### University of South Carolina

POSTDOCTORAL RESEARCH ASSOCIATE

Columbia, SC

May 2019–September 2019

### University of South Carolina

GRADUATE RESEARCH ASSISTANT

Columbia, SC

August 2013–April 2019

### University of South Carolina

GRADUATE TEACHING ASSISTANT

Columbia, SC

August 2017–April 2019

### Stamford University Bangladesh

LECTURER

Dhaka, Bangladesh

February 2013–August 2013

## Education

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### University of South Carolina

PHD IN CIVIL ENGINEERING

Columbia, SC

January 2016–May 2019

- Dissertation: *Development of Models for Road-Rail Intermodal Freight Network under Uncertainty*  
Committee: Nathan Huynh, Robert Mullen, Yuche Chen, and Pelin Pekgun
- Major: Transportation Engineering

### University of South Carolina

MASTER OF APPLIED STATISTICS

Columbia, SC

August 2016–May 2018

### University of South Carolina

MS IN CIVIL ENGINEERING

Columbia, SC

August 2013–December 2015

- Thesis: *Assessment of Classifiers for Potential Voice-Enabled Transportation Apps*  
Committee: Nathan Huynh, Robert Mullen, and Juan Caicedo
- Major: Transportation Engineering

### Bangladesh University of Engineering and Technology

BS IN CIVIL ENGINEERING

Dhaka, Bangladesh

June 2007–April 2012

## Research Areas

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Travel behavior analysis, freight transportation data and planning, transportation safety analysis, transportation data analytics, applications of machine learning methods in transportation and logistics, CO<sub>2</sub> transportation for carbon capture, utilization and storage, and operations research

## Journal Articles

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Google Scholar Metrics Citations: 608 h-index: 11 i10-index: 11

1. Melrose Pan, **Majbah Uddin**, and Hyeonsup Lim. 2024. "Understanding Electric Vehicle Ownership Using Data Fusion and Spatial Modeling." *Transportation Research Part D: Transport and Environment* 127, 104075. doi:10.1016/j.trd.2024.104075
2. **Majbah Uddin**, Nathan Huynh, and Fahim Ahmed. 2024. "Assignment of Freight Traffic in a Large-Scale Intermodal Network under Uncertainty." *Highlights of Sustainability* 3(1), 1–15. doi:10.54175/hsustain3010001.
3. Diyi Liu, Hyeonsup Lim, **Majbah Uddin**, Yuandong Liu, Lee D Han, Ho-Ling Hwang, and Shih-Miao Chin. 2024. "Improving the Accuracy of Freight Mode Choice Models: A Case Study Using the 2017 Commodity Flow Survey (CFS) Public Use File Data Set and Ensemble Learning Techniques." *Expert Systems with Applications* 240, 122478. doi:10.1016/j.eswa.2023.122478
4. Yuandong Liu, **Majbah Uddin**, Shih-Miao Chin, Ho-Ling Hwang, and Jiaoli Chen. 2024. "Examining Rail Transportation Route of Crude Oil in the US Using Crowdsourced Social Media Data." *Transportation Research Record* 2678 (1), 218–228. doi:10.1177/03611981231170632
5. **Majbah Uddin**, Melrose Pan, and Ho-Ling Hwang. 2023. "Factors Influencing Mode Choice of Adults with Travel-Limiting Disability." *Journal of Transport & Health* 33, 101714. doi:10.1016/j.jth.2023.101714
6. **Majbah Uddin**, Ho-Ling Hwang, and Md Sami Hasnine. 2023. "An Interpretable Machine Learning Framework to Understand Bikeshare Demand before and during the COVID-19 Pandemic in New York City." *Transportation Planning and Technology*. doi:10.1080/03081060.2023.2201280
7. Adam Siekmann, Vivek Suján, **Majbah Uddin**, Yuandong Liu, and Fei Xie. 2023. "Optimizing Hydrogen Fueling Infrastructure Plans on Freight Corridors for Heavy Duty Fuel Cell Electric Vehicles." *SAE International Journal of Sustainable Transportation, Energy, Environment, Policy*. doi:10.4271/13-05-01-0008
8. Hyeonsup Lim, **Majbah Uddin**, Yuandong Liu, Shih-Miao Chin, and Ho-Ling Hwang. 2022. "A Comparative Study of Machine Learning Algorithms for Industry-Specific Freight Generation Model." *Sustainability* 15367. doi:10.3390/su142215367
9. **Majbah Uddin**, Sabreena Anowar, and Naveen Eluru. 2021. "Modeling Freight Mode Choice Using Machine Learning Classifiers: A Comparative Study Using the Commodity Flow Survey (CFS) Data." *Transportation Planning and Technology* 44(5), 543–59. doi:10.1080/03081060.2021.1927306.
10. **Majbah Uddin**, and Nathan Huynh. 2020. "Injury Severity Analysis of Truck-Involved Crashes under Different Weather Conditions." *Accident Analysis & Prevention* 141, 105529. doi:10.1016/j.aap.2020.105529.
11. **Majbah Uddin**, and Nathan Huynh. 2020. "Model for Collaboration among Carriers to Reduce Empty Container Truck Trips." *Information* 11(8), 377. doi:10.3390/info11080377.
12. **Majbah Uddin**, and Nathan Huynh. 2019. "Reliable Routing of Road-Rail Intermodal Freight under Uncertainty." *Networks and Spatial Economics* 19, 929–952. doi:10.1007/s11067-018-9438-6.
13. **Majbah Uddin**, and Nathan Huynh. 2018. "Factors Influencing Injury Severity of Crashes Involving HAZMAT Trucks." *International Journal of Transportation Science and Technology* 7(1), 1–9. doi:10.1016/j.ijst.2017.06.004. **Received Most Cited Article Award**
14. **Majbah Uddin**, and Fahim Ahmed. 2018. "Pedestrian Injury Severity Analysis in Motor Vehicle Crashes in Ohio." *Safety* 4(2), 20. doi:10.3390/safety4020020. **Received Best Paper Award**
15. **Majbah Uddin**, Robert Allen, Nathan Huynh, Jose Vidal, Kevin Taaffe, Lawrence Fredendall, and Joel Greenstein. 2018. "Operating Room Turnover Time Autocorrelation while using Mobile Applications." *mHealth* 4, 38. doi:10.21037/mhealth.2018.09.07.
16. **Majbah Uddin**, Robert Allen, Nathan Huynh, Jose Vidal, Kevin Taaffe, Lawrence Fredendall, and Joel Greenstein. 2018. "Assessing Operating Room Turnover Time via the Use of Mobile Application." *mHealth* 4, 12. doi:10.21037/mhealth.2018.05.03.
17. **Majbah Uddin**, and Nathan Huynh. 2017. "Truck-Involved Crashes Injury Severity Analysis for Different Lighting Conditions on Rural and Urban Roadways." *Accident Analysis & Prevention* 108, 44–55. doi:10.1016/j.aap.2017.08.009.
18. Mostaqur Rahman, **Majbah Uddin**, and Sarah Gassman. 2017. "Pavement Performance Evaluation Models for South Carolina." *KSCE Journal of Civil Engineering* 21(7), 2695–2706. doi:10.1007/s12205-017-0544-7.
19. **Majbah Uddin**, Robert Allen, Nathan Huynh, Jose Vidal, Kevin Taaffe, Lawrence Fredendall, and Joel Greenstein. 2017. "Effectiveness of a Countdown Timer in Reducing OR Turnover Time." *Journal of Mobile Technology in Medicine* 6(3), 25–33. doi:10.7309/jmtm.6.3.5.
20. **Majbah Uddin**, and Nathan Huynh. 2016. "Routing Model for Multicommodity Freight in an Intermodal Network under Disruptions." *Transportation Research Record* 2548, 71–80. doi:10.3141/2548-09.
21. **Majbah Uddin**, and Nathan Huynh. 2015. "Freight Traffic Assignment Methodology for Large-Scale Road-Rail Intermodal Networks." *Transportation Research Record* 2477, 50–57. doi:10.3141/2477-06.
22. **Majbah Uddin**, Nathan Huynh, Jose Vidal, Kevin Taaffe, Lawrence Fredendall, and Joel Greenstein. 2015. "Evaluation of Google's Voice Recognition and Sentence Classification for Health Care Applications." *Engineering Management Journal* 27(3), 152–162. doi:10.1080/10429247.2015.1054752.

