

Hyoshin (John) Park, PhD, Assistant Professor (Tenure-Track)

Department of Computational Data Science and Engineering

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EDUCATION

Ph.D.	Civil & Environmental Engineering	University of Maryland	2010-2016
M.S.	Transportation Engineering	Yonsei University	2005-2007
B.S.	Urban Planning & Engineering (Transportation focus)	Yonsei University	2001-2005
B.S.	Physics (Double Major)	Yonsei University	2001-2005

APPOINTMENTS

Visiting Professor	NASA Jet Propulsion Laboratory (JPL) Robotics Group	2018, 2019, 2021	May-August
Assistant Professor	North Carolina A&T State University (NCA&T)	2017-	
Graduate Faculty	University of Massachusetts Amherst	2017-2019	
Research Associate	University of Massachusetts Amherst	2016-2017	
Research Assistant	Turner-Fairbank Highway Research Center, FHWA	2014-2015	
Research Scientist	Urban Planning & Engineering, Yonsei University	2010	
Traffic Engineer	Chungsuk Engineering Co.Ltd.	2007-2010	

HONORS & AWARDS & HIGHLIGHTS

- Associate Editor, IEEE Transactions on Intelligent Transportation Systems
- USDOT University Transportation Centers Program July 2020 Newsletter [[SPOTLIGHT](#)]
- NCDOT 2020 Summit Poster Competition Winner Coauthor with PhD Candidate Justice Darko [[POSTER](#)]
- NASA JPL Recognition, Information Gained at Ground Level [[JPL PRESS RELEASE](#)] [[CHANCELLOR'S TWEET](#)]
- UAS-based Active Hurricane Sensing [[SPECTRUM NEWS RELEASE NATIONWIDE](#)] [[NCA&T PRESS RELEASE](#)]
- 2nd Winner INFORMS 2020 Annual Meeting MIF student poster competition (Mr. Pugh) [[HONORABLE MENTION](#)]
- Advising Outstanding Student of the Year 2020 (Nigel Pugh), US Department of Transportation (DOT) UTC
- Advising Outstanding Student of the Year 2019 (Larkin Folsom), USDOT UTC [[NCA&T PRESS RELEASE](#)]
- Trust Funded Programs AAEA Travel Grant to Student Author [Advising Justice Darko]
- Recognized reviewer since 2015, Journal of Transportation Research Part C: Emerging Technologies [[PDF](#)]
- Outstanding reviewer 2018, Journal of Accident Analysis and Prevention [[PDF](#)]
- Finalist Institute for Operations Research & the Management Sciences INFORMS 2017 [[FINALIST COMPETITION](#)]
- Top-5 Finalist Poster, Institute for Operations Research & the Management Sciences [[INFORMS 2013, 2016](#)]
- Student Essay Award Winner, Intelligent Transportation Systems of America [[ITS AMERICA 2015](#)] [[PDF](#)]
- Graduate Student Best Paper Award, Transportation Research Forum [[TRF 2015](#)]
- Outstanding Graduate Assistant Award of the year, Graduate School, University of Maryland, 2015
- I-95 Corridor Coalition Fellowship Recipient, 2014
- 1st Winner Modeling & Simulation, Research Interaction Day, University of Maryland, 2012 and 2013
- Paper Awards with Travel Grants - Korean-American Scientist and Engineers Association, 2013-2017
- Scholarship for Excellent Student, Yonsei University, 2005

PATENTS

[[Awarded](#)] Park, H., **Transportation Infrastructure Location and Redeployment**. U.S.Patent No.10,743,198.

[[AWARDED](#)] Park, H., **Predicting Effects of Forward Glance Durations on Latent Hazard Detection**.

U.S.Patent No.11,046,247.

[[PENDING](#)] Park, H., ...Otsu, K. **System and Methods For Efficient Robotics Navigation Though Global Mapping**.

U.S. Patent Application USSN 63/074,889.

[[PENDING](#)] Park, H., Folsom, L. **System and Method for Rerouting Drivers**. U.S. Patent Application USSN 63/194,042.

SUMMARY

1. Extramural Funding totaling \$2.9m as a co-PI (\$1.4m as a PI) from 15 awarded grants.
2. Summer visiting professorship at NASA JPL in 2018, 2020, and 2021.
3. Authored more than 83 peer-reviewed publications including 16 peer-reviewed journal articles and 67 peer-reviewed conference proceedings.
4. Presented 26 local, non-peer reviewed, technical workshop and conferences.
5. Several projects have been featured 7 times in university, state, and nationwide press-releases.
6. Won 7 national, state, and local research competition awards with students.
7. Have been supporting 12 PhD students and 5 M.S students. Have been part of 10 other students Thesis Committees.
8. Have been supervising thesis for 8 PhD, 2 M.S. students, 1 PostDoc. 1 received PhD , 1 received M.S degree.
9. Associate Editor, IEEE Transactions on Intelligent Transportation Systems
10. Organizing committee for 11 international conferences
11. NSF CIVIC (Smart and Connected Communities) Panel, DOE SBIR Panel
12. Member of ASCE Transportation Development Institute Technical Committee on Artificial Intelligence
13. Member of INFORMS Transportation Science and Logistics (TSL) Society, 2013–present
14. Committee Member of Transportation Research Board Network Modeling ADB30-5 subcommittee
15. Member of IEEE
16. Vice President, Transportation Research Forum, Advanced Technologies, 2012 - 2018
17. Committee Member for selecting NASA JPL summer fellows and Chancellor's Distinguished Fellows at NCA&T

EXTRAMURAL FUNDING AS PI/CO-PI AFTER NCA&T (16 FUNDED) + (1 PENDING)

