KHALED ABDELGHANY

Department of Civil and Environmental Engineering
Southern Methodist University
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▪ WORK EXPERIENCE

- Professor – Department of Civil and Environmental Engineering, Southern Methodist University (August 2022 – Present)
- Professor and Interim Chair – Department of Civil and Environmental Engineering, Southern Methodist University (January 2022 – August 2022)
- Professor – Department of Civil and Environmental Engineering, Southern Methodist University (September 2017 – December 2021)
- Fellow, Hunt Institute of Engineering and Humanity, Southern Methodist University (October 2017 - present)
- Associate Professor and Chair – Department of Civil and Environmental Engineering, Southern Methodist University (September 2011 - September 2016).
- Associate Professor and Associate Chair –Department of Civil and Environmental Engineering, Southern Methodist University (August 2010 - August 2011)
- Assistant Professor – Department of Civil and Environmental Engineering – Southern Methodist University (August 2004 - July 2010)
- Senior Analyst - Research and Development - Information Services Division, United Airlines (June 2001 – August 2004)
- Graduate Research Assistant - Department of Civil Engineering - Center for Transportation Research, the University of Texas at Austin (August 1996 – June 2001).
- Graduate Research/Teaching Assistant - Department of Civil Engineering (Public Works) – Cairo University, Egypt (August 1992 – June 1996)

▪ EDUCATION

Ph.D. Civil Engineering	The University of Texas at Austin	August 2001
M.Sc. Civil Engineering	Cairo University, Egypt	May 1996
B.Sc. Civil Engineering	Cairo University, Egypt	May 1992

Dissertation title: *Stochastic Dynamic Traffic Assignment for Intermodal Transportation Networks with Consistent Information Supply Strategies* - Advisor: Prof. Hani Mahmassani

▪ FUNDED RESEARCH PROJECTS

1.	DFW Clean Ports Planning for Clean Air			
	The U.S. Environmental Protection Agency – Clean Ports Program			
	Co-PI: Khaled Abdelghany	Collaborators: Scott Douglas (PI)	01/01/2025 12/31/2027	SMU $1,200,000
2.	PANORAMA: An Interpretable Context-Aware AI Framework for Integrated Real-Time Intersection Detection and Signal Optimization			
	The U.S. Department of Transportation (FHWA) - The Exploratory Advanced Research (EAR) Program (BAA: No. 693JJ3-22-BAA-0001)			

	PI: Khaled Abdelghany	Collaborators: M. Hunter at Georgia Tach and M. Khodayar at The University of Tulsa	10/2023 09/2026	SMU $1,219,040
3.	Engine: An Inclusive Innovation Ecosystem and Economic Development Engine for Transforming the North Central Texas Logistics Industry			
	National Science Foundation			
	PI: Khaled Abdelghany	Collaborators: Terry Pohlen (UNT); Goutam Da (UTA); Lakesha Reynor (Dallas College); Michael Gaffney (SEOU); and Victor Fishman (TRA)	05/2023 05/2025	SMU $174,999
4.	A Planning Process to Help the North Texas Region Prepare for Automated Transportation and Related Technologies			
	North Central Texas Council of Governments/Kittelson Inc.			
	PI: Khaled Abdelghany	Collaborators: Abby Morgan (Kittelson) Behruz Paschai (Texas A&M TTI) Janille Smith-Colin (SMU)	11/2020 09/2022	SMU $121,490
5.	SAFE-NET: An Integrated Connected Vehicle and Computing Platform for Public Safety Applications			
	The National Institute of Standards and Technology (NIST), U.S. Department of Commerce			
	PI: Khaled Abdelghany	Collaborators: Barbara Minsker and Michael Hahsler (SMU)	06/2017 05/2020	SMU $1,343,952
6.	A Connected Vehicle Platform for Intelligent Transportation and Smart City Applications			
	Texas Research Alliance			
	PI: Khaled Abdelghany	Collaborators: Dinesh Rajan and Joseph Camp (SMU)	05/2016 05/2017	SMU $40,000
7.	Network Performance Monitoring and Distributed Simulation			
	Georgia Institute of Technology/U.S. Department of Energy/ARPA-E			
	PI: Khaled Abdelghany	Collaborators: Sub-contract to Georgia Tech	01/2016 05/2018	SMU $200,000
8.	EAGER: Integrated Planning and Operation of Electricity-Transportation Networks for Wireless Electric Vehicle Charging			
	National Science Foundation			
	PI: Khaled Abdelghany	Collaborators: Mohammad Khodayar and Halit Uster (SMU)	09/2015 08/2016	SMU $154.920
9.	Analysis, Modeling and Simulation Testbed for Active Transportation Demand Management and Dynamic Mobility Applications			
	The U.S. Department of Transportation			

