

CURRICULUM VITAE

İsmail Ömer Verbas

Computational Transportation Engineer
Argonne National Laboratory
Energy Systems Division
9700 Cass Ave
Building 362 Room B-101,
Lemont, IL, 60208 USA
omer@anl.gov, +1 (847) 641-0336

August, 2018

EDUCATION

- Northwestern University**, Evanston, IL
- Ph.D. in Civil and Environmental Engineering 2014
Dissertation: “Transit Network Assignment, Simulation and Frequency Setting: Integrated Approaches and Large Scale Application”
Committee: Hani S. Mahmassani (adviser), Irina S. Dolinskaya, Yu Marco Nie, Joseph L. Schofer
 - Istanbul Technical University**, Istanbul, Turkey 2008
 - M.S. in Civil Engineering
Thesis: “Assessment of Sustainability of the Transportation System in Istanbul”
Committee: Haluk Gerçek (adviser), Ergun Gedizlioğlu, İsmail Şahin
 - Boğaziçi (Bosphorus) University**, Istanbul, Turkey 2006
 - B.S. in Mechanical Engineering

EMPLOYMENT HISTORY

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|---|-----------------------------|--------------|--------------|
| — Computational Transportation Engineer | Argonne National Laboratory | Lemont, IL | 2016-present |
| — Post-Doctoral Research Fellow | Northwestern University | Evanston, IL | 2015-2016 |
| — Graduate Research Assistant | Northwestern University | Evanston, IL | 2008-2014 |

AWARDS & HONORS

- **Best Paper Award**, 2018
given by the 7th International Workshop on Agent-based Mobility, Traffic and Transportation Models, Methodologies and Applications for the conference paper:
“Impact of privately-owned level 4 CAV technologies on travel demand and energy” by Auld J., Verbas O., Javanmardi M., and Rousseau A.
 - **Nominated for the Charley V. Wootan Memorial Dissertation Award**, 2015
given by the Council of University Transportation Centers (CUTC)
 - **Nominated for the Transportation Science and Logistics Dissertation Prize**,
given by the Institute for Operations Research and the Management Sciences (INFORMS) Society on Transportation Science & Logistics
 - **Finalist for the Stella Dafermos Best Paper Award**, 2015
given by the Transportation Network Modeling Committee (ADB30), Transportation Research Board of the National Academies
Top four among 141 papers: “Finding least cost hyperpaths in multi-modal transit networks: Methodology, algorithm and large-scale application” by Verbas O., and Mahmassani H.S.
 - **International Road Federation (IRF) Road Scholar Program Executive Fellowship** 2014
 - **Institute for Sustainability and Energy at Northwestern University (ISEN) Fellowship** 2009-2010
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RESEARCH INTERESTS

- Transportation network modeling
- Multi-modal assignment and simulation
- Multi-modal least cost path and hyperpath calculations
- Transit network design and scheduling
- Time-dependent origin-destination estimation
- Energy and sustainability
- Emergency evacuation
- Freight and logistics
- Large-scale optimization
- Crowd management
- Traveler behavior
- Transportation safety