1. (SINGLE PI) National Science Foundation (NSF) Robust Intelligence, “IMPACT: Information-theoretic Multi-agent Paths for Anticipatory Control of Tasks”, \$240,000, 10/2019 - 9/2022. (PRESS RELEASE, AWARD #1910397)
2. (CO-PI) National Science Foundation (NSF), “Catalyst Award: Advancing STEM Education Through Transportation Studies”, \$200,000, 9/2021 - 8/2023, PI: Maranda McBride, co-PI: Venkatesh Pandey. (AWARD #1910397)
3. (CO-PI) “Spatiotemporal Entropy to Guide Targeted Meteorological Observations”, NASA Jet Propulsion Laboratory, California Institute of Technology, PI: Derek Posselt, coPIs: Hui Su (JPL), Masahiro Ono (JPL), 1/2021 - 12/2021. \$50,000 (\$35,000 for NCA&T Park)
4. (CO-PI) “Deep Learning Software for Traffic State Prediction”, North Carolina (NC) Department of Transportation through NC Transportation Center of Excellence on Mobility and Congestion, \$330,365 (\$90,000 for NCA&T Park), PI: Sambit Bhattacharya (FSU), co-PIs: Murat Adivar (FSU), Ali Hajbabaie (NCSU), Noel Greis (NCSU), George List (NCSU), 8/2020 - 7/2022.
5. (CO-PI) “Transit and Maas Role in Improving Economic and Healthcare Access for Underserved Populations”, North Carolina (NC) Department of Transportation through NC Transportation Center of Excellence on Mobility and Congestion, \$320,311 (\$90,000 for NCA&T Park), PI: Kai Monast (FSU), co-PIs: Murat Adivar (NCSU), Noreen McDonald (UNC-Chapel Hill), Burcu Adivar (FSU), 8/2020 - 7/2022.
6. (PI) “IDEANETT: Intelligent Data Exploration & Analysis for New & Existing Transportation Technology”, North Carolina (NC) Department of Transportation through NC Transportation Center of Excellence in Advanced Technology Safety and Policy, \$150,000, 1/2020 - 12/2022.
7. (PI) “VRU-TOP: Vulnerable Road User demand-responsive Transit Optimization with healthcare Privatization”, United States Department of Transportation through Center For Advanced Transportation Mobility, non-paid co-PI: Kai Monast (NCSU), \$145,614, 2/2020 - 7/2021.
8. (CO-PI) “Developing a Plan for Using Unmanned Aerial Vehicles for Traffic Operations Applications in Virginia”, Virginia Department of Transportation, PI Andy Alden (VTTI), \$249,903 (\$20,000 for NCA&T Park), 8/2019 - 5/2021
9. (CO-PI) “UAS-based Active Hurricane Sensing with Information-theoretic Path Planning”, NASA Jet Propulsion Laboratory, California Institute of Technology, PI: Masahiro Ono (JPL), coPIs: Hui Su (JPL), 1/2020 - 9/2020. \$50,000 (\$35,000 for NCA&T Park)
10. (CO-PI) “Information-theoretic Route Planning for a Heli-rover Team Part 1: Algorithm Development”. NASA Jet Propulsion Laboratory, California Institute of Technology, PI: Masahiro Ono (JPL), coPIs: Kyon Otsu (JPL), Ali Agah (JPL), \$50,000 (\$35,000 for NCA&T Park), 2/2019 - 9/2019.
11. (PI) “Advanced Traffic Analysis of Aerial Video Data”, North Carolina Department of Transportation through Technical Assistance Program, co-PI: Sun Yi (NCA&T), \$7,000, 3/2019 - 7/2019.
12. (PI) “DRONETIM: Dynamic Routing of Unmanned-aerial and Emergency Team Incident Management”, United States Department of Transportation through Center For Advanced Transportation Mobility, co-PI: Sun Yi (NCA&T), Andy Alden (VTTI), \$149,685, 2/2019 - 8/2020.
13. (PI) “VRU-POD: VRU-Personalized, Optimum, and Dynamic Routing”, United States Department of Transportation through Center For Advanced Transportation Mobility, co-PIs: Sun Yi (NCA&T), Yeonho Seong (NCA&T), Justin Owens (VTTI), Andrew Miller (VTTI), \$118,161, 2/2019 - 1/2020.
14. (PI) “Multi-agent Reinforcement Learning-based Pedestrian Dynamics Models for Emergency Evacuation”, United States Department of Transportation through Center For Advanced Transportation Mobility, co-PIs: Dahai Liu (ERAU), Sirish Namilae (ERAU), \$196,830, 5/2019 - 4/2021.

15. (CO-PI) “Roadside Truck Placard Readers for Advanced Notice and Response at Safety-Critical Facilities”, Virginia Department of Transportation, PI Andy Alden (VTII), \$63,966 (\$12,000 for NCA&T Park), 11/2018 – 6/2019 (Phase I)
16. (SINGLE PI) Travelers’ Rationality in Anticipatory Online Emergency Response, United States Department of Transportation through Center For Advanced Transportation Mobility, \$75,000, 2/2018 – 6/2019.
17. National Science Foundation, CAREER: Time-Varying Network Dependency Retrieval and Sequential Knowledge Transfer, \$500,000, 9/2022 – 8/2027 (pending).