	PI: Khaled Abdelghany	Collaborators: Sub-contract to Booz Allen Hamilton	12/2014 12/2016	SMU $249,000
10.	Technical Support for the U.S. 75 Integrated Corridor Management Demonstration - Stage 3 – Phase 3: Design and Build Phases			
	The U.S. Department of Transportation/Dallas Area Rapid Transit			
	PI: Khaled Abdelghany	Collaborators: None	12/2013 12/2015	SMU $140,000
11.	Integrated Corridor Management for the U.S. 75 Corridor in Dallas, Texas - Stage 3 - Phase 2: Decision Support System for Real-Time Traffic Management			
	The U.S. Department of Transportation/Dallas Area Rapid Transit			
	PI: Khaled Abdelghany	Collaborators: Dallas Area Rapid Transit	10/2012 05/2013	SMU $181,000
12.	Integrated Corridor Management for the U.S. 75 Corridor in Dallas, Texas - Stage 3 - Phase 1: Decision Support System for Real-Time Traffic Management			
	U.S. Department of Transportation/Dallas Area Rapid Transit			
	PI: Khaled Abdelghany	Collaborators: Dallas Area Rapid Transit	09/2011 09/2012	SMU $282,000
13.	Integrated Corridor Management for the U.S. 75 Corridor in Dallas, Texas Stage 2: Analysis, Modeling and Simulation			
	The U.S. Department of Transportation/Dallas Area Rapid Transit			
	PI: Khaled Abdelghany	Collaborators: Dallas Area Rapid Transit	09/2008 03/2010	SMU $125,000
14.	Capacity Planning for Highway Construction Projects			
	Texas Department of Transportation. University of Texas-Austin/CTR			
	PI: Khaled Abdelghany	Collaborators: University of Texas at Austin	09/2007 08/2009	SMU $50,000
15.	Integrated Corridor Management Study for U.S. 75 Dallas, Texas Stage 1			
	U.S. Department of Transportation/Dallas Area Rapid Transit			
	PI: Khaled Abdelghany	Collaborators: Dallas Area Rapid Transit	11/2006 12/2007	SMU $60,191
16.	Toll Pricing Model for Managed Lanes, Texas Department of Transportation			
	Texas Department of Transportation			
	PI: Khaled Abdelghany	Collaborators: The University of Texas-Arlington	02/2007 09/2008	SMU $12,000
17.	Investigating Alternative Forms of Commuting			
	North Texas Clean Air Coalition			
	PI: Khaled Abdelghany	Collaborators: None	10/2006 12/2006	S.M.U $5,000
18.	DFW Airport Intelligence Transportation Systems Master Plan			
	North Central Texas Council of Governments			
	PI: Khaled Abdelghany	Collaborators: PB-Farradyne, Dallas	03/ 2006 08/2006	SMU $14,462

- SMU is not eligible to receive research funding from the Texas Department of Transportation.

▪ PROFESSIONAL ACTIVITIES

- Associate Editor, *IEEE Open Journal of Intelligent Transportation Systems* (2023 - present)
- Associate Editor, *IEEE Transactions on Transportation Electrification* (2023 - present)
- Editorial Board Member, *Transportation Research Record*, Journal of the Transportation Research Board (2023 - present)
- Member, Transportation Research Board Committee on Artificial Intelligence and Advanced Computing (2020 - present)
- Co-Chair, Transportation Research Board Subcommittee on Ethics and Equity in Artificial Intelligence and Advanced Computing (2023 - present)
- External evaluator for six tenure and promotion cases for U.S. universities.
- Organization Committee Member: the TRB Conference on Data and AI for Transportation Advancement, May 27-29, 2025, Seattle, WA.
- Proposal review panelist for NSF CMMI/CIS CAREER proposals, 2013; NSF CMMI/CIS proposals, 2015; and NSF CNS/S&CC proposals, 2017.
- Regular reviewer of research proposals submitted to Qatar Foundation and Rand Foundation.
- Member, American Society of Civil Engineers (ASCE).
- Invited Keynote Speaker at the IEEE International Conference on Smart Computing and Applications, KSA, February 2023.
- Invited guest speaker at Georgia Institute of Technology, University of Texas, El Paso, Hail University (KSA), American Airlines, Southwest Airlines, and ITE-DFW Chapters.
- Served on the Ph.D. dissertation supervision committee of students in the departments of Computer Science and Engineering, Electrical and Computer engineering, and Operations Research and Engineering Management.

▪ ADMINISTRATIVE ACCOMPLISHMENTS AT SMU

- SMU Internationalization Steering Committee, Member, January 2023 – Present
- Lyle P&T Committee, Chair, 2022-2023 Academic Year (four cases)
- Lyle P&T Committee, Member, 2021-2022 Academic Year (three cases)
- SMU Faculty Senate, Member, September 2019 to May 2022
- Collaborated with the Civil and Environmental Engineering Department's Advisory Board and faculty members to develop the department's strategic plan.
- Recruited and hired three new faculty members for the Civil and Environmental Engineering Department.
- Co-chaired the initiation and direction of the professional M.A. degree in Sustainability and Development offered by the Civil and Environmental Engineering Department.
- Administered the ABET review for the Civil Engineering and Environmental Engineering programs in Fall 2014 (resulting in Perfect ABET accreditation).
- Administered the tenure evaluation of two faculty members at the Civil and Environmental Engineering Department at SMU.
- Administered the renewal process for three faculty members at the Civil and Environmental Engineering Department at SMU.
- Served as co-chair of the search committee for the Director of the Hunt Institute for Engineering and Humanity at SMU.

▪ PUBLICATIONS

Google Scholar:
https://scholar.google.com/citations?hl=en&user=4ZKkkp4AAAAJ&view_op=list_works&sortby=pubdate
h-index: 27 i10-index: 57 Citations: 2912 (Accessed on 12/15/2024)

Books

- Ahmed Abdelghany and Khaled Abdelghany. Airline Network Planning and Scheduling. Wiley ISBN: 978-1-119-27586-2. November 2018.
  Book Link: https://www.oreilly.com/library/view/airline-network-planning/9781119275862/

- Ahmed Abdelghany and Khaled Abdelghany. Modeling Applications in the Airlines Industry. Taylor and Francis Group; 1 Edition (April 28, 2010)
  ISBN-13: 978-0754678748 ISBN-10: 0754678741.
  Book Link:
  https://www.taylorfrancis.com/books/mono/10.4324/9781315595818/modeling-applications-airline-industry-ahmed-abdelghany-khaled-abdelghany

Peer-Reviewed Published Journal Articles
(Underlined authors are current/former students/post-docs)

