Umair Durrani

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Summary

- Excellent research skills (> 8 years), providing statistical and software expertise to government and other research teams to develop solutions to specific needs, as demonstrated by 3+ completed projects, 3 peer-reviewed research articles and 6 conference presentations
- Extensive knowledge of Statistics and data management with experience in accessing, and reformatting data files, as evidenced by > 85% score in 3 graduate level courses and project savings of 100+ hours in graduate students' time
- Strong communication skills with experience creating documentation as indicated by 2 completed project reports, 3 first-author peer-reviewed articles and 6 conference presentations

Work Experience

Research Assistant — 2013 - Present

University of Windsor

- Analyzed weather and road safety data in collaboration with Ministry of Transportation Ontario to evaluate the safety impacts of a variable speed limit system on Ontario highways that resulted in a report and a dashboard to visualize the proposed sites
- Developed novel calibration and validation methods for models that replicate driver behavior in highway driving, as demonstrated by 2 first-author peer-reviewed articles and 5 conference presentations
- Designed and ran driving simulator experiments to investigate interaction of car drivers with large trucks that resulted in 1 first-author peer-reviewed article and 6 conference presentations
- Developed workflows for driving simulator data extraction, import, analysis, mapping and reporting, resulting in completion of 2 collaborative research projects at Transportation Systems Innovation Lab

Data Centre Graduate Student Assistant — Winter 2019

Leddy Library, University of Windsor

- Provided excellent statistical software support to undergraduate and graduate students

Education

Ph.D. Civil Engineering (Candidate) 2015 – 2021

University of Windsor, Windsor, Ontario, Canada

Relevant courses: Road Safety Analysis, Driver Behavior Modelling with Microsimulation, Advanced Geographic Information Systems Data Modelling, Freight Transportation Analysis, Vehicle Dynamics, Data Mining, Technology Entrepreneurship

B.Sc. Transportation Engineering 2005 – 2009

University of Engineering and Technology Lahore, Pakistan

Relevant courses: Traffic Engineering, Transportation Planning, Transportation Engineering, Highway Engineering and Design, Statistical Analysis with Applications, GIS in Transportation

Software and Techniques

R	Car-following Models	Statistical Models
Python	Lane-change Models	Driver Behavior Analysis
PTV VISSIM	Sensorimotor control	GIS
SUMO	Microscopic Simulation	Driving Simulator

Selected Publications and Presentations

- Durrani, U., Lee, C. and Shah, D., 2020. Predicting driver reaction time and deceleration: Comparison of perception-reaction thresholds and evidence accumulation framework. Accident Analysis & Prevention, 149, p.105889.
- Durrani, U. and Lee, C., 2018. Assessing Impacts of Surrounding Trucks on Car Drivers' Lane Change Duration Using Driving Simulator (No. 18-06330).
- Durrani, U. and Lee, C., 2019. Calibration and Validation of Psychophysical Car-Following Model Using Driver's Action Points and Perception Thresholds. Journal of Transportation Engineering, Part A: Systems, 145(9), p.04019039.
- Durrani, U., Lee, C. and Maoh, H., 2016. Calibrating the Wiedemann's vehicle-following model using mixed vehicle-pair interactions. Transportation research part C: emerging technologies, 67, pp.227-242.
- Durrani, U., Lee, C. and Zhao, P., 2016. Understanding the Differences in Lane Change Maneuvers of Cars and Heavy Vehicles on Freeways. In Canadian Transportation Research Forum 51st Annual Conference.

Awards

- Transportation Association of Canada / Esch Scholarship
- Ontario Graduate Scholarship