FUNDED PROJECTS AS FELLOWSHIP, INVESTIGATOR / ASSISTANT

1. (VISITING FACULTY) “Information Theoretic Vehicle Routing”, NASA Jet Propulsion Laboratory, California Institute of Technology, PI: Ono (JPL), \$65,000 Direct cost: (\$40,000 Direct cost for NCA&T Park), 5/2018 – 8/2018
2. (VISITING FACULTY) “Information Theoretic Vehicle Routing for Ground and Aerial Vehicle”, NASA Jet Propulsion Laboratory, California Institute of Technology, PI: Ono (JPL), \$65,000 Direct cost: (\$40,000 Direct cost for NCA&T Park), 5/2019 – 8/2019 ([PRESS RELEASE](#))
3. (VISITING FACULTY) “Multiagent Information Theoretic Vehicle Routing”, NASA Jet Propulsion Laboratory, California Institute of Technology, PI: Ono (JPL), \$65,000 Direct cost: (\$40,000 Direct cost for NCA&T Park), 5/2021 – 8/2021
4. Park, H. (**Control Architecture Team Leader**), PI Benakiva, Sustainable Travel Incentives with Prediction, Optimization and Personalization (TRIPOD) with MIT Intelligent Transportation System Lab, Sponsored by U.S. Department of Energy’s ARPA-E Traveler Response Architecture using Novel Signaling for Network Efficiency in Transportation (TRANSNET), 2/2016 – 9/2018, \$3,990,128.
 - Contribution: Real-time distribution of incentives to urge travelers towards energy-efficient travel choices; Cellphone as a sensor to detect travel behavior, mode, vehicle occupancy, driving style; Agent-based simulator for multi-modal networks.
5. Park, H. (**Investigator**), PI Knodler, Using the New SHRP2 Naturalistic Driving Study Safety Databases to Examine Safety Concerns for Older Driver, 1/2017 - 6/2018, \$150,000.
6. Park, H. (**University Transportation Center Fellow**), PI Dawn, SAFETY Research using SIMulation (SAFER-SIM), Impact of Secondary Tasks on Hazard Detection.
7. Park, H. (**National Transportation Center Fellow**), PI Haghani, Emergency Resource Allocation: Stochastic deployment of emergency vehicles considering sequence of incidents, National Transportation Center @ Maryland [NTC2016-SU-R-09] [[HTML](#)], U.S. Department of Transportation, 2015.
8. Park, H. (**Research Assistant**), PI Haghani, Federal Highway Administration (FHWA) safety research program, 2014-2015. - Manage Highway Safety Information System for 9 States in Unites States [[HTML](#)].
9. Research Assistant, Validation of Probe Vehicle Data on Freeway and Arterial Corridors of 10 States, I-95 Corridor Coalition, 2012-2015. I-95 Corridor Coalition, 2012-2015. - Optimal locations of Bluetooth sensors to validate INRIX, HERE, TomTom travel data [[PDF](#)].
10. Research Assistant, Benefits of incident management, Data quality and performance evaluation, Maryland State Highway Administration [[HTML](#)], 2010-2015.

Refereed Journal Articles (16 published) + (4 under review)

1. L. Folsom, M. Ono, K. Otsu, **H. Park**, 2021. Scalable Information-Theoretic Path Planning for a Rover-Helicopter Team in Uncertain Environments, *International Journal of Advanced Robotic Systems* (IF 1.5) 18 (2), 1–18
2. N. Pugh, **H. Park**, P. Derjany, S. Namalie, D. Liu. 2021. Deep adaptive learning for safe and efficient navigation of pedestrian dynamics. *IET Intelligent Transport Systems* (IF 2.5), 15 (4), 538–548.
3. X. Yu, S. Gao, X. Hu, **H. Park**, 2019. A Markov Decision Process Approach to Vacant Taxi Routing with E-hailing. *Transportation Research Part B: Methodological* (IMPACT FACTOR (IF) 5.6), 121, 114–134. [DOI] [PDF]
4. **H. Park**, D. Waddel, A. Haghani, 2019. Online emergency vehicle dispatching with look-ahead on a transportation network. *Transportation Research Part C: Emerging Technologies* (IF 7.1) 109, 95–116. [DOI]
5. **H. Park**, S. Gao, A. Haghani, M.A. Knodler, S. Samuel, 2018. Anticipatory sensor location problem in connected vehicle environment. *Transportation Science* (IF 4.7) 52 (6), 1299–1326, 2018. [DOI] [PDF]
6. **H. Park**, A. Haghani, M.A. Knodler, S. Samuel, March, 2018. Real-time crash prediction and avoidance under unexpected traffic congestion. *Accident Analysis & Prevention* (IF 2.1) 112, 39–49. [DOI]
7. **H. Park**, N. Pugh, 2018. Generalized Estimating Equation Model based Recursive Partitioning: Applied to Distracted Driving. *Journal of Advanced Transportation* (IF 1.7) vol. 2018, Article 3245864, 11 pages, 2018. [DOI]
8. **H. Park**, S. Gao, S. Samuel, 2017. Modeling effects of forward roadway glance durations on latent hazard detection. *TRR: Journal of the Transportation Research Board* (IF 1.0) 2663, 90–98. [DOI] [PDF]
9. **H. Park**, A. Shafahi, A. Haghani, 2016. A stochastic emergency response location model considering secondary incidents on freeways. *IEEE Transactions on Intelligent Transportation Systems*, 17 (9), 2528–2540. [DOI] [PDF]
10. **H. Park**, A. Haghani, 2016. Stochastic capacity adjustment considering secondary incidents. *IEEE Transactions on Intelligent Transportation Systems*, 17 (10), 2843–2853. [DOI] [PDF]
11. **H. Park**, A. Haghani, 2015. Optimal number and location of Bluetooth sensors considering stochastic travel time prediction. *Transportation Research Part C: Emerging Technologies*, 55, 203–216. [DOI] [PDF]
12. **H. Park**, A. Haghani, 2015. Real-time prediction of secondary incident occurrences using vehicle probe data. *Transportation Research Part C: Emerging Technologies*, 70, 69–85. [DOI] [PDF]
13. **H. Park**, A. Haghani, X. Zhang, 2015. Interpretation of Bayesian neural networks for predicting the duration of detected incidents. *Journal of Intelligent Transportation Systems: Technology, Planning, and Operations*, 20 (4), 385–400. [DOI] [PDF]
14. D. Hale, A. Hajbabaie, J. Ma, J. Hu, **H. Park**, and J. Bared, 2016. Proposed data-driven performance measures for comparing and ranking traffic bottlenecks *Transportation Research Procedia* 15, 483–494. [DOI] [PDF]
15. **H. Park**, B. Son, H. Kim. 2007. Development of accident prediction models for freeway interchange ramps. *Journal of the Korean Society of Transportation*, 25(3), 123–135. [DOI] [PDF]
16. N. Pugh, **H. Park**, High-Order Markov Model for Prediction of Secondary Crash Likelihood considering Incident Duration, Cogent Engineering, Taylor & Francis (In Press)
17. K. Shirzad, J. Darko, L. Folsom, N. Pugh, **H. Park**, J. Owens, A. Miller, Adaptive Personalized Routing for Vulnerable Road Users, *IEEE Transactions on Intelligent Transportation Systems* (Under review)
18. L. Folsom, **H. Park**, Dynamic Mixed Information Strategy for Heterogeneous Network Users and System Optimal Design. *Journal of Intelligent Transportation Systems: Technology, Planning, and Operations*. (Under review)
19. J. Darko, **H. Park**, Multimodal Trip Planning for Vulnerable Road Users Considering Risk-Preference. *Transportmetrica B: Transport Dynamics*. (Under review)
20. J. Darko, **H. Park**, UAS- based active hurricane sensing with information-theoretic path planning. *Earth and Space Science*. (Under review)