1. Abdelghany, A., **Abdelghany, K.**, & Guzhva, V. S. (2024). Schedule-level optimization of flight block times for improved airline schedule planning: A data-driven approach. *Journal of Air Transport Management*, *115*, 102535.
2. Abdelghany, A., **Abdelghany, K.**, & Azadian, F. (2023). "The Airline Seat Capacity Allocation Problem: An Expected Marginal Profit Approach." *Journal of Air Transport Management*, 112, 102465.
3. **Abdelghany, K.**, Roustaee, P., Hassan, A., Karak, A., & Khodayar, M. (2023). "Equilibrium-based Workload Balancing for Robust Emergency Response Operation." *Networks and Spatial Economics*, 1-39.
4. Abdelghany, A., **Abdelghany, K.**, & Huang, C. W. (2023). "An Integrated Reinforced Learning and Network Competition Analysis for Calibrating Airline Itinerary Choice Models with Constrained Demand." In *Artificial Intelligence and Machine Learning in the Travel Industry: Simplifying Complex Decision Making* (pp. 17-37). Cham: Springer Nature Switzerland.
5. Abdelghany, A., **Abdelghany, K.**, & Guzhva, V. (2023). "On the Block Time Design Problem: A Data-Driven Optimization Model for Benchmarking the Airlines' Current Practice." Available at SSRN 4399514.
6. Abdelghany, A., Guzhva, V., & **Abdelghany, K.** (2023). "The Limitation of Machine-Learning Based Models in Predicting Airline Flight Block Time." *Journal of Air Transport Management*, 107, 102339.
7. Lotfi, S., & **Abdelghany, K.** (2022). "Ride Matching and Vehicle Routing for On-Demand Mobility Services." *Journal of Heuristics*, 28(3), 235-258.

8. Jaad, A., & **Abdelghany, K**. (2021). "The Story of Five MENA Cities: Urban Growth Prediction Modeling Using Remote Sensing and Video Analytics." *Cities*, 118, 103393.
9. Fakhrmoosavi, F., Zockaie, A., & **Abdelghany, K.** (2021). "Incorporating Travel Time Reliability in Equitable Congestion Pricing Schemes for Heterogeneous Users and Bimodal Networks." *Transportation Research Record*, 2675(11), 754-768.
10. Abdelghany, A., **Abdelghany, K.**, & Huang, C. W. (2021). "An Integrated Reinforced Learning and Network Competition Analysis for Calibrating Airline Itinerary Choice Models with Constrained Demand." *Journal of Revenue and Pricing Management*, 20(3), 227-247.
11. Alghuson, M., **Abdelghany, K.**, & Hassan, A. (2021). "Telematics-Based Traffic Law Enforcement and Network Management System for Connected Vehicles." *IEEE Internet of Things Journal*, 8(15), 12384-12397.
12. Mubarak, M., Uster, H., **Abdelghany, K.**, & Khodayar, M. (2021). "Network Design for In-motion Wireless Charging of Electric Vehicles in Urban Areas." *Transportation Research Part E*, 145, 102179.
13. Abdelghany, A., **Abdelghany, K.**, & Ching-Wen Huang. (2020). "An Integrated Reinforced Learning and Network Competition Analysis for Calibrating Airlines Itinerary Choice Models with Constrained Demand." *Journal of Revenue and Pricing Management (JROM)*, Special Issue on: Artificial Intelligence/Machine Learning in Travel.
14. **Abdelghany, K.** (2020). "Thirty-five Years of Raising the Bars." *Computer-Aided Civil and Infrastructure Engineering*, DOI: 10.1111/mice.12513 (Journal Editorial - Invited).
15. Alghuson, M.,& Abdelghany, K. (2019). "Toward an Integrated Traffic Law Enforcement and Network Management in Connected Vehicle Environment: Conceptual Model and Survey Study of Public Acceptance." *Journal of Accident Analysis and Prevention*, 133, 105300.
16. Jaad, A., & **Abdelghany, K.** (2019). "Modeling Urban Growth Using Video Prediction Technology: A Time-Dependent Convolutional Encoder-Decoder Architecture." *Computer-Aided Civil and Infrastructure Engineering*, DOI: 10.1111/mice.12503.
17. Fakhrmoosavi, F., Zockaie, A., **Abdelghany, K.**, & Hashemi, H. (2019). "An Iterative Learning Approach for Network Contraction: Path Finding Problem in Stochastic Time-Varying Networks." *Computer-Aided Civil and Infrastructure Engineering*, Volume 34, pp. 859–876. DOI: 10.1111/mice.12460.
18. Karak, A., & **Abdelghany, K.** (2019). "The Hybrid Vehicle-Drone Routing Problem for Pick-Up and Delivery Services." *Transportation Research Part C: Emerging Technologies*, Volume 102, pp. 427-449.
19. Lotfi, S., **Abdelghany, K.**, & Hashemi, H. (2019). "Modeling Framework and Decomposition Scheme for On-Demand Mobility Services with Ridesharing and Transfer." *Computer-Aided Civil and Infrastructure Engineering*, Volume 34, pp. 21–37.
20. Abdelghany, A., Mahmassani, H., **Abdelghany, K.**, Al-Ahmadi, H., & Alhalabi, W. (2018). "Incidents in High-Volume Elongated Crowd Facilities: A Simulation-Based Study." *Simulation: Transactions of the Society for Modeling and Simulation International*, 1–21. DOI: 10.1177/0037549718794882.
21. Hashemi, H., & **Abdelghany, K.** (2018). "End-to-End Deep Learning for Real-Time Traffic Network Management Systems." *Computer-Aided Civil and Infrastructure Engineering*, 33, pp. 849–863.