## Conference Papers

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1. Melrose Pan, Christa Brelsford, and **Majbah Uddin**. 2024. "A Spatial-Temporal Analysis of Travel Time Gap and Inequality Between Transit and Vehicles." *Proceedings of the International Conference on Transportation and Development*.

2. **Majbah Uddin**, Yuandong Liu, and Hyeonsup Lim. 2023. “Exploring the Effects of Population and Employment Characteristics on Truck Flows: An Analysis of NextGen NHTS Origin-Destination Data.” *Proceedings of the International Conference on Transportation and Development*.
3. Yuandong Liu, and **Majbah Uddin**. 2023. “Mobility Gaps between Low-Income and Not Low-Income Households: A Case Study in New York State.” *Proceedings of the International Conference on Transportation and Development*.
4. **Majbah Uddin**, Yuandong Liu, Fei Xie, Vivek Sujan, and Adam Siekmann. 2022. “Modeling Freight Traffic Demand and Highway Networks for Hydrogen Fueling Station Planning: A Case Study of U.S. Interstate 75 Corridor.” *Proceedings of the Annual International Green Energy Conference*.
5. Yuandong Liu, Adam Siekmann, Vivek Sujan, **Majbah Uddin**, Fei Xie, and Shawn Ou. 2022. “Providing Levelized Cost and Waiting Time Inputs for HDV Hydrogen Refueling Station Planning: A Case Study of U.S. I-75 Corridor.” *Proceedings of the Annual International Green Energy Conference*.
6. Gurcan Comert, Charles Pierce, Zulfikar Berk, Nathan Huynh, Robert Petrusis, and **Majbah Uddin**. 2020. “Delivering Contextual Knowledge and Critical Skills of Disruptive Technologies through Problem-Based Learning in Research Experiences for Undergraduates Setting.” *Proceedings of the American Society for Engineering Education’s Virtual Annual Conference*.