67 Peer-Reviewed Conferences Proceedings (2 Book series, 45 Full Paper + 2 Poster + 18 Extended Abstract)

Peer reviewed Books Series Chapters by Full Conference Proceedings (2)

1. **H. Park**, N. Pugh, J. Darko, L. Folsom, S. Samuel, 2020. Explicit Forward Glance Duration Hidden Markov Model for Inference of Spillover Detection. In: Stanton N. (eds) *Advances in Human Factors of Transportation*. AHFE 2019. *Advances in Intelligent Systems and Computing*, vol 964. Springer, Cham.
2. **H. Park**, N. Pugh, 2019 Generalized Estimating Equations Model Based Recursive Partitioning: Applied to Distracted Driving. In: Stanton N. (eds) *Advances in Human Aspects of Transportation*. AHFE 2018. *Advances in Intelligent Systems and Computing*, vol 786. Springer, Cham.

Peer reviewed Full Conference Paper (43) Publication + (2) Pending

3. J. Darko, **H. Park**. Integrating Pedestrian Accessibility with Public Transit Routing in a Multimodal Trip Planning Framework. The 101th Annual Meeting of Transportation Research Board (TRB 2022), # 22-03342, Washington, DC, January, 2022. (Under Review)
4. J. Darko, **H. Park**. Unmanned Aerial and Ground Emergency Vehicles in Traffic Incident Management: An Anticipatory Assignment Model. The 101th Annual Meeting of Transportation Research Board (TRB 2022), # 22-03332, Washington, DC, January, 2022. (Under Review)
5. J. Darko, **H. Park**. A Proactive Dynamic-Distributed Constraint Optimization Framework for Unmanned Aerial and Ground Vehicles in Traffic Incident Management. 2021 6th International Conference on Intelligent Transportation Engineering (ICITE 2021). October, 2021.
6. J. Darko, J. Darko, L. Folom, N. Deshpande, **H. Park**. Distributed Constraint Optimization Problem for Coordinated Response of Unmanned Aerial Vehicles and Ground Vehicles. The 55th Annual Conference on Information Sciences and Systems (CISS 2021), # 2131, March, 2021.
7. J. Darko, **H. Park**, J. Chow. VRUPOD: Vulnerable Road User Personalized Optimum and Dynamic routing. The 8th international Symposium on Transport Network Reliability (INSTR 2021), June, 2021.
8. S. Haghani, M. Bikdash, **H. Park**. Robust Virtual Backbone for Vehicular Ad-Hoc Network Reliability in Intelligent Transportation Systems. The 8th international Symposium on Transport Network Reliability (INSTR 2021), June, 2021.
9. J. Darko, **H. Park** Modeling and Assessing the Impact of a Traveler's Preference on Transit Route-Choice Behavior. The 100th Annual Meeting of Transportation Research Board (TRB 2021), # 21-02784, Washington, DC, January, 2021.
10. K Shirzad, J Darko, L Folom, N Pugh, **H. Park**, J Owens, A Miller. A Personalized Trip Planner for Vulnerable Road Users. The 100th Annual Meeting of Transportation Research Board (TRB 2021), # 21-02068, Washington, DC, January, 2021.
11. L. Folsom, **H. Park**. Dynamic Mixed Information Strategy for Heterogeneous Network Users and System Optimal Design. The 100th Annual Meeting of Transportation Research Board (TRB 2021), # 21-02070, Washington, DC, January, 2021.
12. M. Ono, B. Rothrock, K. Otsu,..., **H. Park**. MAARS: Machine learning-based Analytics for Rover Systems. Proceedings of the International IEEE 2020 Aerospace Conference (with AIAA and PHM Society as technical cosponsors), Yellowstone Conference Center, Big Sky, Montana, Mar 7-14, 2020.
13. J. Darko, Y. Acquaaah, L. Folsom, **H. Park**, A., Alden. DRONETIM: Dynamic Routing of Unmanned-aerial and Emergency Team Incident Management. The 99th Annual Meeting of Transportation Research Board (TRB 2020), # 20-02283, Washington, DC, January 12-16, 2020.
14. N. Pugh, **H. Park**. High-Order Markov Model for Prediction of Secondary Crash Likelihood Considering Incident Duration. Proceedings of the 99th Annual Meeting of Transportation Research Board (TRB 2020), # 20-02092, Washington, DC, January 12-16, 2020.