22. **Abdelghany, K.**, Abdelghany, A., Mahmassani, H., & Kaysi, I. (2018). "Equitable Access to Services in Large-Scale Pedestrian Facilities." *Transportation Research Record: Journal of the Transportation Research Board*, 2672: 35, 79-89.
23. Hashemi, H., **Abdelghany, K.**, & Khodayar, M. (2018). "A Real-Time Decision Support System for Robust Traffic Network Management." *IEEE Transactions on Intelligent Transportation Systems*. DOI: 10.1109/TITS.2018.2809642.
24. Hassan, A., & **Abdelghany, K.** (2017). "Dynamic Origin-Destination Demand Estimation using Separable Programming Approach." *Advances in Transportation Studies: an international Journal Section B*, 43, pp. 93-110.
25. Vafamehr, A., Khodayar, M., & **Abdelghany, K.** (2017). "Oligopolistic Competition among Cloud Providers in Electricity and Data Networks." *IEEE Transactions on Smart Grid*, 2017 DOI: 10.1109/TSG.2017.2778027.
26. Abdelghany, A., **Abdelghany, K.**, & Azadian, F. (2017). "A Modeling Framework for Airline Flight Schedule Optimization under Competition." *Computers and Operations Research*, 87, 20-39.
27. Manshadi, S., Khodayar, M., **Abdelghany, K.**, & Uster, H. (2017). "Wireless Charging of Electric Vehicles in Electricity and Transportation Networks." *IEEE Transactions on Smart Grid*. DOI 10.1109/TSG.2017.2661826.
28. Hashemi, H., & **Abdelghany, K.** (2016). "Real-Time Traffic Network State Estimation and Prediction with Decision Support Capabilities: Application to Integrated Corridor Management." *Transportation Research Part C: Emerging Technologies*, 73, 128-146.
29. Hashemi, H., **Abdelghany, K.**, & Abdelghany, A. (2016). "A Multi-Agent Learning Approach for Online Calibration and Consistency Checking of Real-Time Traffic Network Management Systems." *Transportmetrica B: Transport Dynamics*, 1-21. DOI: 10.1080/21680566.2016.1225270.
30. Abdelghany, A., **Abdelghany, K.**, & Mahmassani, H. (2016). "A Hybrid Simulation-Assignment Modeling Framework for Crowd Dynamics in Large-Scale Pedestrian Facilities." *Transportation Research Part A: Policy and Practice*, 86, 159-176.
31. Abdelghany, K., Hashemi, H., & Alnawaiseh, A. (2016). "Parallel All-Pairs Shortest Path Algorithm: A Network-Decomposition Approach." *Transportation Research Record: Journal of the Transportation Research Board*, 2567, 95-104.
32. Hashemi, H., & **Abdelghany, K.** (2015). "Real-Time Traffic Network State Prediction for Proactive Traffic Management: Simulation Experiments and Sensitivity Analysis." *Transportation Research Record: Journal of the Transportation Research Board*, 3224, 22-31.
33. Hashemi H., & **Abdelghany, K.** (2015). "An Integrated Methodology for Online Calibration of Real-time Traffic Network Management Systems." *Transportation Research Record: Journal of the Transportation Research Board*, 2528, 106-115.
34. Hashemi H., Hassan, A., **Abdelghany, K.**, & Alnawaiseh, A. (2015). "Flow-based and Density-based Time-Dependent Demand Estimation for Congested Urban Transportation Networks." *Transportation Research Record: Journal of the Transportation Research Board*, 2498, pp. 27-36.
35. Abdelghany, A., **Abdelghany, K.**, Mahmassani, H., & Alhalabi, W. (2014). "Modeling Framework for Optimal Evacuation of Large-Scale Crowded Pedestrian Facilities." *European Journal of Operational Research*, 237, 1105-1118.

36. Alnawaiseh, A., **Abdelghany, K.**, & Hassan, A. (2014). "A Rollback Approach for Demand Consistency Checking of Real-Time Traffic Network State Estimation Models." *Transportation Research Record: Journal of the Transportation Research Board*, 2467, pp. 30-39.
37. Etemadnia, H., **Abdelghany, K.**, & Hassan, A. (2014). "A Network Partitioning Methodology for Distributed Traffic Management Applications." *Transportmetrica*, 10(6), 518-532.
38. Hassan, A., **Abdelghany, K.**, & Semple, J. (2013). "Dynamic Road Pricing for Revenue Maximization: Modeling Framework and Solution Methodology." *Transportation Research Record: Journal of the Transportation Research Board*, 2345, 100-108.
39. Etemadnia, H., Hassan, A., Goetz, S., & Abdelghany, K. (2013). "Wholesale Hub Location in Food Supply Chain Systems." *Transportation Research Record: Journal of the Transportation Research Board*, 2379, 80-89.
40. Abdelghany, A., **Abdelghany, K**., Mahmassani, H., & Al-Zahrani, A. (2012). "A Dynamic Simulation-Assignment Model for Pedestrian Movements in Crowded Networks." *Transportation Research Record: Journal of the Transportation Research Board*, 2316, 95-105.
41. Etemadnia, H., **Abdelghany, K.**, & Hariri, S. (2012). "Towards an Autonomic Architecture for Real-Time Traffic Network Management." *Journal of Intelligent Transportation Systems: Technology, Planning, and Operations*, 16(2), 45-59.
42. Etemadnia, H., & **Abdelghany, K.** (2011). "A Distributed Origin-Destination Demand Estimation Approach for Real-time Traffic Network Management." *Transportation Planning and Technology*, 34(2), 45-59.
43. Abdelghany, A., **Abdelghany, K.**, & Mahmassani, H., (2010). "A Simulation Model to Evaluate Evacuation Strategies for Large-Scale Congested Pedestrian Facilities." *Transportation Research Record: Journal of the Transportation Research Board*, 2198, 152-160.
44. Hassan, A., **Abdelghany, K.**, Abdelghany, A. (2010). "Modeling Framework for Evaluating Airlines Schedule Sensitivity to Airports Congestion Pricing." *Transportation Research Record: Journal of the Transportation Research Board*, 2177, 33-40.
45. Etemadnia, H., & **Abdelghany, K.** (2009). "Distributed Approach for Dynamic Origin-Destination Demand Matrix." *Transportation Research Record: Journal of the Transportation Research Board*, 2105, 127-134.
46. Hassan, A., **Abdelghany, K.**, & Abdelghany, A. (2009). "Modeling Framework for Airlines Competition in the U.S. Domestic Network." *Transportation Research Record: Journal of the Transportation Research Board*, 2106, 47-56.
47. Abdelghany, A., Sattayalekha, W., & **Abdelghany, K.** (2009). "On Airlines Code Share Optimisation: A Modeling Framework and Analysis." *International Journal of Revenue Management*, 3(3), 307-330.
48. Abdelghany, A., & **Abdelghany, K.** (2008). "A Micro-Simulation Approach for Airlines Competition Analysis and Demand Modeling." *International Journal of Revenue Management*, 2(3), 287-306.
49. **Abdelghany, K.**, Abdelghany, A., & Ekollu, G. (2008). "An Integrated Decision Support Tool for Airlines Schedule Recovery during Irregular Operations." *European Journal of Operational Research*, 185(2), 825-848.