## Book Chapters

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1. Nathan Huynh, **Majbah Uddin**, and Chu Minh. 2024. “Data Analytics for Intermodal Freight Transportation Applications.” M. Chowdhury, A. Apon, and K. Dey, eds. *Data Analytics for Intelligent Transportation Systems*, 2nd edition, Chapter 10, Elsevier Science. eBook ISBN: 9780443138799
2. Nathan Huynh, **Majbah Uddin**, and Chu Minh. 2017. “Data Analytics for Intermodal Freight Transportation Applications.” M. Chowdhury, A. Apon, and K. Dey, eds. *Data Analytics for Intelligent Transportation Systems*, 1st edition, Chapter 10, Elsevier Science. doi:10.1016/B978-0-12-809715-1.00010-9

## Technical Reports

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1. Melrose Pan, Latif Patwary, and **Majbah Uddin**. *Travel Patterns and Characteristics of Population in Rural Areas of New York State*. ORNL/SPR-2024/3216. Report submitted to New York State Department of Transportation, 2024. doi:10.2172/2394748.
2. **Majbah Uddin**, Melrose Pan, Yuandong Liu, and Tim Reuscher. *Travel Patterns and Characteristics of Low-Income Population in New York State: 2017 Update*. ORNL/TM-2023/2942. Report submitted to New York State Department of Transportation, 2024. doi:10.2172/2301664.
3. Melrose Pan, and **Majbah Uddin**. *The Utility of National Household Travel Survey Add-on Data for New York State*. ORNL/SPR-2024/3215. Report submitted to New York State Department of Transportation, 2024.
4. Melrose Pan, and **Majbah Uddin**. *A Comparison of Next-Generation National Household Travel Survey Origin-Destination Data and Replica Trip Data*. ORNL/TM-2023/2920. Report submitted to New York State Department of Transportation, 2023.
5. Melrose Pan, **Majbah Uddin**, Alec Biehl, and Ho-Ling Hwang. *Alternative Fuel Vehicle Usage and Owner Demographics in New York State*. ORNL/TM-2023/2865. Report submitted to New York State Department of Transportation, 2023. doi:10.2172/1996693.
6. **Majbah Uddin**, and Hyeonsup Lim. *Freight Flows in Onondaga County, New York: A Comparison of Three Data Sources*. ORNL/TM-2022/2743. Report submitted to New York State Department of Transportation, 2023.
7. Hyeonsup Lim, **Majbah Uddin**, and Yuandong Liu. *Quick Validation Plan for FAF5 Truck Network Assignment*. ORNL/TM-2022/2804. Report submitted to US Department of Transportation, 2022.
8. **Majbah Uddin**, and Ho-Ling Hwang. *Travel Statistics for New York State Department of Transportation Regions*. ORNL/TM-2021/2455. Report submitted to New York State Department of Transportation, 2022.
9. Yuandong Liu, Ho-Ling Hwang, **Majbah Uddin**, Tim Reuscher, and Shih-Miao Chin. *Travel Patterns and Characteristics of Elderly Population in New York State: 2017 Update*. ORNL/TM-2021/2614. Report submitted to New York State Department of Transportation, 2022. doi:10.2172/1899831.
10. Ho-Ling Hwang, Hyeonsup Lim, Shih-Miao Chin, **Majbah Uddin**, Alec Biehl, Fei Xie, Stephanie Hargrove, Yuandong Liu, and Ross Wang. *Freight Analysis Framework Version 5 (FAF5) Base Year 2017 Data Development Technical Report*. ORNL/TM-2021/2154. Report submitted to US Department of Transportation, 2021. doi:10.2172/1844893.
11. **Majbah Uddin**, Ho-Ling Hwang, Yuandong Liu, and Tim Reuscher. *County-Level Travel Statistics for Capital District Transportation Committee*. ORNL/TM-2021/2097. Report submitted to New York State Department of Transportation, 2021.
12. Ho-Ling Hwang, Tim Reuscher, and **Majbah Uddin**. *Emission Factors Profile for New York State: Travel Statistics for Regional Air Quality Modeling, based on 2017 National Household Travel Survey Data*. ORNL/TM-2021/2093. Report submitted to New York State Department of Transportation, 2021.
13. **Majbah Uddin**, Yuandong Liu, Ho-Ling Hwang, and Shih-Miao Chin. *Summary of 2017 National Household Travel Survey Statistics: New York City Regional Economic Development Council*. ORNL/TM-2021/1936. Report submitted to New York State Department of Transportation, 2021.
14. **Majbah Uddin**, Yuandong Liu, Ho-Ling Hwang, and Shih-Miao Chin. *Summary of 2017 National Household Travel Survey Statistics: Mohawk Valley Regional Economic Development Council*. ORNL/TM-2021/1953. Report submitted to New York State Department of Transportation, 2021.
15. **Majbah Uddin**, Yuandong Liu, Ho-Ling Hwang, and Shih-Miao Chin. *Summary of 2017 National Household Travel Survey Statistics: Mid-Hudson Regional Economic Development Council*. ORNL/TM-2021/1952. Report submitted to New York State Department of Transportation, 2021.
16. **Majbah Uddin**, Yuandong Liu, Ho-Ling Hwang, and Shih-Miao Chin. *Summary of 2017 National Household Travel Survey Statistics: Long Island*