JOURNAL PUBLICATIONS

- J18 **Verbas O**, Mahmassani HS. Multi-modal, time and approach dependent least cost hyperpath algorithm: Optimality, complexity and implementation on large-scale networks. *European Journal of Operational Research* (**under second revision**).
- J17 Mahmassani HS, Hyland M, Bou-Mjahed L, **Verbas O**, Xu XA, Smilowitz K, Johnson B. Potential for a logistics island to circumvent container port congestion in a constrained environment. *Transport Policy* (**under first review**).
- J16 **Verbas O**, Auld J, Ley H, Weimer R, Driscoll S. A time-dependent intermodal A* algorithm: Methodology and implementation on a large-scale network. *Transportation Research Record* (**in press**).
- J15 Xu XA, Zockaie A, Mahmassani HS, Halat H, **Verbas O**, Hyland M, Vovsha P, Hicks J (2017). Schedule consistency for daily activity chains in integrated activity-based dynamic multi-modal network assignment. *Transportation Research Record* 2664: 11-22. doi: [10.3141/2664-02](https://doi.org/10.3141/2664-02)
- J14 **Verbas O**, Mahmassani HS, Hyland MF, Halat H (2016). Integrated mode choice and dynamic traveler assignment in multi-modal transit networks: Mathematical formulation, solution procedure and large-scale application. *Transportation Research Record* 2564: 78-88. doi: [10.3141/2564-09](https://doi.org/10.3141/2564-09)
- J13 **Verbas O**, Abdelghany A, Mahmassani HS, Elfar A (2016). Integrated optimization and simulation framework for large-scale crowd management application. *Transportation Research Record* 2560: 57-66. doi: [10.3141/2560-07](https://doi.org/10.3141/2560-07)
- J12 **Verbas O**, Mahmassani HS, Hyland MF (2016). A gap-based transit assignment algorithm with vehicle capacity constraints: Simulation-based implementation and large-scale application. *Transportation Research Part B* 93(A): 1-16. doi: [10.1016/j.trb.2016.07.002](https://doi.org/10.1016/j.trb.2016.07.002)
- J11 Halat H, Zockaie A, Mahmassani HS, Xiang AX, **Verbas O** (2016). Dynamic network equilibrium for daily activity-trip chains of heterogeneous travelers: Application to large-scale networks. *Transportation* 43(6): 1041-1059. doi: [10.1007/s11116-016-9724-4](https://doi.org/10.1007/s11116-016-9724-4)
- J10 **Verbas O**, Mahmassani HS (2015). Exploring trade-offs in frequency allocation in a transit network using bus route patterns: Methodology and application to large-scale urban systems. *Transportation Research Part B* 81(2): 577-595. doi: [10.1016/j.trb.2015.06.018](https://doi.org/10.1016/j.trb.2015.06.018)
- J9 **Verbas O**, Mahmassani HS (2015). Finding least cost hyperpaths in multi-modal transit networks: Methodology, algorithm and large-scale application. *Transportation Research Record* 2497: 95-105. doi: [10.3141/2497-10](https://doi.org/10.3141/2497-10)
- J8 **Verbas O**, Mahmassani HS, Hyland MF (2015). Dynamic assignment-simulation methodology for multi-modal urban transit networks. *Transportation Research Record* 2498: 64-74. doi: [10.3141/2498-08](https://doi.org/10.3141/2498-08)
- J7 **Verbas O**, Mahmassani HS (2015). Integrated frequency allocation and user assignment in multi-modal transit networks: Methodology and application to large-scale urban systems. *Transportation Research Record* 2498: 37-45. doi: [10.3141/2498-05](https://doi.org/10.3141/2498-05)
- J6 **Verbas O**, Frei C, Mahmassani HS, Chan R (2015). Stretching resources: Sensitivity of optimal bus frequency allocation to stop-level demand elasticities. *Public Transport* 7(1): 1-20. doi: [10.1007/s12469-013-0084-6](https://doi.org/10.1007/s12469-013-0084-6)
- J5 Zockaie A, Mahmassani HS, Saberi M, **Verbas O** (2014). Dynamics of urban network traffic flow during a large-scale evacuation. *Transportation Research Record* 2422: 21-33. doi: [10.3141/2422-03](https://doi.org/10.3141/2422-03)

- J4 **Verbas O**, Mahmassani HS (2013). Optimal allocation of service frequencies over transit network routes and time periods: Formulation, solution and implementation using bus route patterns. *Transportation Research Record* 2334: 50-59. doi: [10.3141/2334-06](https://doi.org/10.3141/2334-06)
- J3 Kim J, Mahmassani HS, Alfelor R, Chen Y, Hou T, Jiang L, Saberi M, **Verbas O**, Zockaie A (2013). Implementation and evaluation of weather-responsive traffic management strategies: Insight from different networks. *Transportation Research Record* 2396: 45-56. doi: [10.3141/2396-11](https://doi.org/10.3141/2396-11)
- J2 Saberi M, **Verbas O** (2012). Continuous approximation model for the vehicle routing problem for emissions minimization at the strategic level. *Journal of Transportation Engineering* 138(11): 1368-1376. doi: [10.1061/\(ASCE\)TE.1943-5436.0000442](https://doi.org/10.1061/(ASCE)TE.1943-5436.0000442)
- J1 **Verbas O**, Mahmassani HS, Zhang K (2011). Time-dependent origin-destination demand estimation: Challenges and methods for large-scale networks with multiple vehicle classes. *Transportation Research Record* 2263: 45-56. doi: [10.3141/2263-06](https://doi.org/10.3141/2263-06)
- J0 **Verbas O**, Mahmassani HS, Elfar A, Mittal A, Ostojic M. Modeling the safety effects of red-light camera enforcement with spillover effects (**working paper**).
- J0 Elfar A, Mahmassani HS, Mittal A, Ostojic M, **Verbas O**. Determinants of red-light camera violation behavior: Evidence from Chicago, Illinois (**working paper**).
- J0 Zockaie A, **Verbas O**, Mahmassani HS. Network evacuation time and throughput: A large-scale application for super storms on Long Island network (**working paper**).