50. **Abdelghany, K.**, Mahmassani, H., & Abdelghany, A. (2007). "A Modeling Framework for Bus Rapid Transit Operations Evaluation and Service Planning." *Journal of Transportation Planning and Technology*, 30(6), 571-591.
51. Abdelghany, A., & **Abdelghany, K.** (2007). "Evaluating airlines ticket distribution strategies: a simulation-based approach." *International Journal of Revenue Management*, 1(3), 231-246.
52. **Abdelghany, K.**, Abdelghany, A., & Niznik, T. (2007). "Managing severe airspace flow programs: the airlines' side of the problem." *Journal of Air Transport Management*, 13(6), 329-337.
53. Abdelghany, A., **Abdelghany, K.** (2007). "Modelling Air-Carrier's Portfolio of Business Travel." *Journal of Revenue and Pricing Management*, 6(1), 51–63.
54. Ramadan, R., El-Rewini, H., Abdelghany, K. (2007). "Optimal and approximate approaches for deployment of heterogeneous sensing devices." *EURASIP Journal of Wireless Communications and Networking* (Article ID 54731).
55. **Abdelghany, K.**, Abdelghany, A., Mahmassani, H., Abdelfatah, A. (2006). "Modeling Bus Priority Using Intermodal Dynamic Network Assignment-Simulation Methodology." *Journal of Public Transportation*, 9(5), 1-22.
56. **Abdelghany, K.**, Abdelghany, A., Narasimhan, R. (2006). "Scheduling baggage handling facilities in congested airports." *Journal of Air Transport Management*, 12(2), 76-81.
57. Abdelghany, A., **Abdelghany, K.**, Mahmassani, H., Al-Gadhi, S. (2005). "A Micro-Simulation Assignment Model for Multidirectional Pedestrian Movement in Crowded Facilities." *Transportation Research Record: Journal of the Transportation Research Board*, 1939, 123-132.
58. **Abdelghany, K.**, Abdelghany, A., Raina, S. (2005). "A model for the airlines' fuel management strategies." *Journal of Air Transport Management*, 11, 199-206.
59. **Abdelghany, K.**, Shah, S., Raina, S., Abdelghany, A. (2004). "A model for projecting flight delays during irregular operation conditions." *Journal of Air Transport Management*, 10(6), 385-394.
60. Abdelghany, A., Ekollu, G., Narasimhan, R., **Abdelghany, K.** (2004). "A proactive crew recovery decision support tool for commercial airlines during irregular operations." *Annals of Operations Research*, Special Issue on Staff Scheduling and Rostering: Theory and Applications, 127, 309-331.
61. Mahmassani, H. & **Abdelghany, K.** (2002). "Dynasmart-IP: Dynamic Traffic Assignment Meso-Simulator for Intermodal Network." In *Advanced Modeling for Transit Operations and Service Planning*, W.H.K Lam and M.G.H. Bell, Pergamon, 2002.
62. **Abdelghany, K.**, Mahmassani, H. (2001). "Dynamic Trip Assignment-Simulation Model for Intermodal Transportation Networks." *Transportation Research Record: Journal of the Transportation Research Board*, 1771, 52-60.
63. Murray, P., Mahmassani, H., **Abdelghany, K.** (2001). "Methodology for Assessing H.O.T. Lane usage and Network Performance." *Transportation Research Record: Journal of the Transportation Research Board*, 1765, 8-15.
64. Abdelghany, A., **Abdelghany, K**., Mahmassani, H., Murray, P. (2000). "Dynamic traffic assignment in design and evaluation of high-occupancy toll lanes." *Transportation Research Record: Journal of the Transportation Research Board*, 1733, 39-48.
65. **Abdelghany, K.**, Valdez, D., Abdelfatah, A., Mahmassani, H. (1999). "Real-time Dynamic Traffic Assignment and Path-based Signal Coordination: Application to

Network Traffic Management." *Transportation Research Record: Journal of the Transportation Research Board*, 1667, 67-76.

Articles under Review

1. **Abdelghany, K.**, Paschai, B., Morgan, A. (2024). On the Evaluation of Transportation Automation in Megacities: The Dallas Fort-Worth Case Study. *Case Studies on Transport Policy* (First round of review).
2. Karak, A., **Abdelghany, K.** (2024). Evaluating the Impact of The Flying Line of Sight Regulatory Rule on Integrated Vehicle-Drone Urban Delivery Systems. *Transportation Research Part E: Logistics and Transportation Review* (First round of review).

