Mohammadreza Koloushani, Ph.D., E.I.

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Education

Aug. 2018–Aug. 2023 **Doctor of Philosophy in *Civil Engineering***, FAMU-FSU College of Engineering, Florida, USA.
Dissertation Title: Investigation of Crashes Involving Vulnerable Roadway Users Utilizing Geographical Information Systems-Driven Spatio-Temporal Statistical Techniques

Aug. 2018–Aug. 2020 **Graduate Minor in *Statistics***, Florida State University - Department of Statistics, Florida, USA.

Sept. 2011–Oct. 2013 **Master of Science in *Highway and Transportation Engineering***, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran.
Thesis Title: Development of an automated method to do road safety audit via Mobile Mapping System

Sept. 2006–Sept. 2010 **Bachelor of Science in *Structural Engineering***, Isfahan University of Technology, Isfahan, Iran.

Work History

Professional Experience

July 2024–Present **Engineer Intern**, *PGA LLC*, Florida, USA.
Engineering Consultant - 101 N Monroe St., STE 858, Tallahassee, FL 32301 - Phone: +1 (813) 978 3100

Project Specifications:
Crash Data Analysis | Transportation Planning
Roadway Design Document Preparation
Project Development&Environment Study
Plan development and ERC comments

Oct. 2023–Present **Researcher**, *RIDER - Resilient Infrastructure and Disaster Response Center*, FAMU-FSU College of Engineering - Dept. of Civil and Environmental Eng., Florida, USA.

Project Specifications:
FMCSA Project: Multi Sensor Fusion for Proactive Commercial Motor Vehicle Safety at Work Zone
REAT Project: Rest Area Serviceability Optimization for Trucks Using Geospatial and 2SFCA-Driven Analysis
RIDER Project: Spatial Analysis of Traffic, Speeding, and Proximity to Critical Facilities

Oct. 2023–May. 2024 **Civil Designer**, *Stantec Inc.*, Florida, USA.
Engineering Consultant - 2316 Killearn Center Blvd STE 102, Tallahassee, FL 32309 - Phone: +1 (850) 878 001

Project Specifications:
Signing and Pavement Marking Project: SR 63 from John Knox Rd. to Lake Shore Dr. | Tallahassee
RRR Project: SR 228 (Post Street) from SR 111 (Cassat Avenue) to McDuff Avenue | Jacksonville
Project Development&Environment Study: I-75 corridor | Ocala | Marion County
Plan development and ERC comments: Turnpike Reconstruction and Capacity Improvement Project

May 2023–Aug. 2023 **Transportation Engineering Internship**, *Stantec Inc.*, Florida, USA.
Engineering Consultant - 2316 Killearn Center Blvd STE 102, Tallahassee, FL 32309 - Phone: +1 (850) 878 001

2018–2023 **Graduate Research Assistant**, *FAMU-FSU College of Engineering*, Florida, USA.

Project Specifications:
FDOT Project: Context-based Thresholds and Calibration Functions for Crash Prediction Models
FDOT Project: Diagnostics Tests and Significance Thresholds for Crash Prediction Models
FDOT Project: Feasibility Analysis of Real-time Intersection Data Collection and Processing Using Drones
NSF Project: Integrated Hazard and Traffic Modeling for Massive Evacuation in Florida Under Uncertainty of Hurricane Track

2011–2013 **Graduate Research Assistant**, *Tehran Polytechnic*, Tehran, Iran.

Project Specifications:
B/A Analysis Project: Application of Fuzzy Neural Network Control technique in a complex intersection
AI Project: The application of ANN-based Expert System for evaluation of two-car crash accident
Traffic Operation Project: Comparative Analysis for Sustainable traffic engineering using Aimsun
Transportation Project: Mode Choice for Educational trip; Examination of the influence of urban form
Publication: Compilation of the book entitled as "Advancing Sustainable Safety" in Persian
Statistical Analysis Project: Evaluation of the critical factors responsible for road traffic accidents

Teaching Experience

2018–2023 **Graduate Teaching Assistant**, *FAMU-FSU College of Engineering*, Florida, USA.

Course Specifications:
Traffic Engineering - Instructor: Dr. Qianwen Guo - Spring 2021
Highway Geometric Design - Instructor: Dr. Ren Moses - Fall 2020
Statistical Applications for Engineers - Instructor: Dr. Eren Erman Ozguven - Fall 2020

2013–2018 **Lecturer**, Isfahan, Iran.