15. K. Shirzad, B. Vafaei, **H. Park**. Prediction of Critical Factor of Safety in Soil Slopes Using Adaptive Network-Based Fuzzy Inference System (ANFIS). Proceedings of the 99th Annual Meeting of Transportation Research Board (TRB 2020), # 20-02315, Washington, DC, January 12–16, 2020.
16. Y. Acquaaah, J. Vine-Hodge, **H. Park**. Development of multinomial and ordinal logistic models for bicyclist and pedestrian crashes across Divisions 13 and 14 of North Carolina. Proceedings of the 99th Annual Meeting of Transportation Research Board (TRB 2020), # 20-02263, Washington, DC January 12–16, 2020.
17. D. Waddell, N. Pugh, K. Shirzad, **H. Park**. Simulation-Based Optimization of Emergency Response Considering Rationality of Travelers. Proceedings of the 98th Annual Meeting of Transportation Research Board (TRB 2019), # 19-05975, Washington, DC, January 13–17, 2019.
18. D. Waddell, N. Pugh, **H. Park**. 2019. Visualization-based Dynamic Dispatching of First Responders. Proceedings of 98th Annual Meeting of Transportation Research Board (TRB 2019), # 19-05569, Washington, DC, January 13–17, 2019.
19. **H. Park**. 2019. Sensor Deployment for Reduction of Arterial Traffic Congestion. Proceedings of 98th Annual Meeting of Transportation Research Board (TRB 2019), # 19-04832, Washington, DC, January 13–17, 2019.
20. **H. Park** and A. Haghani. 2019. Stochastic Dynamic Sensor Location Problem with Efficient Solutions. Proceedings of 98th Annual Meeting of Transportation Research Board (TRB 2019), # 19-04783, Washington, DC, January 13–17, 2019.
21. **H. Park**, N. Pugh, P. Schonfeld. A. Haghani. Effect of Demand Shifting on Security Checkpoint Operation. The 22nd Air Transport Research Society (ATRS) World Conference, #287. Seoul, Korea, . 2018.
22. **H. Park**. 2018. Simulation-based Optimization for Reconfiguration of Mobile Wireless Sensor Network. IEEE Wireless Telecommunications Symposium (WTS 2018), Phoenix, Arizona.
23. C. Azevedo, R. Seshadri, S. Gao, B. Atasoy, A. Akkinpally, **H. Park** et al., 2018. Tripod: Sustainable Travel Incentives with Prediction, Optimization, and Personalization. The 97th Annual Meeting of Transportation Research Board (TRB 2018) Washington, DC, Paper # 18-06769, 2018. [\[PDF\]](#)
24. X. Yu, S. Gao, **H. Park**. 2018. Multi-Cycle Optimal Taxi Routing with E-hailing. Proceedings of the 18th COTA International Conference of Transportation Professionals (CICTP), No. 664, Beijing, China, July 5–8, 2018.
25. S. Ayaz, S. Gao, **H. Park**. 2018. Cooperative Scheme - An Alternative Approach to an Equitable and Pareto-Improving Transportation System. The 97th Annual Meeting of Transportation Research Board Washington, DC, January, 2018. Paper #18-00304 [\[PDF\]](#).
26. X. Yu, S. Gao, **H. Park**. 2018. Multi-Cycle Optimal Taxi Routing with E-hailing. The 97th Annual Meeting of Transportation Research Board, Washington, DC, January, 2018. Paper #18-04575 [\[PDF\]](#).
27. S. Ayaz, S. Gao, **H. Park**. An Alternative Approach to Equitable and Pareto-Improving System Optimum. The 1th Triennial Transportation Science and Logistics Society Conference (TSL I), Chicago, Illinois 2017.
28. X. Yu, S. Gao, **H. Park**. Muti-Cycle Optimal Taxi Routing. The 1th Triennial Transportation Science and Logistics Society Conference (TSL I), Chicago, Illinois 2017.
29. **H. Park**, S. Gao, S. Samuel. Modeling effects of forward roadway glance durations on latent hazard detection. The 96th Annual Meeting of Transportation Research Board (TRB 2017).
30. **H. Park**, S. Gao, A. Haghani. Optimal relocation of portable traffic sensors to improve arterial mobility. The 96th Annual Meeting of Transportation Research Board (TRB 2017).
31. **H. Park**, S. Gao, A. Haghani. Sequential interpretation and prediction of secondary incident probability in real time. The 96th Annual Meeting of Transportation Research Board (TRB 2017).
32. D. Hale, A. Hajbabaie, J. Ma, J. Hu, **H. Park**, J. Bared. Proposed Data-Driven Performance Measures for Comparing and Ranking Traffic Bottlenecks. The 96th Annual Meeting of Transportation Research Board (TRB 2017).

33. H. Park, A. Haghani. Stochastic emergency response units allocation considering secondary incident occurrences. The 95th Annual Meeting of Transportation Research Board (TRB 2016), Washington, DC, January, 2016.
34. H. Park, A. Haghani. Stochastic capacity adjustment considering secondary incidents. The 95th Annual Meeting of Transportation Research Board (TRB 2016), Washington, DC, January, 2016.
35. H. Park, A. Haghani. Online emergency vehicle dispatching with look-ahead on a transportation network. The 95th Annual Meeting of Transportation Research Board (TRB 2016), Washington, DC, January, 2016.
36. H. Park, A. Haghani. Use of clustering model and adjusted boxplot model for identification of secondary incidents. The 95th Annual Meeting of Transportation Research Board (TRB 2016), Washington, DC, January, 2016.
37. H. Park, A. Haghani. Innovative use of Bluetooth technology considering dynamic relocation. Intelligent Transportation Systems of America (ITS AMERICA 2015) Annual Meeting and Expo, Pittsburgh, PA, May 31-June 3, 2015. [HTML] [PDF]
38. H. Park, A. Haghani. Optimal number and location of Bluetooth sensors considering stochastic travel time prediction. The 56th Annual Transportation Research Forum (TRF 2015), Atlanta, GA, March, 2015.
39. H. Park, A. Haghani. Capacity adjustment considering the impact of secondary incidents. The 94th Annual Meeting of Transportation Research Board (TRB 2015), Washington, DC, January, 2015.
40. H. Park, A. Haghani. An optimal fleet allocation of emergency response teams on freeway using a two stage stochastic programming. The 20th Conference of the International Federation of Operational Research Societies (IFORS 2014), Barcelona, Spain, July, 2014.
41. H. Park, A. Haghani. Improving mobility of urban arterial roads using Bluetooth technology. The 4th International Conference on Mobile Services, Resources, and Users (MOBILITY 2014), France, 2014.
42. H. Park, A. Haghani, Y. Aliari. Optimal number and location of Bluetooth sensors on arterial roads: The stochastic and dynamic approaches. The 1st International Conference on Engineering and Applied Sciences Optimization (OPTI 2014) Kos Island, Greece, June, 2014.
43. H. Park, A. Haghani, Y. Aliari. A pedagogical rule extraction from Bayesian neural networks for prediction of secondary incidents. The 1st International Conference on Engineering and Applied Sciences Optimization (OPTI 2014) Kos Island, Greece, June, 2014.
44. Y. Aliari, A. Haghani, H. Park. An efficient network model for allocation of in-house and outsourced construction equipment among projects. The 1st International Conference on Engineering and Applied Sciences Optimization (OPTI 2014) Kos Island, Greece, June, 2014.
45. H. Park, A. Haghani. Identification and prediction of secondary crashes using vehicle probe data. The 93rd Annual Meeting of Transportation Research Board (TRB 2014), AFB20(2) Subcommittee, Washington, DC, January, 2014.
46. H. Park, A. Haghani. Quantifying non-recurrent congestion impact on secondary incidents using probe vehicle data. The 54th Annual Transportation Research Forum (TRF 2013), Annapolis, MD, March, 2013.
47. H. Park, A. Haghani, X. Zhang. ATIS: Interpretation of Bayesian neural network for predicting the duration of detected incidents. The 92nd Annual Meeting of Transportation Research Board (TRB 2013), Washington, DC, January, 2013.