Refereed Conference Proceedings

1. Li, H., Wang, Y., Xu, X., Liu, H., Guin, A., Rodgers, M., Hunter, M., Laval, J., **Abdelghany, K.**, Guensler, R. Assessing the Time, Monetary, and Energy Costs of Alternative Modes. Proceedings of the 97th Annual Meeting of Transportation Research Board, Washington D.C., January 2018.
2. Fakhrmoosavi, F. Zockaie, A., **Abdelghany, K**., Hashemi, H., Decomposition of Stochastic Time-Varying Networks for the Path Finding Problem Considering Travel Time Correlations and Heterogeneity of Users. Proceedings of the 97th Annual Meeting of Transportation Research Board, Washington D.C., January 2018.
3. Hashemi, H., **Abdelghany, K**. (2016). Evaluating The Effectiveness of Traffic Network Management Systems For Congested Corridors: A Simulation Testbed And Analysis, Proceedings of the 95th Annual Meeting of Transportation Research Board, Washington D.C. 2016.
4. Hashemi, H., **Abdelghany, K.** (2014). A Simulation Testbed for Evaluating Active Traffic Network Management Systems, in the proceedings of the 21st World Congress on Intelligent Transport Systems, Detroit, U.S.A.
5. **Abdelghany, K**., Etemadnia, H. (2012). On the Network Partitioning of Large Urban Transportation Networks. (pp. 42-46). Dubai: International Conference on Transport, Civil, Architecture and Environment engineering (ICTCAEE'2012) December 26-27, 2012.
6. Alnawasieh, A., **Abdelghany, K**. (2012). TeamSense: Energy-Efficient Autonomous Mobile Wireless Sensor Networks for Object Tracking. (pp. 660-665). Limassol: The 8th International Wireless Communication and Mobile Computing.
7. Ramadan, R., **Abdelghany, K**., El-Rewini, H., Houri, M. (2007). Impact of Heterogeneity on the Deployment of Sensor Networks. Austin: of the International Workshop on Performance Control in Wireless Sensor Networks.
8. Ramadan, R., **Abdelghany, K**., El-Rewini, H. (2006). On the Optimal Deployment of Heterogeneous Sensing Devices. (pp. 898- 905). the 4th ACS/IEEE International Conference on Computer Systems and Applications.
9. Ramadan, R., Alnawaiseh, A., El-Rewini, H., **Abdelghany, K**. (2006). Parallel Meta-Heuristic Approaches for Deployment of Heterogonous Sensing Devices. (pp. 898-905). San Francisco: of the ISCA Parallel and Distributed Computing Systems conference.

10. Ramadan, R., **Abdelghany, K**., El-Rewini, H. (2006). SensDep: A Design Tool for the Deployment of Heterogeneous Sensing Devices, Maryland: Proceedings of the second IEEE Workshop on Dependability and Security in Sensor Networks and Systems.

Sample of Technical Reports

- Abby Morgan, Janille Smith-Collin, **Khaled Abdelghany**, Rachel Grosso, Sakoat Hossan, Bryce Grame. A Planning Process to Help the North Texas Region Prepare for Automated Vehicles and Related Technologies: Existing Conditions Report (Task 3). A Report Submitted to North Central Texas Council of Governments. September 2021.

- **Khaled Abdelghany**, Behruz Paschai, Jory Dille, Mike Chaney, Abby Morgan. A Planning Process to Help the North Texas Region Prepare for Automated Vehicles and Related Technologies: Scenario Development Report (Task 4.1). A Report Submitted to North Central Texas Council of Governments. January 2022.

- **Khaled Abdelghany**, Behruz Paschai, Mike Chaney, Like Liu, Mike Aronson, Abby Morgan. A Planning Process to Help the North Texas Region Prepare for Automated Vehicles and Related Technologies: Scenario Evaluation Report (Task 4.3). A Report Submitted to North Central Texas Council of Governments. December 2022.

- Balaji Yelchuru, **Khaled Abdelghany**, Ismail Zohdy, Sashank Singuluri, Raj Kamalanathsharma. Analysis, Modeling, and Simulation (A.M.S.) Testbed Development and Evaluation to Support Dynamic Mobility Applications (D.M.A.) and Active Transportation and Demand Management (ATDM) Programs Dallas Testbed Analysis Plan. **U.S. Department of Transportation** — May, 2016 - Contract DTFH61-12-D-00041 https://ntl.bts.gov/lib/59000/59300/59362/FHWA-JPO-16-373.pdf

- Balaji Yelchuru, Raj Kamalanathsharma, Xuesong Zhou, Pitu Mirchandani, Pengfei Li, Brandon Nevers, **Khaled Abdelghany**, Paolo Rinelli, Hani Mahmassani, Thomas Bauer, Jingtao Ma. Analysis, Modeling, and Simulation (A.M.S.) Testbed Development and Evaluation to Support Dynamic Mobility Applications (D.M.A.) and Active Transportation and Demand Management (ATDM) Programs — Gaps, Challenges and Future Research
  U.S. Department of Transportation – May, 2017 - Contract DTFH61-12-D-00041
  https://ntl.bts.gov/lib/62000/62200/62282/FHWA-JPO-16-391.pdf

▪ RECENT PRESENTATIONS

1. Abdelghany, A. and abdelghany K., “Flight Block Time Design for Airline Schedule Planning,” AGIFORS Annual Meeting (online), May 2022.
2. Fakhrmoosavi , F., Zokaei, Ali., and Abdelghany, K. “Incorporating Travel Time Reliability in Equitable Congestion Pricing Schemes for Heterogeneous Users and Bimodal Networks,” the 100th Annual Meeting of Transportation Research Board, Washington D.C., January 2021.