- Regional Economic Development Council*. ORNL/TM-2021/1951. Report submitted to New York State Department of Transportation, 2021.
17. **Majbah Uddin**, Yuandong Liu, Ho-Ling Hwang, and Shih-Miao Chin. *Summary of 2017 National Household Travel Survey Statistics: Finger Lakes Regional Economic Development Council*. ORNL/TM-2021/1950. Report submitted to New York State Department of Transportation, 2021.
  18. **Majbah Uddin**, Yuandong Liu, Ho-Ling Hwang, and Shih-Miao Chin. *Summary of 2017 National Household Travel Survey Statistics: Central New York Regional Economic Development Council*. ORNL/TM-2021/1949. Report submitted to New York State Department of Transportation, 2021.
  19. **Majbah Uddin**, Yuandong Liu, Ho-Ling Hwang, and Shih-Miao Chin. *Summary of 2017 National Household Travel Survey Statistics: Capital Region Regional Economic Development Council*. ORNL/TM-2021/1948. Report submitted to New York State Department of Transportation, 2021.
  20. Yuandong Liu, **Majbah Uddin**, Ho-Ling Hwang, and Shih-Miao Chin. *Summary of 2017 National Household Travel Survey Statistics: North Country Regional Economic Development Council*. ORNL/TM-2021/1954. Report submitted to New York State Department of Transportation, 2021.
  21. Yuandong Liu, **Majbah Uddin**, Ho-Ling Hwang, and Shih-Miao Chin. *Summary of 2017 National Household Travel Survey Statistics: Southern Tier Regional Economic Development Council*. ORNL/TM-2021/1955. Report submitted to New York State Department of Transportation, 2021.
  22. Yuandong Liu, **Majbah Uddin**, Ho-Ling Hwang, and Shih-Miao Chin. *Summary of 2017 National Household Travel Survey Statistics: Western New York Regional Economic Development Council*. ORNL/TM-2021/1956. Report submitted to New York State Department of Transportation, 2021.
  23. Yuandong Liu, **Majbah Uddin**, Shih-Miao Chin, Ho-Ling Hwang, and Hyeonsup Lim. *Data Sources and Methodologies for Compiling Pipeline Intermodal Terminal Dataset*. ORNL/TM-2021/2007. Report submitted to Bureau of Transportation Statistics, US Department of Transportation, 2021.
  24. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Watertown Jefferson County Area Transportation Council: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1690. Report submitted to New York State Department of Transportation, 2020.
  25. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Herkimer-Oneida Counties Transportation Study: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1689. Report submitted to New York State Department of Transportation, 2020.
  26. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Syracuse Metropolitan Transportation Council: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1688. Report submitted to New York State Department of Transportation, 2020.
  27. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Statewide: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1687. Report submitted to New York State Department of Transportation, 2020.
  28. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Small Urban Areas: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1686. Report submitted to New York State Department of Transportation, 2020.
  29. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Small Rural Areas: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1685. Report submitted to New York State Department of Transportation, 2020.
  30. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Genesee Transportation Council: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1684. Report submitted to New York State Department of Transportation, 2020.
  31. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Putnam, Rockland, Westchester: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1683. Report submitted to New York State Department of Transportation, 2020.
  32. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Dutchess County Transportation Council: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1682. Report submitted to New York State Department of Transportation, 2020.
  33. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *New York Metropolitan Transportation Council: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1681. Report submitted to New York State Department of Transportation, 2020.
  34. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *New York City – Bronx, Kings, Queens, New York, Richmond: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1680. Report submitted to New York State Department of Transportation, 2020.
  35. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Orange County Transportation Council: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1679. Report submitted to New York State Department of Transportation, 2020.
  36. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Nassau, Suffolk: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1678. Report submitted to New York State Department of Transportation, 2020.
  37. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Manhattan: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1677. Report submitted to New York State Department of Transportation, 2020.
  38. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Ulster County Transportation Council: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1676. Report submitted to New York State Department of Transportation, 2020.
  39. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Ithaca-Tompkins County Transportation Council: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1675. Report submitted to New York State Department of Transportation, 2020.
  40. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Elmira-Chemung Transportation Council: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1673. Report submitted to New York State Department of Transportation, 2020.
  41. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Greater Buffalo-Niagara Regional Transportation Council: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1672. Report submitted to New York State Department of Transportation, 2020.

42. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Binghamton Metropolitan Transportation Study: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1667. Report submitted to New York State Department of Transportation, 2020.
43. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Capital District Transportation Committee: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1665. Report submitted to New York State Department of Transportation, 2020.
44. Ho-Ling Hwang, Tim Reuscher, Yuandong Liu, **Majbah Uddin**, and Alec Biehl. *Adirondack-Glens Falls Transportation Council: 2017 National Household Travel Survey, New York Add-On*. ORNL/TM-2020/1674. Report submitted to New York State Department of Transportation, 2020.
45. Nathan Huynh, **Majbah Uddin**, and Samaneh Shiri. *Evaluation of Jamar Black Cat Radar Recorders*. Report submitted to South Carolina Department of Transportation, 2017.

## Invention Disclosures/Software Copyright

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1. **Majbah Uddin**, Robin Clark, Michael Hilliard, Mathew Langholtz, Erin Webb, and Josh Thompson. 2023. "Methods for Analyzing Multimodal Transportation of CO<sub>2</sub> for CCUS." *Invention ID: 202305319*.
2. Robin Clark and **Majbah Uddin**. 2024. "Agent-Based Simulation Model for Analyzing Multimodal Transportation of CO<sub>2</sub> for CCUS." *U.S. Copyright No. 90000295*.
3. Hyeonsup Lim, **Majbah Uddin**, and Yuandong Liu. 2023. "Non-Stop Freight Network." *Invention ID: 202305383*.
4. Hyeonsup Lim, **Majbah Uddin**, and Yuandong Liu. 2023. "Electronic-Signal-based Super-fast Shortest Path Finder." *Invention ID: 202305384*.