Course Specifications:
Islamic Azad University-Khomeini Shahr Branch: Geometric Design of Highway/Pavement Analysis and Design/Road Design Project/Transportation Engineering/Traffic Engineering
Daneshpajoohan Higher Education Institute: Geometric Design of Highway/Pavement Analysis and Design/Road Design Project/Transportation Engineering/Railroad Engineering
Sepahan Institute of Higher Education: Geometric Design of Highway/Pavement Analysis and Design/Road Design Project/Traffic Engineering

Professional Service

Reviewer

IET Intelligent Transport Systems *(Impact Factor: 2.48, Cite Score: 3.8)*
Transportation Research Board (TRB)
MDPI Journal

Memberships

Florida Engineering Society
Institute of Transportation Engineers, Student Member
American Society of Civil Engineers, Student Member
Member of Scientific Society of Civil Department of Isfahan University of Technology

Computer Skills

R-Studio Programming; Statistical modeling; Mathematical analysis
GIS Geographic Information Systems; Spatial Analysis
ORD Roadway Design; Plan Development; Labeling and Pavement Marking
MATLAB Image processing and Support Vector Machine classification method; M.Sc. thesis
Aimsun Traffic engineering, traffic simulation, transportation planning
SPSS Statistical Analysis in transportation demand analysis, logistic regression
Python Programming; learn through self-study and on-line courses
Civil3D Geometric Design of Highway-Teaching as lecturer
AutoTURN Smart Path analysis-Vehicle maneuvers Evaluation

Research Interests

Traffic Safety Analysis - Safety Performance Function
Road Accident Data Analysis
Driver Behavior
Geographic Information Systems (GIS)
Artificial Intelligent Techniques in Transportation

Awards and Honors

Selected and honored as excellent researcher in civil and environmental engineering department at FAMU-FSU college of engineering (2021).

Selected and honored as top lecturer in Highway and Transportation Engineering courses at Islamic Azad University (2016).

Top student (GPA 18.21 out of 20) among students attending Highway and Transportation Engineering in 2011 at Amirkabir University of Technology (Tehran Polytechnic) (2013).

Selected and honored as top researcher among graduate students of Transportation Engineering in civil department of Amirkabir University of Technology for two semesters (2011-2012).

Publication (Google Scholar)

Journal Papers

1. **Koloushani M.**, Abazari S. R., Vanli O. A., Ozguven E. E., Moses R., Giroux R., Jacobs B., "***Determination of Optimal Spatial Sample Sizes for Fitting Negative Binomial-Based Crash Prediction Models with Consideration of Statistical Modeling Assumptions***", Sustainability, 2023, 15(20): 14731. DOI: *https://www.mdpi.com/2071-1050/15/20/14731*
2. **Koloushani M.**, Ghorbanzadeh M., Ozguven E. E., Ermagun A., "***A Conceptualization of the Spatial Relationship associated with School-Related Crashes: A Case Study in Northwest Florida***", Transportation Planning and Technology, 2023, 46:6, 795-817. DOI: *https://doi.org/10.1080/03081060.2023.2229306*
3. **Koloushani M.**, Abazari S. R., Khayamim R., Vanli O. A., Ozguven E. E., Moses R., Giroux R., Jacobs B., "***Developing Economic Loss-Based Thresholds for Improving Context-Specific Crash Prediction Models***", Transportation Research Record, 2023, on-line. DOI: *https://doi.org/10.1177/03611981231169273*
4. **Koloushani M.**, Kaya M. B., Karaer A., Ozguven E. E., "***Investigating the Probability of Potential Actions Performed by Drivers Experiencing Daytime Sun Glare-Induced Blindness***", Transportation Research Record, 2023, on-line. DOI: *https://doi.org/10.1177/03611981231155419*
5. **Koloushani M.**, Ghorbanzadeh M., Gray N., Raphael P., Ozguven E. E., Charness N, Yazici A., Boot W. R., Eby D. W., Molnar L. J., "***Older Adults' Concerns Regarding Hurricane-Induced Evacuations during COVID-19: Questionnaire Findings***", Transportation Research Interdisciplinary Perspectives, 2022, on-line. DOI: *https://doi.org/10.1016/j.trip.2022.100676*
6. **Koloushani M.**, Karaer A., Ozguven E. E., Sando T., Dulebenets M. A., Moses R., "***Investigating Spatial Correlations between Land Use and Pedestrian Injury Severity in Crashes Occurring away from Intersections in Northwest Florida***", Transportation Research Record, 2022, on-line. DOI: *https://doi.org/10.1177/03611981221096433*
7. **Koloushani M.**, Ghorbanzadeh M., Ulak M. B., Ozguven E. E., Horner M. W., Vanli O. A., "***The Analysis of Spatial Patterns and Significant Factors Associated with Young-Driver-Involved Crashes in Florida***", Sustainability, 2022, Volume 14, Issue 2, Page 969. DOI: *https://doi.org/10.3390/su14020696*
8. Seyedi M., **Koloushani M.**, Jung S., Vanli O. A., "***Safety Assessment and a Parametric Study of Forward Collision-Avoidance Assist Based on Real-World Crash Simulations***", Journal of Advanced Transportation, 2021. DOI: *https://doi.org/10.1155/2021/4430730*
9. Kidando E., Kitali A. E., Kutela B., Karaer A., Ghorbanzadeh M., **Koloushani M.**, Ozguven E. E., "***Use of Real-Time Traffic and Signal Timing Data in Modeling Occupant Injury Severity at Signalized Intersections***", Transportation Research Record, 2021, DOI: *https://doi.org/10.1177/03611981211047836*
10. **Koloushani M.**, Ghorbanzadeh M., Ozguven E. E., Ulak M. B., "***Crash Patterns in the COVID-19 Pandemic: The Tale of Four Florida Counties***", Future Transportation, 2021, Volume 1, Issue 3, Page 414-442. DOI: *https://doi.org/10.3390/futuretransp1030023*
11. Ghorbanzadeh M., **Koloushani M.**, Ozguven E. E., Vanli O. A., Arghandeh R., "***City transportation network vulnerability to disasters: the case of Hurricane Hermine in Florida***", Environmental Hazards, 2021, Volume 1, Issue 3, Page 1-19. DOI: *https://doi.org/10.1080/17477891.2021.1933885*
12. Kidando E., Kitali A. E., Kutela B., Karaer A., Ghorbanzadeh M., **Koloushani M.**, Ozguven E. E., "***Prediction of vehicle occupants injury at signalized intersections using real-time traffic and signal data***", Accident Analysis and Prevention, 2021, Volume 149. DOI: *https://doi.org/10.1016/j.aap.2020.105869*