CONFERENCE PROCEEDINGS & PRESENTATIONS

- P38 **Verbas O**, Sokolov V, Auld J, Ley H. Time-dependent capacitated transit routing with real-time demand and supply data. *Presented Verbas O. at the Conference on Advanced Systems in Public Transport (CASPT)*, Brisbane, Australia, July 23-25, 2018.
- P37 Auld J, **Verbas O**, Javanmardi M. Mode choice estimation and simulation using a new intermodal routing algorithm and transportation big data sources. *Presented by Verbas O. at the 15th International Conference on Travel Behavior Research, Lectern Session 7G*, Santa Barbara, CA, July 15-20, 2018.
- P36 Pinto H, Hyland M, Mahmassani H, **Verbas O**. Integrated mode choice and dynamic traveler assignment-simulation framework to assess the impact of a suburban first-mile shared autonomous vehicle fleet service. *Presented by Mahmassani H. at the 15th International Conference on Travel Behavior Research, Lectern Session 9A*, Santa Barbara, CA, July 15-20, 2018.
- P35 **Verbas O**, Auld J, Ley H, Weimer R. A time-dependent intermodal A* algorithm for heterogeneous travelers with efficient heuristics. *Presented by Verbas O. at the 7th Innovations in Travel Demand Modeling (ITM) Conference, Lightning Talk Session 2A*, Atlanta, GA, June 24-27, 2018.
- P34 Javanmardi M, Auld J, **Verbas O**. Analyzing the impact of zero occupancy vehicle miles traveled in a shared private mobility environment. *Presented by Auld J. at the 7th Innovations in Travel Demand Modeling (ITM) Conference, Lightning Talk Session 6A*, Atlanta, GA, June 24-27, 2018.
- P33 Auld J, Javanmardi M, **Verbas O**, Islam E, Freyermuth V, Rousseau A. Simulation model results for energy and mobility impact of behavioral scenarios in POLARIS. *Presented by Auld J. and Verbas O. at the U.S. Department of Energy's (DOE's) 2018 Annual Merit Review and Peer Evaluation Meeting (AMR) for the Hydrogen and Fuel Cells Program and the Vehicle Technologies Office, Poster Session EEMS055*, Washington, D.C., June 18-21, 2018.
- P32 Auld J, Javanmardi M, **Verbas O**, Islam E, Freyermuth V, Rousseau A. Impact of connected and automated vehicle (CAV) technologies on travel demand and energy. *Presented by Auld J. at the U.S. Department of Energy's (DOE's) 2018 Annual Merit Review and Peer Evaluation Meeting (AMR) for the Hydrogen and Fuel Cells Program and the Vehicle Technologies Office, Oral Session EEMS017*, Washington, D.C., June 18-21, 2018.
- P31 Auld J, **Verbas O**, Javanmardi M, Rousseau A. Impact of privately-owned level 4 CAV technologies on travel demand and energy. *Presented by Auld J. at the 7th International Workshop on Agent-based Mobility, Traffic and Transportation Models, Methodologies and Applications*, Porto, Portugal, May 8-11, 2018.
- P30 **Verbas O**, Mahmassani S, Schofer J, Johnson B, Elfar A, Mittal A, Ostojic M. Red light camera enforcement: Best practices and program road map. *Presented by Verbas O. as a Guest Lecturer for the class Health Impacts of Transport Systems instructed by Kavi Bhalla at the University of Chicago*, Chicago, IL, May 2, 2018.