## Presentations

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1. Latif Patwary, **Majbah Uddin**, Pankaj Dahal, Melrose Pan, and Hyeonsup Lim. "Estimating Gasoline Consumption for the Recreational Boating Sector in the U.S." *Oak Ridge Postdoctoral Association Research Symposium*, Oak Ridge, TN, July 2024.
2. Melrose Pan, Christa Brelsford, and **Majbah Uddin**. "A Spatial-Temporal Analysis of Travel Time Gap and Inequality Between Transit and Vehicles." *International Conference on Transportation and Development*, Atlanta, GA, June 2024.
3. **Majbah Uddin**, and Robin Clark. "Multimodal Transportation of CO<sub>2</sub> to Support Large-Scale Carbon Capture, Utilization and Storage." *Conference on Innovations in Climate Resilience*, Washington, DC, April 2024.
4. Diyi Liu, Hyeonsup Lim, **Majbah Uddin**, Yuandong Liu, Lee D Han, Ho-Ling Hwang, and Shih-Miao Chin. "Improving the Accuracy of Freight Mode Choice Models: A Case Study Using the 2017 Commodity Flow Survey (CFS) Public Use File Data Set and Ensemble Learning Techniques." *Transportation Research Board Annual Meeting*, Washington, DC, January 2024.
5. Melrose Pan, and **Majbah Uddin**. "Temporal Evolution of Travel Time Gap Between Public Transit and Personal Vehicle and Their Inequality: An Analysis using Census Transportation Planning Program (CTPP) Data." *Transportation Research Board Annual Meeting*, Washington, DC, January 2024.
6. **Majbah Uddin**, Melrose Pan, and Ho-Ling Hwang. "Unraveling Factors Influencing Mode Choice of Adults with Travel-Limiting Disabilities using Random Parameters Logit Modeling." *Transportation Research Board Annual Meeting*, Washington, DC, January 2024.
7. Melrose Pan, **Majbah Uddin**, and Hyeonsup Lim. "Evaluating Geospatial Patterns of Electric Vehicle Ownership Using Multi-Scale Geographically Weighted Method." *Transportation Research Board Annual Meeting*, Washington, DC, January 2024.
8. Robin Clark, and **Majbah Uddin**. "An Agent-Based Tool for Carbon Capture, Utilization and Storage Transportation Flows and Infrastructure." *ORNL Software and Data Expo*, Oak Ridge, TN, September 2023.
9. **Majbah Uddin**, Robin Clark, Michael Hilliard, Josh Thompson, Matt Langholtz, and Erin Webb. "Modeling a Gigaton CO<sub>2</sub> Economy." *ORNL LDRD Poster Fair*, Oak Ridge, TN, September 2023.
10. Diyi Liu, Hyeonsup Lim, **Majbah Uddin**, Vivek Sujan, Adam Siekmann, and Amy Moore. "A Heuristic Method to Sequentially Impute Vehicle Class and Weight for U.S. Highway Network Truck Flows." *TRB Innovations in Freight Data Workshop*, Washington, DC, September 2023.
11. **Majbah Uddin**, Ho-Ling Hwang, and Md Sami Hasnine. "Understanding bikeshare trip demand in New York City: An application of interpretable machine learning framework." *ORNL AI Expo*, Oak Ridge, TN, September 2023.
12. **Majbah Uddin**, Yuandong Liu, and Hyeonsup Lim. "Exploring the Effects of Population and Employment Characteristics on Truck Flows: An Analysis of NextGen NHTS Origin-Destination Data." *International Conference on Transportation and Development*, Austin, TX, June 2023.
13. Yuandong Liu, and **Majbah Uddin**. "Mobility Gaps between Low-Income and Non-Low-Income Households: A Case Study in New York State." *International Conference on Transportation and Development*, Austin, TX, June 2023.
14. Melrose Pan, and **Majbah Uddin**. "Identifying Travel Patterns of Low-Income Populations in New York State." *Oak Ridge Postdoctoral Association Research Symposium*, Oak Ridge, TN, June 2023.
15. Robin Clark, **Majbah Uddin**, Michael Hilliard, Josh Thompson, Matthew Langholtz, and Erin Webb. "Modeling Multimodal CO<sub>2</sub> Transportation for Carbon Capture, Utilization, and Storage." *Annual Modeling and Simulation Conference*, Ontario, Canada, May 2023.
16. Yuandong Liu, **Majbah Uddin**, Shih-Miao Chin, Ho-Ling Hwang, and Jiaoli Chen. "Examining Rail Transportation Route of Crude Oil in the US using Crowdsourced Social Media Data." *Transportation Research Board Annual Meeting*, Washington, DC, January 2023.