Peer reviewed Conference Proceedings Poster Presentation only (2)

48. J. Darko, H. Park Modeling and Assessing the Impact of a Traveler's Preference on Transit Route-Choice Behavior. North Carolina Department of Transportation Research & Innovation Summit – 2020. **Poster Competition Winner.** [DOI]

49. N. Folsom, L., Darko, J., Pugh N., **H. Park**, N. Pugh. Travelers' rationality in anticipatory online emergency response. 2019 Safe Systems Summit, Durham Convention Center, April 23-24, 2019.

Peer reviewed Conference Proceedings Extended Abstract (20)

50. S. Haghani, M. Bikdash, **H. Park**. Area-Based Backbone for Vehicular Ad-Hoc Networks. Proceedings of the IEEE SoutheastCon 2021.
51. S. Haghani, S. Yi, **H. Park**. Predicting the Budburst of Deciduous Trees in North Carolina from the Interaction between Precipitation and Temperature. Proceedings of the IEEE SoutheastCon, Huntsville, AL, April 2019.
52. N. Pugh, **H. Park**. Morning Peak Hour Speed Prediction using Deep Learning Neural Networks. Proceedings of the IEEE SoutheastCon 2019, Huntsville, AL, April 2019.
53. N. Pugh, **H. Park**. Prediction of Secondary Crash Likelihood considering Incident Duration using High Order Markov Model. Proceedings of the IEEE SoutheastCon, Huntsville, AL, April 2019.
54. J. Darko, **H. Park**. Vulnerable road user navigation considering perception on the transit uncertainty. The 2nd Triennial Transportation Science and Logistics Society Conference (TSL II), Arlington, VA, May 27-29, 2020.
55. J. Darko, **H. Park**. DRONETIM:Dynamic Routing Of uNmanned-aerial and Emergency Team Incident Management. The 2nd Triennial Transportation Science and Logistics Society Conference (TSL II), Arlington, VA, May 27-29, 2020.
56. J. Shirzad, **H. Park**. Adaptive Personalized Routing For Vulnerable Road Users. The 2nd Triennial Transportation Science and Logistics Society Conference (TSL II), Arlington, VA, May 27-29, 2020.
57. L. Folsom, **H. Park**. Information-theoretic navigation and stochastic user equilibrium. The 2nd Triennial Transportation Science and Logistics Society Conference (TSL II), Arlington, VA, May 27-29, 2020.
58. **H. Park**, A. Haghani. Connected Vehicle Sensor Location Model for Traffic Congestion Mitigation. Proceedings of the Tenth Triennial Symposium on Transportation Analysis, Hamilton Island, Australia, 17-21 June 2019.
59. N. Pugh, **H. Park**. 2018. Prediction of Red-Light Running using an Artificial Neural Network. IEEE Southeast-Con 2018, St. Petersburg, FL.
60. **H. Park**. Portable traffic sensors to enhance arterial mobility. IEEE SoutheastCon 2018, St. Petersburg, FL.
61. L. Folom, **H. Park**. Congestion Reduction Using Information-Theoretic Multi-agent Decision-Making. 2021 Annual Meeting of the Transportation Research Forum (TRF 2021), # 145, April, 2021.
62. J. Darko, **H. Park**. Multimodal Public Transit Routing considering Travelers' Risk-Preference. 2021 Annual Meeting of the Transportation Research Forum (TRF 2021), # 154, April, 2021.
63. J. Darko, L. Folom, N. Deshpande, **H. Park**. A new distributed agent framework for traffic incident management. ASCE International Conference on Transportation & Development (ISTD 2021). June, 2021.
64. J. Darko, L. Kurkalova, **H. Park**. The Intensity of North Carolina Cropland Use. AAEA 2019 Annual Meeting, Atlanta, July 21-23, 2019.
65. **H. Park**. Explicit forward glance duration hidden Markov model for inference of hazard detection. Human Factors and Ergonomics Society (HFES 2017), October, Austin, Texas, 2017.
66. **H. Park**, A. Haghani. Online redeployment and routing of emergency vehicles considering sequence of incidents. The 9th Triennial Symposium on Transportation Analysis (TRISTAN IX) Oranjested, Aruba, June 13-17, 2016.
67. **H. Park**, A. Haghani. Dynamic relocation of Bluetooth sensors for improvement of signal timing. The 9th Triennial Symposium on Transportation Analysis (TRISTAN IX) Oranjested, Aruba, June 13-17, 2016.
68. **H. Park**, A. Haghani., H. Masoud. Real-time filtering of vehicle probe data for secondary incident prediction. The 8th Triennial Symposium on Transportation Analysis (TRISTAN VIII), San Pedro de Atacama, Chile, June, 2013.

69. **H. Park**, A. Haghani. Identification and prediction of secondary incidents. The 9th of US–KOREA Conference (UKC 2013) , New York/New Jersey, August 7-11, 2013. [PDF]