- P29 **Verbas O**, Auld J, Ley H, Weimer R, Driscoll S. A time-dependent intermodal A* algorithm: Methodology and implementation on a large-scale network. *Presented by Verbas O. at the 97th Annual Meeting of the Transportation Research Board, Poster Session 863*, Washington, D.C., January 7-11, 2018.
- P28 Pinto HKRF, Hyland M, **Verbas O**, Mahmassani M. Integrated mode choice and dynamic traveler assignment-simulation framework to assess the impact of a suburban first-mile shared autonomous vehicle fleet service on transit demand. *Presented by Pinto H.K.R.F. at the 97th Annual Meeting of the Transportation Research Board, Lectern Session 532 and Poster Session 864*, Washington, D.C., January 7-11, 2018.
- P27 Javanmardi M, Auld J, **Verbas O**. Analyzing intra-household fully autonomous vehicle sharing. *Presented by Javanmardi M. at the 97th Annual Meeting of the Transportation Research Board, Poster Session 770*, Washington, D.C., January 7-11, 2018.
- P26 **Verbas O**, Javanmardi M, Auld J. Analyzing the mobility impact of zero occupancy vehicles (ZOV) in presence of autonomous vehicles. *Presented by Verbas O. at the INFORMS Annual Meeting, Lectern Session SC50*, Houston, TX, October 22-25, 2017.
- P25 Shabanpour R, Golshani N, Mohammadian A, Auld J, **Verbas O**. Analyzing telecommuting behavior and impacts on regional travel demand through simulation. *Presented by Verbas O. at the 5th IEEE International Conference on Models and Technologies for Intelligent Transportation Systems (MT-ITS), Lectern Session*, Naples, Italy, June 26-28, 2017.
- P24 Auld J, Javanmardi M, Weimer R, **Verbas O**, Karbowski D, Rousseau A. Agent-based transportation system modeling with POLARIS. *Presented by Verbas O. at the U.S. Department of Energy's (DOE's) 2017 Annual Merit Review and Peer Evaluation Meeting (AMR) for the Hydrogen and Fuel Cells Program and the Vehicle Technologies Office, Poster Session EEMS014*, Washington, D.C., June 5-9, 2017.
- P23 **Verbas O**, Mahmassani HS, Elfar A, Mittal A, Ostojic M. Modeling the safety effects of red-light camera enforcement with spillover effects. *Presented by Verbas O. at the 96th Annual Meeting of the Transportation Research Board, Poster Session 802*, Washington, D.C., January 8-12, 2017.
- P22 Elfar A, Mahmassani HS, Mittal A, Ostojic M, **Verbas O**. Determinants of red-light camera violation behavior: Evidence from Chicago, Illinois. *Presented by Elfar A. at the 96th Annual Meeting of the Transportation Research Board, Poster Session 742*, Washington, D.C., January 8-12, 2017.
- P21 Xu XA, Zockaie A, Mahmassani HS, Halat H, **Verbas O**, Hyland M, Vovsha P, Hicks J. Schedule consistency for daily activity chains in integrated activity-based dynamic multi-modal network assignment. *Presented by Mahmassani H. S. at the 96th Annual Meeting of the Transportation Research Board, Lectern Session 292*, Washington, D.C., January 8-12, 2017.
- P20 **Verbas O**, Mahmassani HS, Hyland MF. Integrated mode choice and assignment-simulation framework with automated transit vehicles. *Presented by Verbas O. at the INFORMS Annual Meeting, Lectern Session MB59*, Nashville, TN, November 13-16, 2016.
- P19 **Verbas O**, Mahmassani HS, Hyland MF, Halat H. Integrated mode choice and dynamic traveler assignment in multi-modal transit networks: Mathematical formulation, solution procedure and large-scale application. *Presented by Verbas O. at the 95th Annual Meeting of the Transportation Research Board, Poster Session 785*, Washington, D.C., January 10-14, 2016.
- P18 **Verbas O**, Abdelghany A, Mahmassani HS, Elfar A. Integrated optimization and simulation framework for large-scale crowd management application. *Presented by Verbas O. at the 95th Annual Meeting of the Transportation Research Board, Poster Session 589*, Washington, D.C., January 10-14, 2016.
- P17 Halat H, Zockaie A, Mahmassani HS, Xiang AX, **Verbas O**. Dynamic network equilibrium for daily activity-trip chains of heterogeneous travelers: Application to large-scale networks. *Presented by Halat H. at the 95th Annual Meeting of the Transportation Research Board, Poster Session 785*, Washington, D.C., January 10-14, 2016.
- P16 **Verbas O**. Transit Builder, a space-time transit network builder using GTFS data. *Presented by Verbas O. at the 95th Annual Meeting of the Transportation Research Board, ADB30(2) Subcommittee Meeting*, Washington, D.C., January 10-14, 2016.
- P15 Mahmassani HS, Hyland MF, Bou-Mjahed L, **Verbas O**, Xiang AX, Johnson B. Potential for a logistics island to circumvent container port congestion in a constrained environment. *Presented by Hyland M.F. at the 6th METRANS International Urban Freight Conference*, Long Beach, CA, October 21-23, 2015.