17. Hyeonsup Lim, **Majbah Uddin**, Yuandong Liu, Shih-Miao Chin, and Ho-Ling Hwang. "Multi-Output Chaining for Time Series Forecasting to Estimate Impact of Supply Chain Disruption: The Case of Russia's Invasion of Ukraine on U.S. Imports and Exports." *Transportation Research Board Annual Meeting*, Washington, DC, January 2023.
18. Yuandong Liu, **Majbah Uddin**, Ho-Ling Hwang, and Shih-Miao Chin. "Exploring the Transportation Mobility Disparities between Elderly and Non-Elderly Population in the State of New York using Census Transportation Planning Products and National Household Travel Survey Data." *Transportation Research Board Annual Meeting*, Washington, DC, January 2023.
19. **Majbah Uddin**, Ho-Ling Hwang, and Md Sami Hasnine. "An Interpretable Machine Learning Framework to Understand Bikeshare Demand before and during the COVID-19 Pandemic in New York City." *Transportation Research Board Annual Meeting*, Washington, DC, January 2023.
20. **Majbah Uddin**, Ho-Ling Hwang, and Shih-Miao Chin. "Sentiment Analytics as Part of Public Participation in the Transportation Scenario Planning." *TRB Conference on Scenario Planning in Transportation*, Washington, DC, September 2022.
21. Yuandong Liu, **Majbah Uddin**, Ho-Ling Hwang, and Tim Reuscher. "Travel Patterns and Characteristics of Elderly Population in the State of New York." *Oak Ridge Postdoctoral Association Research Symposium*, Oak Ridge, TN, July 2022. **Poster Presentation Award**
22. Hyeonsup Lim, **Majbah Uddin**, Yuandong Liu, Shih-Miao Chin, and Ho-Ling Hwang. "A Comparative Study of Machine Learning Algorithms for an Industry-Specific Freight Generation Model." *Transportation Research Board Annual Meeting*, Washington, DC, January 2022.
23. **Majbah Uddin**, Ho-Ling Hwang, and Shih-Miao Chin. "Evaluating Public Perception Towards Autonomous Goods Delivery Services Using Social Media Data." *TRB Innovations in Freight Data Workshop*, Virtual, September 2021.
24. Yuandong Liu, **Majbah Uddin**, Shih-Miao Chin, and Ho-Ling Hwang. "Estimation of Crude Oil Movements for the Freight Analysis Framework using Data Fusion." *TRB Innovations in Freight Data Workshop*, Virtual, September 2021.
25. Hyeonsup Lim, Chieh Wang, Ho-Ling Hwang, Shih-Miao Chin, and **Majbah Uddin**. "A Two-step Approach for Truck Load Factor Estimation Based on the Travel Monitoring Analysis System Data Using K-Means Clustering and Gaussian Mixture Model." *TRB Innovations in Freight Data Workshop*, Virtual, September 2021.
26. **Majbah Uddin**, and Ho-Ling Hwang. "Access to Public Transportation in Rural New York State: An Equity Analysis Using 2017 NHTS Data." *TRB Conference on Advancing Transportation Equity*, Virtual, September 2021.
27. Michael Hilliard, Alec Biehl, Ho-Ling Hwang, Byung Park, Chieh Wang, Fei Xie, and **Majbah Uddin**. "Evaluating Inequitable Disruptions to Commuters using a Synthetic Agent-based Simulation: A Case Study of the COVID-19 Pandemic in New York City." *TRB Conference on Advancing Transportation Equity*, Virtual, September 2021.
28. Alec Biehl, **Majbah Uddin**, and Ho-Ling Hwang. "Assessing Transportation Equity in Rural New York Counties." *TRB Conference on Advancing Transportation Equity*, Virtual, September 2021.
29. **Majbah Uddin**, Yuandong Liu, and Ho-Ling Hwang. "Visualizing Travel Patterns in New York State Regional Economic Development Council Regions." *Oak Ridge Postdoctoral Association Research Symposium*, Virtual, July 2021.
30. Yuandong Liu, **Majbah Uddin**, Shih-Miao Chin, Ho-Ling Hwang, and Hyeonsup Lim. "Compilation of the U.S. Pipeline Intermodal Terminal Dataset." *Oak Ridge Postdoctoral Association Research Symposium*, Virtual, July 2021.
31. **Majbah Uddin**, and Ho-Ling Hwang. "Factors Influencing Mode Choice of Adults with Travel-Limiting Disability." *International Conference on Transportation & Development*, Virtual, June 2021.
32. **Majbah Uddin**, Shih-Miao Chin, Ho-Ling Hwang, Chieh Wang, and Hyeonsup Lim. "Assessing the Potential Impact of Lane-Tracking Technology for Autonomous Vehicles on Traffic Safety." *International Conference on Transportation & Development*, Virtual, June 2021.
33. Hyeonsup Lim, Yuandong Liu, **Majbah Uddin**, Ho-Ling Hwang, and Shih-Miao Chin. "Development of U.S. Nationwide Freight Flow and Infrastructure Data." *ORNL Software and Data Expo*, Virtual, May 2021. **Received Best Demo Award**
34. **Majbah Uddin**, and Ho-Ling Hwang. "A Bi-Objective Optimization Framework For Municipal Solid Waste Transportation." *INFORMS Annual Meeting*, Virtual, Nov 2020.
35. **Majbah Uddin**, and Shih-Miao Chin. "Movements of Construction and Demolition Debris in the United States." *Annual Vanderbilt Postdoctoral Association Symposium*, Virtual, October 2020.
36. **Majbah Uddin**, Ho-Ling Hwang, and Stephanie Hargrove. "Movements of Municipal Solid Waste in the United States." *Oak Ridge Postdoctoral Association Research Symposium*, Virtual, July 2020.
37. **Majbah Uddin**, Shih-Miao Chin, and Ho-Ling Hwang. "Multimodal Transportation Flows of Crude Oil in the United States." *Oak Ridge Postdoctoral Association Research Symposium*, Virtual, July 2020.
38. **Majbah Uddin**, Sabreena Anowar, and Naveen Eluru. "Modeling Freight Mode Choice Using Machine Learning Classifiers: A Comparative Study Using the Commodity Flow Survey Data." *TRB Annual Meeting*, Washington, DC, January 2020.
39. **Majbah Uddin**, and Nathan Huynh. Injury Severity "Analysis of Truck-Involved Crashes under Different Weather Conditions." *TRB Annual Meeting*, Washington, DC, January 2020.
40. **Majbah Uddin**, and Nathan Huynh. "Model for Collaboration Among Carriers in Domestic Intermodal Freight Transport." *TRB Annual Meeting*, Washington, DC, January 2020.
41. **Majbah Uddin**, Nathan Huynh, and Fahim Ahmed. "Assignment of Freight Traffic in a Large-Scale Intermodal Network under Uncertainty." *TRB Annual Meeting*, Washington, DC, January 2019.