3. Karak, A. and Abdelghany, K., "Incorporating the Flying Line of Sight Rule in the Integrated Vehicle–Drone Routing Problem for Product Pickup and Delivery Services", the 99th Annual Meeting of Transportation Research Board, Washington D.C., January 2020.
4. Lotfi, S., and Abdelghany K., "Ride matching and Vehicle Routing for On-Demand Mobility Services with Ridesharing and Transfer Options", the 99th Annual Meeting of Transportation Research Board, Washington D.C., January 2020.
5. Alghuson, M., Abdelghany, K. and Hassan, A., "Score-Based Traffic Network Management in Connected Vehicle Environment: A Modeling Framework and Simulation Experiments", the 99th Annual Meeting of Transportation Research Board, Washington D.C., January 2020.
6. Alghuson, M., Abdelghany, K, and Ahmed Hassan. Traffic Law Enforcement and Management for Connected Vehicle Environment: Conceptual Model and Public Acceptance. Transportation Research Board Annual Meeting, Washington D.C., January 2019.
7. Karak, A., Abdelghany, K. The Hybrid Vehicle-Drone Routing Problem for Pick-up and Delivery Services. Transportation Research Board Annual Meeting, Washington D.C., January 2019.
8. Abdelghany, K., Abdelghany, A., Mahmassani, H., Kaysi, I., "Equitable Access to Services in Large-Scale Pedestrian Facilities", the 97th Annual Meeting of Transportation Research Board, Washington D.C., January 2018.
9. Li, H., Wang, Y., Xu, X., Liu, H., Guin, A., Rodgers, M., Hunter, M., Laval, J., Abdelghany, K., Guensler, R., "Assessing the Time, Monetary, and Energy Costs of Alternative Modes", the 97th Annual Meeting of Transportation Research Board, Washington D.C., January 2018.
10. Fakhrmoosavi, F. Zockaie, A., Abdelghany, K., Hashemi, H., "Decomposition of Stochastic Time Varying Networks for the Path Finding Problem Considering Travel Time Correlations and Heterogeneity of Users", the 97th Annual Meeting of Transportation Research Board, Washington D.C., January 2018.
11. Mubarak, M., Uster, H., Abdelghany, K., Khodayar, M., "Network Design for In-motion Wireless Charging of Electric Vehicles in Urban Areas", INFORMS Annual Meeting, Nashville, TN November 13-16, 2016.
12. Hashemi, H., Abdelghany, K., Alnawaiseh, A., "A Distributed Hierarchal Shortest Path Algorithm for Large-Scale Transportation Networks", INFORMS Annual Meeting, Philadelphia November 1-4, 2015.
13. Hashemi, H., Abdelghany, K., "A Multi-Agent Learning Approach for Online Calibration of Real-time Traffic Network Management Systems", INFORMS Annual Meeting, Philadelphia November 1-4, 2015.
14. Hashemi, H., Abdelghany, K., "An Integrated Methodology for Online Calibration of Real-time Traffic Network Management Systems", Transportation Research Board Annual Meeting, Washington D.C., January 2015.
15. Alnawaiseh, A., Abdelghany, K., Hashemi, H., Hassan, "Flow-Based and Density-Based Time-Dependent Demand Estimation for Congested Urban Transportation", Transportation Research Board Annual Meeting, Washington D.C., January 2015.

16. Abdelghany, K., Hashemi, H., "Real-time Traffic Network State Prediction for Proactive traffic Management: Simulation Experiments and Sensitivity Analysis", Transportation Research Board Annual Meeting, Washington D.C., January 2015.
17. Abdelghany, A., Abdelghany, K., Airline Schedule Optimization Model with Efficient Aircraft and Crew Rotations, INFORMS Annual Meeting, San Francisco, November 2014.
18. Hashemi, H., Abdelghany, K., Alnawaiseh, A., An Integrated Methodology for Online Calibration of Real Time Simulation Based Dynamic Traffic Assignment, INFORMS Annual Meeting, San Francisco, November 2014.
19. Alnawaiseh, A., Abdelghany, K., Hashemi, H., Dynamic Origin-Destination Demand Estimation for Congested Traffic Networks, INFORMS Annual Meeting, San Francisco, November 2014.
20. Hashemi, H., Abdelghany, K., A Simulation Testbed for Evaluating Active Traffic Network Management Systems, the 21st World Congress on Intelligent Transport Systems, Detroit, September 2014.
21. Abdelghany, K., Alnawaiseh, A., Hassan, A., Hashemi, H., A Rollback Approach for Demand Consistency Checking of Real-Time Traffic Network State Estimation Models, Transportation Research Board Annual Meeting, Washington D.C., January 2014.
22. Hashemi, H., Abdelghany, K., Hassan, A., Lazar, M., Real-Time Traffic Network State Estimation and Prediction with Decision Support Capabilities: Application to Integrated Corridor Management, Transportation Research Board Annual Meeting, Washington D.C., January 2013.
23. Abdelghany, K., Hassan, A., Semple, J., Dynamic Road Pricing for Revenue Maximization: Modeling Framework and Solution Methodology, Transportation Research Board Annual Meeting, Washington D.C., January 2013.
24. Abdelghany, A., Abdelghany, K., Airline Flight Schedule Optimization, INFORMS Annual Meeting, Minnesota, October 2013.
25. Abdelghany, A., Abdelghany, K., A Multi-Objective Optimization Model for Flight Schedule Planning, AGIFORS Annual Meeting on Scheduling and Strategic Planning, May 2013.
26. Hashemi, H., Abdelghany, K., Hassan, A., Lazar, M., Real-Time Traffic Network State Estimation and Prediction with Decision Support Capabilities: Application to Integrated Corridor Management, Transportation Research Board Annual Meeting, Washington D.C., January 2013.
27. Abdelghany, K., Poe, C., Olyai, K., Real-Time Traffic Network State Estimation and Prediction: Application to the U.S. 75 Corridor in Dallas, Texas, Transportation Research Board Annual Meeting, Washington D.C., January 2013.
28. Etemadnia, H., Hassan, A., Goetz, S., Abdelghany, K., Wholesale Hub Location in Food Supply Chain Systems, Transportation Research Board Annual Meeting, Washington D.C., January 2013.
29. Abdelghany, K., Abdelghany, A., Mahmassani, H., Southwest Airlines H.Q., Southwest Airlines: Enhanced Network Optimizer, invited, Dallas, October 2012.
30. Abdelghany, A., Abdelghany, K., Mahmassani, H., Al-Zahrani, A., A Dynamic Simulation-Assignment Model for Pedestrian Movements in Crowded Networks, Transportation Research Board Annual Meeting, Washington D.C., January 2012.