- P14 Mahmassani HS, **Verbas O.** Multimodal transit networks: Least cost hyperpaths and dynamic assignment-simulation methodology for large-scale applications. *Presented by Mahmassani H.S. at the Network Optimization Workshop*, La Rochelle, France, May 18-20, 2015.
- P13 **Verbas O.** Steps of transit service design with a focus on transit frequency setting: CTA – Northwestern collaboration. *Presented by Verbas O. at the International Office Brown Bag Event: Technology and the Future of the CTA*, Northwestern University, Evanston, IL, February 6, 2015.
- P12 **Verbas O,** Mahmassani HS. Transit network assignment, simulation and frequency setting: Integrated approaches and large scale application. *Presented by Verbas O. at the 94th Annual Meeting of the Transportation Research Board, Doctoral Seminar in Transportation Modeling, Workshop 192*, Washington, D.C., January 11-15, 2015.
- P11 **Verbas O,** Mahmassani HS. Finding least cost hyperpaths in multi-modal transit networks: Methodology, algorithm and large-scale application. *Presented by Verbas O. at the 94th Annual Meeting of the Transportation Research Board, LECTERN Session 738 and Poster Session 846*, Washington, D.C., January 11-15, 2015.
- P10 **Verbas O,** Mahmassani HS, Hyland MF. Dynamic assignment-simulation methodology for multi-modal urban transit networks. *Presented by Verbas O. at the 94th Annual Meeting of the Transportation Research Board, LECTERN Session 399 and Poster Session 846*, Washington, D.C., January 11-15, 2015.
- P9 **Verbas O,** Mahmassani HS. Integrated frequency allocation and user assignment in multi-modal transit networks: Methodology and application to large-scale urban systems. *Presented by Verbas O. at the 94th Annual Meeting of the Transportation Research Board, Poster Session 846*, Washington, D.C., January 11-15, 2015.
- P8 Zockaie A, Mahmassani HS, Saberi M, **Verbas O.** Dynamics of urban network traffic flow during a large-scale evacuation. *Presented by Zockaie A. at the 93rd Annual Meeting of the Transportation Research Board, LECTERN Session 735*, Washington, D.C., January 12-16, 2014.
- P7 **Verbas O,** Mahmassani HS. Optimal allocation of service frequencies over transit network routes and time periods: Formulation, solution and implementation using bus route patterns. *Presented by Verbas O. at the 92nd Annual Meeting of the Transportation Research Board, LECTERN Session 393 and Poster Session 800*, Washington, D.C., January 13-17, 2013.
- P6 **Verbas O,** Frei C, Mahmassani HS, Chan R. Stretching resources: Sensitivity of optimal bus frequency allocation to stop-level demand elasticities. *Presented by Verbas O. at the 92nd Annual Meeting of the Transportation Research Board, Poster Session 424*, Washington, D.C., January 13-17, 2013.
- P5 Zockaie A, **Verbas O,** Mahmassani, HS. How long would it have taken to safely evacuate Long Island during Sandy? Analytical and simulation approaches. *Presented by Mahmassani H.S. at the 92nd Annual Meeting of the Transportation Research Board, ANB80T Task Force Meeting*, Washington, D.C., January 13-17, 2013.
- P4 Kim J, Mahmassani HS, Alfelor R, Chen Y, Hou T, Jiang L, Saberi M, **Verbas O,** Zockaie A (2013) Implementation and evaluation of weather responsive traffic management strategies: Insight from different networks. *Presented by Kim J. at the 92nd Annual Meeting of the Transportation Research Board, Poster Session 603*, Washington, D.C., January 13-17, 2013.
- P3 **Verbas O,** Mahmassani, HS. Trade-offs in bus frequency allocation: System level optimization and application to a large scale network. *Presented by Verbas O. at the INFORMS Annual Meeting, LECTERN Session SD49*, Phoenix, AZ, October 14-17, 2012.
- P2 Mahmassani HS, **Verbas O.** Optimal bus route frequency allocation in a large-scale urban system. *Presented by Mahmassani H.S. at the 25th European Conference on Operational Research (EURO XXV)*, Vilnius, Lithuania, July 8-11, 2012.
- P1 **Verbas O,** Mahmassani HS, Zhang K. Time-dependent origin-destination demand estimation: Challenges and methods for large-scale networks with multiple vehicle classes. *Presented by Verbas O. at the 90th Annual Meeting of the Transportation Research Board, LECTERN Session 230 and Poster Session 739*, Washington, D.C., January 23-27, 2011.