13. **Koloushani M.**, Ozguven E. E., Fatemi A.,Tabibi M., "***Mobile Mapping System-based Methodology to Perform Automated Road Safety Audits to Improve Horizontal Curve Safety on Rural Roadways***", Computational Research Progress in Applied Science and Engineering (CRPASE), 2020, Volume 6, Issue 4, Page 263-275.
14. **Koloushani M.**, Fatemi A., Tabibi M., Ozguven E. E., "***Introducing Automatic Control Method of Safety Standards in Horizontal Curves by Processing Images Taken by Mobile Mapping System***", Pertanika Journal of Social Sciences and Humanities, 2020, Volume 28, Issue 2, Page 1567-1579.
15. Ghorbanzadeh M., **Koloushani M.**, Ulak M. B., Ozguven E. E., Arghandeh R., "***Statistical and spatial analysis of hurricane-induced roadway closures and power outages***", Energies, 2020, Volume 15, Issue 5, 1098. DOI: *https://doi.org/10.3390/en13051098*
16. Karaer A., Kaczmarek W., Mank E., Ghorbanzadeh M., **Koloushani M.**, Dulebenets M. A., Moses R., Sando T., Ozguven E. E., "***Traffic Data on-the-Fly: Developing a Statewide Crosswalk Inventory Using Artificial Intelligence and Aerial Images (AI2) for Pedestrian Safety Policy Improvements in Florida***", Data Science for Transportation, 2023, Volume 5, Issue 7. DOI: *https://doi.org/10.1007/s42421-023-00070-1*
17. Abichou T., Angel J. D., **Koloushani M.**, Stamatious K., Haj Ali N. B., Green R., "***Estimation of Total Landfill Surface Methane Emissions Using Geospatial Approach Combined with Measured Surface Ambient Air Methane Concentrations***", Journal of the Air and Waste Management Association, Accepted 10.20.2023 - In Press
18. Barrett A. E., Mimbs H., **Koloushani M.**, Ozguven E. E., Soulie B., Noblitt J., Michael, C., "***Using golf carts as a transportation mode: Who does it?***", Transportation Research Interdisciplinary Perspectives, 2024, Volume 23, Issue 7. DOI: *https://doi.org/10.1016/j.trip.2023.101003*

Conference Presentations

1. **Koloushani M.**, Ghorbanzadeh M., Ozguven E. E., Ermagun A., "***A Conceptualization of the Spatial Relationship associated with School-Related Crashes: A Case Study in Northwest Florida***", Transportation Research Board (TRB) 102^{nd} Annual meeting, Washington DC, United States, 2023.
2. **Koloushani M.**, Karaer A., Ozguven E. E., Sando T., Dulebenets M. A., Moses R., "***Assessing the Spatial Correlation between Land Use and Injury Severity of Pedestrian-Involved Crashes that Do Not Occur at Intersections: A Network Based Case Study in Northwest Florida***", Transportation Research Board (TRB) 101^{st} Annual meeting, Washington DC, United States, 2022.
3. **Koloushani M.**, Ghorbanzadeh M., Ulak M. B., Ozguven E. E., Horner M. W., "***Examining Spatial Patterns of Youth-Involved Crashes around University Campuses in Florida***", Bridging Transport Researchers (BTR) conference 2^{nd} Annual meeting, Virtual Event, 2020.
4. **Koloushani M.**, Tabibi M., Fatemi A., "***Application of Global Positioning System data collected by Mobile Mapping System for automatic control of safety standards in horizontal curves***", Transportation Research Board (TRB) 93^{rd} Annual meeting, Washington DC, United States, 2014, Paper 14-1315.
5. Takyi S., Antwi, R., **Koloushani M.**, Ozguven E. E., "***A Spatial Analysis of Traffic, Speeding, and Proximity to Critical Facilities: A Case Study in the State of Florida***", Transportation Research Board (TRB) 103^{rd} Annual meeting, Washington DC, United States, 2024.