- **LIST OF JOURNALS (**published in 27 different journals**)**

1. Transportation Research Part A: Policy and Practice
2. Transportation Research Part C: Emerging Technologies
3. Transportation Research Part E: Logistics and Transportation Review
4. European Journal of Operational Research
5. Journal of Networks and Spatial Economics
6. Annals of Operations Research
7. Journal of Intelligent Transportation Systems: Technology, Planning, and Operations
8. Transportation Research Record: Journal of the Transportation Research Board
9. Computer Aided Civil and Infrastructure Engineering
10. Computers and Operations Research
11. IEEE Transactions on Intelligent Transportation Systems
12. IEEE Transactions on Internet of Things
13. IEEE Transactions on Smart Grid
14. Journal of Public Transportation
15. Journal of Transportation Planning and Technology
16. Journal of Accident Analysis and Prevention
17. International Journal of Revenue Management
18. Journal of Revenue and Pricing Management
19. Journal of Air Transport Management
20. Journal of Heuristics
21. Cities
22. Simulation: Transactions of the Society for Modeling and Simulation International
23. Advances in Transportation Studies: an international Journal
24. Transportmetrica A: Transport Science
25. Transportmetrica B: Transport Dynamics
26. Journal of Wireless Communications and Networking
27. Air Traffic Control Quarterly

- **POSTDOC AND RESEARCH FELLOW SUPERVISION**

Dr. Inam Ullah Khaled January 2024 to December 2024
SMU's Department of Civil and Environmental Engineering

Dr. Gity Karimi October 2017 to July 2018
Senior Lecturer: Computer Science Department, the University of Texas at Dallas

Dr. Ala Alnawaiseh March 2012 to July 2016
Current Position: Travel Model Programmer at Denver Regional Council of Governments

Dr. Ahmed Hassan: September 2009 to February 2010
October 2011 to May 2013
December 2019 to April 2020
Current Position: Associate Professor, Department of Public Works, Cairo University

▪ THESIS/DISSERTATION SUPERVISION

Graduated:

Sepide Lotfi, Ph.D., Southern Methodist University,
Dissertation Title: Modeling Framework and Solution Methodologies for On Demand Mobility Services with Ridesharing and Transfer Options
May 2022.
Employment: Operations Research Analyst, American Airlines

Ahmed Jaad, Ph.D., Southern Methodist University
Dissertation Title: A Modeling Framework for Urban Growth Prediction Using Remote Sensing and Video Prediction Technologies: A Time-Dependent Convolutional Encoder-Decoder Architecture
May 2020.
Current Position: Assistant Professor, Umm Al-Qura University, KSA.

Moahd Alghuson, Ph.D., Southern Methodist University
Dissertation Title: An Integrated Score-Based Traffic Law Enforcement and Network Management in Connected Vehicle Environment
May 2020.
Employment: Assistant Professor, Tabuk University, KSA.

Aline Karak, Ph.D., Southern Methodist University.
Dissertation Title: Hybrid Vehicle-Drone Routing Problem for Pick-Up and Delivery Services
August 2020
Current Position: Business Analyst, Burlington., Dallas

Parya Rousraee, M.Sc., Southern Methodist University.
Thesis Title: Equilibrium-Based Workload Balancing for Robust Emergency Response Operations in Metropolitan Areas, M.Sc. Thesis, Southern Methodist University, Completed: May 2019.
Current Position: Business Analyst at Socure, San Diego, California

Hossein Hashemi, Ph.D., Southern Methodist University.
Dissertation Title: Real-Time Traffic Network Management with Decision Support Capabilities: A Modeling Framework and Simulation Experiments
December 2016.
Current Position: Senior Manager, Wal Mart Global Lab

Ala Alnawaiseh, Ph.D., Southern Methodist University.
Dissertation Title: A Modeling Framework for the Design and Evaluation of Cooperative Wireless Sensor Networks,
May 2012.
Current Position: Travel Model Programmer at Denver Regional Council of Governments

Hamideh Etemadnia, Ph.D., Southern Methodist University.
Dissertation Title: Towards Autonomic Architecture for Real-Time Traffic Management in Congested Urban Transportation Networks
Spring 2011.
Current Position: Sr. Transportation System Modeler, EST. Inc.

Ahmed Hassan, Ph.D., Southern Methodist University.
Dissertation Title: A Modeling Framework for Airlines Competition Analysis: Application to the U.S. Domestic Network, Ph.D. in Civil Engineering,
December 2009.
Current Position: Associate Professor, Department of Public Works, Cairo University

Sina Iman, M.Sc., Southern Methodist University.
Thesis Title: A Multimodal Dynamic Traffic Assignment Simulation Methodology for Integrated Corridor
December 2007.
Current Position: Transportation Engineer at AECOM, Inc.

Zeeshan Khan – PhD student starting Spring 2024.In progress
Rawda Ahmed – PhD student starting Fall 2024. In Progress.

▪ PROFESSIONAL CONSULTING

- Evaluating the third Saudi Expansion of Al-Haram Al-Sharif in Mecca, Saudi Arabia. The Saudi's Ministry of Higher Education and King Abdul-Aziz University, Saudi Arabia. (In collaboration with Prof. Hani Mahmassani at Northwestern University) - 08/2008.

- Studying Traffic Congestion Pattern in the City of Mecca, Saudi Arabia. The Saudi's Ministry of Higher Education and King Abdul-Aziz University, Saudi Arabia. (In collaboration with Prof. Hani Mahmassani at Northwestern University) - 12/2008.

- Planning of Service Facility in Makkah Central Area. SETS Consulting (In collaboration with Prof. Hani Mahmassani at Northwestern University) - 06/2011.

- Developing a Pedestrian Master Plan for Al-Masha'er Al-Mokadasah Corridor in Makkah, Saudi Arabia. The Saudi's Ministry of Higher Education, Saudi Arabia. (In collaboration with Prof. Hani Mahmassani at Northwestern University) - 06/2011.

- Evaluating the Expansion of Al-MATAF area of Al-Haram Al-Sharif in Mekkah, Saudi Arabia. The Saudi's Ministry of Higher Education and Um Al-Qura University, Saudi Arabia. (In collaboration with Prof. Hani Mahmassani at Northwestern University) - 07/2011.