26 Conference, Workshops, Technical presentations

1. N. Pugh, **H. Park**, P. Derjany, S. Namalie, D. Liu. Safe and Efficient Airport Evacuation considering Pedestrian Dynamics. Poster Presentation at the INFORMS Annual Meeting
2. **H. Park**. Multi-agent Reinforcement Learning-based Pedestrian Dynamics Models for Emergency Evacuation. Third Annual Center for Advanced Transportation Mobility (CATM) Symposium, Daytona Beach, FL, November 4, 2019.
3. **H. Park**. DRONETIM: Dynamic Routing of Unmanned-aerial and Emergency Team Incident Management. Third Annual Center for Advanced Transportation Mobility (CATM) Symposium, Daytona Beach, FL, November 4, 2019.
4. **H. Park**. VRU-POD: Vulnerable Road Users-Personalized, Optimum, and Dynamic Routing. Third Annual Center for Advanced Transportation Mobility (CATM) Symposium, Daytona Beach, FL, November 4, 2019.
5. **H. Park**. Travelers' rationality in anticipatory online emergency response. Third Annual Center for Advanced Transportation Mobility (CATM) Symposium, Daytona Beach, FL, November 4, 2019.
6. J. Darko, **H. Park**. A Dynamic Transit Model for Vulnerable Road Users. Poster Presentation and Minority Issues Forum Competition at the INFORMS Annual Meeting, Seattle, WA, October 20-23, 2019.
7. N. Pugh, **H. Park**. Deep Adaptive Learning For Safe And Efficient Navigation Of Pedestrian Dynamics – Airport Evacuation. Poster Presentation at the INFORMS Annual Meeting, Seattle, WA, October 20-23, 2019.
8. K. Shirzad, **H. Park**. 2019. Vulnerable Road User Routing. The 98th Annual Meeting of Transportation Research Board (TRB), Washington, DC, January, 2018. AFB20(2) Subcommittee.
9. L. Folsom, J. Darko, N. Pugh, **H. Park**, N. Pugh. Travelers' rationality in anticipatory online emergency response. Presentation at the Safe Systems Summit, Durham Convention Center, April 23-24, 2019.
10. J. Darko, **H. Park**. Dynamic Transit Modeling. 2020 NCDOT Innovation Summit, NCAT Alumni-Foundation Event Center, May 7, 2019.
11. L. Folsom, **H. Park**. Semi-Autonomous Human Safe Driving. 2020 NCDOT Innovation Summit, NCAT Alumni-Foundation Event Center, May 7, 2019.
12. N. Pugh, **H. Park**. Stochastic Dynamic Markov Decision Process on Airport Security Checkpoint Demand Shifting. Poster Presentation at the INFORMS Annual Meeting, Phoenix, AZ, November. 4-7. 2018.
13. **H. Park**. Travelers' rationality in anticipatory online emergency response. 6th Annual UTC Conference for the Southeastern Region, Center for Connected Multimodal Mobility (C2M2) Madren Conference Center, October 24-25, 2018.
14. **H. Park**. Travelers' rationality in anticipatory online emergency response. Second Annual Center for Advanced Transportation Mobility (CATM) Symposium, Blacksburg, Virginia, November 5, 2018.
15. N. Pugh, **H. Park**. 2018. Optimal design of Dilemma zone. The 97th Annual Meeting of Transportation Research Board (TRB), Washington, DC, January, 2018. AFB20(2) Subcommittee.
16. **H. Park**, N. Pugh. Airline and passenger incentive optimization models for airport congestion mitigation. **Finalist Poster Competition**, Institute for Operations Research and the Management Sciences (INFORMS 2017) Annual Meeting, Houston, TX. October 22-25, 2017.
17. J. Headen, **H. Park**. Infrastructure Redeployment Based on Traffic Data Using Wireless Sensors. The first symposium of Center for Advanced Transportation Mobility (CATM), Greensboro, NC, October 17, 2017.
18. Location-allocation applications in Network Modeling, Testing, Evaluation, and Control of Heterogeneous Large Scale systems of Autonomous Vehicles (TECHLAV) seminar series, NCAT, Oct, 2017.

19. N. Pugh, **H. Park**. Recursive Partitioning in Distracted Driving. The first symposium of Center for Advanced Transportation Mobility (CATM), Greensboro, NC, October 17, 2017.
20. **H. Park**, S. Gao, S. Samuel, M. Knodler, A.Haghani. Anticipatory dynamic traffic sensor location problems with connected vehicle technologies. Top-5 Finalist Poster, Institute for Operations Research and the Management Sciences ([INFORMS 2016](#)) Annual Meeting, Nashville, TN. November 13–16, 2016.
21. **H. Park**, A. Haghani. Stochastic and dynamic approaches for optimal placement of portable point-to-point sensors. Top-5 Finalist Poster, Institute for Operations Research and the Management Sciences ([INFORMS 2013](#)) Annual Meeting, Minneapolis, MN. October 6-9, 2013.
22. Optimized Resource Allocation for Emergency Response, Joint meeting between Washington DC Section of Institute of Transportation Engineers (ITE) and Intelligent Transportation Systems-ITE@UMD Chapter, February, 2016.
23. Emerging technology and sensor data collection for smart cities, Yonsei University, May, 2015.
24. Dynamic emergency resource allocation with Markov theory. Modeling & Simulation, Graduate Research Interaction Day (1st Winner), University of Maryland, 2013.
25. Innovative wireless sensor deployment and multiple source data fusion. Modeling & Simulation, Graduate Research Interaction Day (1st Winner), University of Maryland, 2012.
26. Vehicle Probe data Validation methods using Bluetooth sensor, Civil and Environmental Engineering, conference at UMD, February 3, 2012.

PROFESSIONAL ACTIVITIES

Scientific Program Committee

- The 25th IEEE Intelligent Transportation Systems Conference, Bilbao, Spain, 2022, Organizing Committee (pending)
- The 12th Triennial Symposium on Transportation Analysis ([TRISTAN XI](#)), 19-26 June 2022
- The 10th Triennial Symposium on Transportation Analysis ([TRISTAN IX](#)), 13-17 June 2016
- The 11th International Conference on Mobile Services, Resources, and Users ([MOBILITY 2021](#))
- The 10th International Conference on Mobile Services, Resources, and Users ([MOBILITY 2020](#))
- The 9th International Conference on Mobile Services, Resources, and Users ([MOBILITY 2019](#))
- The 8th International Conference on Mobile Services, Resources, and Users ([MOBILITY 2018](#))
- The 7th International Conference on Mobile Services, Resources, and Users ([MOBILITY 2017](#))
- The 6th International Conference on Mobile Services, Resources, and Users ([MOBILITY 2016](#))
- The 5th International Conference on Mobile Services, Resources, and Users ([MOBILITY 2015](#))
- Vice President, Transportation Research Forum ([TRF](#)), Advanced Technologies, 2012 - present
- Secretary, Korean Transportation Association in America ([KOTAA](#)), 2011-present
- Secretary, Maryland Student Chapter ([ITS/ITE](#)), 2011-2013