RESEARCH PROJECTS

Argonne National Laboratory, Lemont, IL

- Department of Energy (DOE): Smart Mobility Multi-Modal Pillar
Task: Enhance Existing Models to Estimate Impact from Modal Shifts; Intracity Passenger Travel
Principal Investigators (PIs): R. Vijayagopal, O. Verbas
Estimation of how various trends in multimodal passenger travel will affect overall energy use over an entire metro area.

2017-ongoing

- Federal Transit Administration (FTA): Coordinated Transit Response Planning and Operations Support Tools for Mitigating Impacts of All-Hazard Emergency Events
Extension of the integrated ABM-DTA software POLARIS to include intermodal routing, assignment, and simulation.

2017-ongoing

Northwestern University, Evanston, IL

- City of Chicago Department of Transportation: Red Light Camera Enforcement, Best Practices and Program Road Map
Leading post-doctoral researcher
Data analysis coordinator; data science; data analytics; public-private sector interface.
[Chicago Red Light Camera Report](#)

2015-2016

- Modeling and Simulation to Support Scheduling and Crowd Management: Makkah, Saudi Arabia
Leading post-doctoral researcher
Logistics for large-scale event operations; Optimization of groups, paths and schedules;
Framework development for the integration between optimization and simulation.

2015-2016

- Air Cargo Opportunities for Vertical Take-Off and Landing Operations
Leading post-doctoral researcher
Logistics for VTOL operations; Industry analysis; Case study development and analysis;
Trade-off analysis.

2015

- Analysis, Modeling, and Simulation (AMS) Testbed Framework for Dynamic Mobility Applications (DMA) and Active Transportation and Demand Management (ATDM) Programs
Integration of emissions calculations into the dynamic traffic assignment framework;
Scenario development for energy and emission evaluations.

2014-2015

- Chicago Metropolitan Agency for Planning: Network Microsimulation Extension to Activity-Based Travel Model
Development of NU-TRANS: A platform for transit assignment and microsimulation
 - *Development of multi-modal, time and approach-dependent least cost hyperpath algorithm; multi-modal gap-based transit assignment algorithm for multiple user classes; multi-agent particle simulation platform to simulate the movements of passengers and vehicles; Application to Chicago regional transit network.*

2013-2015

- Design of Chicago Transit Authority (CTA) Network
Leading student researcher
Large-scale of optimization of bus schedules.

2012-2013

- Implementation and Evaluation of Weather Responsive Traffic Estimation and Prediction System 2011-2012
Modeling of the Long Island and Salt Lake City networks for DYNASMART-P;
Optimization of the time-dependent origin-destination demand tables.
[FHWA-JPO-12-055](#)
- SHRP 2 CO4: Improving Our Understanding of How Highway Congestion and Pricing Affect 2009-2010
Travel Demand
Modeling of the New York regional network for DYNASMART-P;
Optimization of the time-dependent origin-destination demand tables.
[SHRP 2 Report S2-C04-RW-1](#)
- Work sponsored by ISEN 2009-2010
Optimizing transportation network performance for energy and environmental objectives;
Integrating new approaches for emission and energy estimations into next-generation traffic
simulation model platforms.
- Makkah Central Area Transportation Planning 2008-2009
Network analysis and debugging.