42. **Majbah Uddin.** “Road-Rail Intermodal Freight Transport under Network Uncertainty: Development of Routing Models and Estimation of Environmental Impact.” *VREF Advanced Studies Institutes on Sustainable Urban Freight Systems*, Troy, NY, August 2018.
43. **Majbah Uddin**, and Nathan Huynh. “Assessing the Impact of Collaboration among Truck Carriers in Intermodal Freight Transportation.” *5th Biennial Marine Transportation System Research & Development Conference*, Washington, DC, June 2018. **Student honor panel presentation**
44. **Majbah Uddin**, Nathan Huynh, Lawrence Fredendall, and Kevin Taaffe. “Visualizing the Flow of Patients on the Day of Surgery.” *POMS Annual Conference*, Houston, TX, May 2018.
45. **Majbah Uddin**, and Nathan Huynh. “Reliable Routing of Road-Rail Intermodal Freight under Uncertainty.” *TRB Annual Meeting*, Washington, DC, January 2018.
46. **Majbah Uddin**, and Nathan Huynh. “Factors Influencing Injury Severity of Crashes Involving HAZMAT Trucks.” *TRB Annual Meeting*, Washington, DC, January 2018.
47. **Majbah Uddin**, and Fahim Ahmed. “Analysis of Pedestrian Injury Severity in Motor Vehicle Crashes in Ohio.” *TRB Annual Meeting*, Washington, DC, January 2018.
48. **Majbah Uddin**, and Nathan Huynh. “Truck-Involved Crashes Injury Severity Analysis for Different Lighting Conditions on Rural and Urban Roadways.” *TRB Annual Meeting*, Washington, DC, January 2017.
49. **Majbah Uddin**, and Nathan Huynh. “Reliable Routing of Multicommodity Road-Rail Intermodal Freight under Uncertainty.” *INFORMS Annual Meeting*, Nashville, TN, November 2016.
50. **Majbah Uddin**, Nathan Huynh, Jose Vidal, Kevin Taaffe, Lawrence Fredendall, and Joel Greenstein. “Evaluation of Google’s Voice Recognition and Sentence Classification for Health Care Applications.” *INFORMS Annual Meeting*, Nashville, TN, November 2016. **Semi-finalist in poster competition.**
51. **Majbah Uddin**, and Nathan Huynh. “A Routing Model for Multicommodity Freight in an Intermodal Network under Disruptions.” *INFORMS Annual Meeting*, Philadelphia, PA, November 2015.
52. **Majbah Uddin**, and Nathan Huynh. “Freight Traffic Assignment Methodology for Large-Scale Road-Rail Intermodal Networks.” *TRB Annual Meeting*, Washington, DC, January 2015.

## Invited Talk

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1. **Majbah Uddin.** 2019. “Assessing Service Life of Traffic Signs in South Carolina.” *ASCE Midlands Branch Meeting*, Columbia, SC.

## Editorial/Peer Review

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Reviewed 200+ papers for 20+ journals and conferences

**Panel Member** *National Cooperative Highway Research Program Project, Integrating Resiliency into Transportation System Operations*

**Review Editor** *Frontiers in Future Transportation*

**Journal Referee** *Scientific Reports, Transportation Research Record, IEEE Access, Journal of Advanced Transportation, Sustainability, Accident Analysis & Prevention (Outstanding Reviewer in 2018), Journal of Safety Research, Traffic Injury Prevention, International Journal of Environmental Research and Public Health, Applied Sciences, Information, PeerJ, Vehicles, International Journal of Injury Control and Safety Promotion, International Journal of Pavement Engineering, International Journal of Disaster Risk Reduction, IEEE Transactions on Intelligent Transportation Systems, International Journal of Urban Sciences*

**Conference Referee** *Transportation Research Board Annual Meeting, International Conference on Transportation & Development, World Conference on Transport Research*