Journal Reviewer

1. Human Factors: The Journal of the Human Factors and Ergonomics Society
2. Journal of Location Based Services
3. Accident Analysis & Prevention
4. Transportation Research Part A: Policy and Practice
5. Transportation Research Part C: Emerging Technologies
6. Transportation Research Part E: Logistics and Transportation Review

7. IEEE Transactions on Intelligent Transportation Systems
8. IEEE Intelligent Transportation Systems Conference
9. IEEE Transactions on Automation Science and Engineering
10. Journal of Intelligent Transportation Systems
11. International Journal of Transportation Science and Technology
12. IET Intelligent Transport Systems
13. Transportation Research Record
14. Mobile Networks and Applications
15. Transportmetrica A: Transport Science
16. Transportmetrica B: Transport Dynamics
17. International Journal of Information Technology & Decision Making
18. Journal of Transportation Safety & Security
19. Journal of Human Factors
20. Vehicles
21. IEEE Access
22. Journal of Technologies

Society Activities

- NSF CIVIC (Smart and Connected Communities) Panel
- DOE SBIR Panel
- Editorial Board, Vehicles (ISSN 2624-8921)
- Committee Member of ASCE Transportation and Development Institute Technical Committee on Artificial Intelligence
- Member of INFORMS Transportation Science and Logistics (TSL) Society, 2013 present
- Committee Member of Transportation Research Board Network Modeling ADB30-5 subcommittee
- Member of IEEE

TEACHING ACTIVITIES (MEAN: PARK (4.5/5.0) > UNIVERSITY (4.2), COLLEGE (4.2))

Develop Transportation certificate to focusing on online M.S in transportation, cross-teaching between multiple departments for modeling, visualization, optimization, and simulation of transportation systems, transportation network models, overview of optimization.

@ North Carolina Agricultural & Technical State University

- [SPRING 2020] Instructor CSE708: Overview of Optimization.
- [SPRING 2020] Instructor CSE819: Computational Transportation (Cross listed with CIEN 754).
- [FALL 2019] Instructor CSE804: Computational Modeling and Visualization.
- [SPRING 2019] Instructor CSE885: Transportation Modeling. [PARK (4.5/5.0) > UNIVERSITY (4.2)]
- [SPRING 2019] Instructor CSE785: Computational Optimization. [PARK (4.3/5.0) > UNIVERSITY (4.2)]
- [FALL 2018] Instructor CSE804: Computational Modeling and Visualization. [PARK (4.4/5.0) > UNIVERSITY (4.2)]
- [SPRING 2018] Instructor CSE785: Computational Optimization. [PARK (4.9/5.0) > UNIVERSITY (4.2)]
- [FALL 2017] Instructor CSE885: Transportation Network Modeling (Cross listed with CIEN 754). [PARK (4.3/5.0) > UNIVERSITY (4.2)]

- [FALL 2017] Guest Instructor CIEN700: Emerging Technologies in Civil Engineering.

@ University of Maryland College Park

- [FALL 2015] Teaching Assistant ENCE 677: OR Models for Transportation Systems Analysis. Department of Civil & Environmental Engineering, University of Maryland, College Park.
- [FALL 2015] Teaching Assistant ENCE 360: Analysis of Civil Engineering Systems. Department of Civil & Environmental Engineering, University of Maryland, College Park.

@ Yonsei University

- [SPRING 2006] Teaching Assistant. Transportation Modeling, Yonsei University
- [FALL 2005] Teaching Assistant. Decision Theory. Yonsei University
- [SPRING 2005] Teaching Assistant. Traffic Engineering. Yonsei University

STEM ACTIVITIES

- Committee Chair for selecting NASA JPL summer fellows from NCA&T (2019-2020).
- Collaborating with USDOT Intelligent Transportation Systems, Joint Program Office for Professional Capacity Building Program to build training products to help improve existing resources, interact with representatives from public and private agencies to understand the evolution of the workforce, and work together to identify ITS training and education needs at various levels.
- Committee Member for selecting Chancellor's Distinguished Fellows at NCA&T

UNIVERSITY LEVEL COMMITTEE

- Committee Co-chair of Tenure-track faculty search for Transportation Engineering, Civil Engineering Department (one faculty on-going)
- Committee chair of Tenure-track faculty search for Computational Science and Engineering Department (two faculties hired)

27 GRADUATE STUDENTS AT NCAT: 17 (SUPERVISOR) + 10 (THESIS COMMITTEE)

PhD Students (12)

- Nigel Pugh, Chancellor's Distinguished Fellows (Expected 2022).
- Niharika Deshpande, PhD Student (Expected 2023).
- Jordanne Devonport, PhD Student (Expected 2023).
- Terrance Smith, PhD Student (Expected 2022).
- Antoine Crite, PhD Student (Expected 2023).
- Larkin Folsom, PhD Candidate (Defended 2020).
- Justice Darko, PhD Candidate (Expected 2022).
- Yaa Aqua, PhD Candidate (2019-2020).
- Khadijeh Shirzad, PhD Student (2019-2020).
- Shaun Little, Chancellor's Distinguished Fellows (2018-2020).
- Robert Eshun, PhD Student (2019-2020).
- Eugene Uwiragiye, PhD Student (2018).

M.S. Students (5)

- Genoba Parker (Expected May 2022)
- Ni Su, Civil Engineering (Graduated July 2019, hired by North Carolina Department of Transportation)
- Deion Waddell (Graduated July 2018, hired by Northrop Grumman)
- Yaqeen Salatneh (Graduated Dec 2017)
- Amber Sherman (TBD)

Master's Thesis Committee Member (2)

- Sean Seur, Industrial and Systems Engineering
- K Vinh, Electrical and Computer Engineering (Graduated December 2018, hired by US Army Research Laboratory)

Dissertation Defense Committee Member (8)

- Cynthia Glass
- Ali Alwehaibi
- Ahmed Al Hamoud
- Yogesh Kale
- Saud Alshahrani
- Sulocahana Deshmukh
- Fahd Alrawaili
- Nicole Allen

STUDENTS ADVISING AT UMASS AMHERST: 3

PhD Students (3)

- Somaye Garmroudi
- Xilian Xu (Graduated in 2019 and currently PostDoc at UMN)
- Sayeeda Bint Ayaz