PROFESSIONAL ACTIVITIES

- Reviewer: Computers and Operations Research (COR) (1)
- Reviewer: Intelligent Transportation Systems Magazine (ITS), Institute of Electrical and Electronics Engineers (IEEE) (8)
- Reviewer: International Journal of Intelligent Transportation Systems Research (IJIT) (4)
- Reviewer: International Journal of Transportation Science and Technology (IJTST) (1)
- Reviewer: International Symposium on Transportation and Traffic Flow Theory (ISTTT) (2)
- Reviewer: Journal of Modern Transportation (JMTR) (1)
- Reviewer: Networks and Spatial Economics (NETS) (1)
- Reviewer: Public Transport (PUTR) (1)
- Reviewer: Sustainability, MDPI (Multidisciplinary Digital Publishing Institute) (2)
- Reviewer: Systems Journal (ISJ), Institute of Electrical and Electronics Engineers (IEEE) (1)
- Reviewer: Transportation (PORT): (1)
- Reviewer: Transportation Research Part A: Policy and Practice (2)
- Reviewer: Transportation Research Part B: Methodological (2)
- Reviewer: Transportation Research Part C: Emerging Technologies (10)
- Reviewer: Transportation Research Part E: Logistics and Transportation Review (3)
- Reviewer: Transportation Science (2)
- Reviewer: TRB ADB30, Transportation Network Modeling Committee, Transportation Research Board (8)
- Reviewer: TRB ADB40, Transportation Demand Forecasting Committee, Transportation Research Board (2)
- Reviewer: TRB AHB45, Traffic Flow Theory & Characteristics Committee, Transportation Research Board (5)
- Reviewer: TRB AP010, Transit Management and Performance Committee, Transportation Research Board (3)
- Reviewer: TRB AP025, Public Transportation Planning and Development Committee, Transportation Research Board (1)
- Reviewer: TRB AP065, Rail Transit Systems Committee, Transportation Research Board (6)
- Reviewer: TRB AP070, Commuter Rail Transportation Committee, Transportation Research Board (3)
- Reviewer: TRB AT015, Freight Transportation Planning and Logistics Committee, Transportation Research Board (3)
- Reviewer: TRB AT030, Agricultural Transportation Committee, Transportation Research Board (5)
- Reviewer: National Fund for Scientific and Technological Development (FONDECYT) of the Chilean National Commission for Scientific and Technological Research (CONICYT) (1)

- Volunteer for Webinar Organizations: TRB ADB30(1), Transit, Freight, and Logistics Modeling Subcommittee, Transportation Research Board
- Volunteer for Transportation Analysis, Modeling and Simulation (AMS) Data Hub: TRB ADB30(2), Network Equilibrium Modeling Subcommittee, Transportation Research Board

TEACHING EXPERIENCE

- Co-taught the graduate level Civil and Environmental Engineering course “Advanced Theories of Traffic Flow” Winter 2016
Instructor: Hani S. Mahmassani
- Mentored a first-year MS/PhD student for the graduate level Research Units course Fall 2015
- Completed the “Searle Teaching Certificate Program” at Northwestern University 2014-2015
Director: Nancy Ruggeri
Faculty Mentor: Yu Marco Nie
- Co-taught the graduate level Civil and Environmental Engineering course “Transportation System Operations & Control II: Scheduled Modes and Real-Time Systems” Winter 2015
Instructor: Hani S. Mahmassani

SOFTWARE DEVELOPMENT

- **POLARIS Multi-Modal:** Principal developer of the software module for multi-modal routing (drive, transit, walk, bike, TNC, intermodal) and transit simulation as an integral part of POLARIS, an integrated ABM-Traffic and Transit Simulation Software
- **NU-TRANS** (Northwestern University Transit Assignment and Simulation): Principal developer of a software that calculates least cost hyperpaths in a multi-modal transit network, assigns travelers onto hyperpaths, and simulates the traveler and vehicle movement.
- **NU-TRANS Builder:** Principal developer of a software that uses various data sources including Geographic Information Systems (GIS) and General Transit Specification Feed (GTFS) to construct multi-modal transit networks.
- **Transit Builder:** Principal developer of a software that uses the General Transit Specification Feed (GTFS) data to construct space-time transit networks.

COMPUTER SKILLS

- Advanced: AMPL, Microsoft Office, MySQL, Visual Fortran, Visual C++
- Intermediate: ArcGIS, MATLAB, Python, Stata, TransCAD
- Basic: Biogeme, Javascript, Microsoft SQL, PHP, QGIS, SPSS, SQLite

LANGUAGES

- Advanced: English
- Intermediate: German
- Native: Turkish

OTHER

- Has been playing classical guitar since the age of fifteen including eight concerts.