## Professional Services

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- 2024 **Session Chair**, Freight Systems and Marine Transportation Work in Progress: A Lectern-Poster Session, TRB Annual Meeting
- 2024 **Session Chair**, Committee Meeting, Freight Systems and Marine Group Young Members Council, TRB Annual Meeting
- 2023 **Session Organizer**, The Future of Freight Panel, ORNL Smoky Mountains Mobility Conference
- 2023 **Session Chair**, Freight Systems and Marine Transportation Work in Progress: A Lectern-Poster Session, TRB Annual Meeting
- 2023 **Session Chair**, Committee Meeting, Freight Systems and Marine Group Young Members Council, TRB Annual Meeting
- 2016–18 **Vice President**, Institute of Transportation Engineers, University of South Carolina Student Chapter
- 2015 **Member**, University of South Carolina Civil Engineering Department, Ad Hoc Committee for Enhanced Doctoral Experiences

## Media Coverage

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2023	<b>Safe Train Transport</b> , ORNL News article
2023	<b>Photo-sharing website powers train disaster maps</b> , WVLT 8 feature
2023	<b>ORNL uses geotagged to recreate train routes to help with incidents</b> , WATE 6 feature
2022	<b>Transportation Influencer</b> , TR News Number 338

## Honors and Awards

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2024	<b>Core Values Nomination for Teamwork</b> , ORNL
2023	<b>Core Values Nomination for Service</b> , ORNL
2022	<b>Poster Presentation Award</b> , Oak Ridge Postdoctoral Association Research Symposium
2021	<b>Best Demo Award</b> , ORNL Software and Data Expo
2021	<b>Postdoc Development Path</b> , ORNL Employee and Organizational Development
2020	<b>Most Cited Article Award</b> , International Journal of Transportation Science and Technology
2020	<b>Best Paper Award</b> , <i>Safety</i>
2019	<b>Breakthrough Graduate Scholar Award</b> , University of South Carolina
2019	<b>M. Bert Storey Endowed Graduate Fellowship</b> , University of South Carolina
2018	<b>Participant</b> , Volvo Research and Educational Foundations Advanced Studies Institutes on Sustainable Urban Freight Systems, Rensselaer Polytechnic Institute
2018	<b>Student Honor Panel</b> , TRB Marine Transportation System Research and Development Conference
2018	<b>Preparing Future Faculty Award</b> , Center for Teaching Excellence, University of South Carolina
2018	<b>M. Bert Storey Endowed Graduate Fellowship</b> , University of South Carolina
2017	<b>Highway Safety Information System Excellence in Highway Safety Data Award</b> , Federal Highway Administration
2017	<b>M. Bert Storey Endowed Graduate Fellowship</b> , University of South Carolina
2016	<b>Highway Safety Data Research Paper Competition Award</b> , Federal Highway Administration
2016	<b>Graduate School Travel Grant</b> , University of South Carolina
2016	<b>M. Bert Storey Endowed Graduate Fellowship</b> , University of South Carolina
2015	<b>Graduate School Travel Grant</b> , University of South Carolina
2015	<b>R. L. Sumwalt, Sr. Endowed Travel Fund</b> , University of South Carolina
2014	<b>Bangladesh-Sweden Trust Fund</b> , Travel Grant Award
2008–2009	<b>Dean's List Scholarship</b> , Bangladesh University of Engineering and Technology
2008–2009	<b>University Merit Scholarship</b> , Bangladesh University of Engineering and Technology

## Mentoring

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July 2024 – Present	<b>Michael Han</b> , GRO Student
May – August, 2024	<b>Cameron James Swapp</b> , DOE SULI Internship
May – August, 2024	<b>Samuel Arhin</b> , DOE SULI Internship
February 2024 – Present	<b>Dr. A Latif Patwary</b> , Postdoctoral Research Associate
February 2023 – Present	<b>Dr. Meiyu (Melrose) Pan</b> , Postdoctoral Research Associate
May – August, 2022	<b>Eric Orozco</b> , GEM Fellow Internship
May – August, 2022	<b>Thomas Vance</b> , DOE SULI Internship



## Professional Affiliations

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- 2024–Present **Senior Member**, Institute of Electrical and Electronics Engineers (IEEE)
- 2023–Present **Member**, ASCE T&DI Freight & Logistics Committee
- 2023–Present **Corresponding Member**, ASCE T&DI Artificial Intelligence In Transportation Committee
- 2023–Present **Member**, TRB Standing Committee on Agriculture and Food Transportation
- 2021–Present **Chair**, Freight & Marine Subcommittee of Young Members Coordinating Council, TRB
- 2021–Present **Member**, TRB Standing Committee on Freight Transportation Data
- 2021–Present **Member**, TRB Subcommittee on Port Performance
- 2020–2024 **Member**, TRB Standing Committee on Intermodal Freight Transport
- 2020–Present **Member**, TRB Joint Subcommittee on Supply Chain Resilience
- 2019–Present **Associate Member**, American Society of Civil Engineers (ASCE)
- 2016–2023 **Member**, Institute for Operations Research and the Management Sciences
- 2020–2022 **Member**, TRB Joint Subcommittee on Intermodal Freight Terminal Design and Operations
- 2016–2019 **Member**, TRB Standing Committee on Intermodal Freight Terminal Design and Operations

## Certification

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- 2016–Present **Engineer in Training**, South Carolina Board of Registration for Professional Engineers and Surveyors