

## Nael Alsaleh

Postdoctoral Researcher,  
Mobility Network,  
Department of Civil & Mineral Engineering,  
University of Toronto,  
35 St. George Street, Toronto, Ontario M5S 1A4  
nael.alsaleh@utoronto.ca  
(647) 914-0793  
www.naelalsaleh.com

### EDUCATION

**Toronto Metropolitan University (TMU)** Toronto, ON

*Doctor of Philosophy (Ph.D.) in Civil Engineering/Transportation* September 2019 – December 2022

Dissertation: *"On-Demand Public Transit Systems: Demand Analysis, Network Modelling, and Sustainability Evaluation"*.

CGPA: 4.33/4.33 - Outstanding

Academic advisor: *Professor Bilal Farooq*

**Jordan University of Science and Technology (JUST)** Irbid, Jordan

*Master of Science in Civil Engineering/ Transportation* February 2016 – October 2017

Dissertation: *"Turbo Roundabout Usage In Lieu of Conventional Roundabouts for the Jordanian Traffic Conditions"*.  
*Awarded as the best Master thesis at Jordan University of Science and Technology for the year of 2018.*

CGPA: 4.17/4.00 - Distinguished

Academic advisor: *Professor Mohammad Ali Khasawneh*

**Jordan University of Science and Technology (JUST)** Irbid, Jordan

*Bachelor of Engineering, Civil Engineering* September 2011 – August 2015

CGPA: 85.2% - Excellent

Academic advisor: *Professor Mohammad Ali Khasawneh*

### HONOURS AND AWARDS

**Ontario International Graduate Scholarship (OGS) Award** (*Merit Based*) for the 2022-2023 academic year, Ministry of Colleges and Universities, Ontario. The award is \$15,000 provided to Ontario's top international graduate students who demonstrate a high level of academic, research, and leadership achievements.

**International PhD Tuition Fees Conversion Scholarship** (*Competitive Based*), Yeates School of Graduate Studies, Toronto Metropolitan University, from Fall 2021 to Summer 2023. The scholarship is provided as a recognition of the outstanding academic and research achievements.

**The First Place Award in The Best Master Thesis at JUST** for the 2017-2018 academic year (*Competitive Based*), Faculty of Graduate Studies, Jordan University of Science and Technology.

**Full-Funded Masters Scholarship Award** (*Competitive Based*), Scientific Research Support Fund, Ministry of Higher Education, Jordan.

**2014-2015 Dean's Honour List, Faculty of Engineering**, Jordan University of Science and Technology, in recognition of the outstanding academic performance.

**2011-2012 Dean's Honour List, Faculty of Engineering**, Jordan University of Science and Technology, in recognition of the outstanding academic performance.

## PUBLICATIONS

### Published

- 1) **Alsaleh, N.**, & Farooq, B. (2022). The Impact of COVID-19 Pandemic on Ridesourcing Services Differed Between Small Towns and Large Cities. *PLoS ONE* 17(10): e0275714. Url: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0275714>
- 2) **Alsaleh, N.**, & Farooq, B. (2021). Interpretable data-driven demand modelling for on-demand transit services. *Transportation Research Part A: Policy and Practice*, 154, 1-22. Url: <https://arxiv.org/pdf/2010.15673.pdf>
- 3) Sanaullah, I. (equal contribution), **Alsaleh, N. (equal contribution)**, Djavadian, S., & Farooq, B. (2021). Spatio-temporal analysis of on-demand transit: A case study of Belleville, Canada. *Transportation Research Part A: Policy and Practice*, 145, 284-301. Url: <https://arxiv.org/pdf/2012.02600.pdf>
- 4) Khasawneh, M. A., Aljarrah, M., & **Alsaleh, N.** (2021). Artificial Neural Network (ANN) Approach to Predict LWST Values from Friction and Texture Measurements. *International Journal of Engineering and Technology*, 13 (3), 31-35.
- 5) Khasawneh, M. A., & **Alsaleh, N.** (2018). Turbo roundabout usage in lieu of conventional roundabouts for the Jordanian traffic conditions. *International Journal of Civil Engineering*, 16(12), 1725-1738.
- 6) **Alsaleh, N.**, & Shbeeb, L. (2018). Turbo, flower and conventional roundabouts in Jordan. *In Proceedings of 6th Annual international Conference on Architecture and Civil Engineering (ACE 2018)*, May (pp. 14-15).
- 7) Shbeeb, L., & **Alsaleh, N.** (2018). Evaluation of School Zone Improvement Schemes. *In Proceedings of 6th Annual International Conference on Architecture and Civil Engineering (ACE 2018)*, May (pp. 14-15).

### In Review

- 1) **Alsaleh, N.**, & Farooq, B. Is On-Demand Public Transit Always Sustainable? A Focus on Efficiency, Environmental Footprint, and Social Equity and Inclusion.
- 2) **Alsaleh, N.**, Farooq, B., Zhang, Y., & Farber, S. On-Demand Transit User Preference Analysis using Hybrid Choice Models. Url: <https://arxiv.org/pdf/2102.08256>
- 3) Ansar, S. M., **Alsaleh, N.**, & Farooq, B. Behavioural Modelling of Automated to Manual Control Transition in Conditionally Automated Driving. Url: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4006056](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4006056)

**PRESENTATIONS****Conference Presentations**

Transportation Research Board (TRB) 102nd Annual Meeting. *"Sustainability Analysis of Shared On-Demand Transit with a focus on Equity, Diversity, and Inclusion."* January 8-12, 2023. Washington DC, USA.

Transportation Research Board (TRB) 102nd Annual Meeting. *"Exploring Impacts of Covid-19 Pandemic on Ridesourcing Services in Small Towns and Big Cities."* January 8-12, 2023. Washington DC, USA.

16th International Conference on Travel Behaviour Research (IATBR 2022). *"Sustainability Analysis of Shared On-Demand Transit with a focus on Equity, Diversity, and Inclusion."* December 11-15, 2022. Santiago, Chile.

Transportation Research Board (TRB) 101st Annual Meeting. *"Analysis of Driver Behaviour Towards CAV Control Transition in Mixed Traffic Environment."* January 9-13, 2022. Washington DC, USA.

10th Conference on Scientific Research in Jordan. *"Demand Modelling Framework for Emerging Shared On-Demand Mobility Services in Low Density Areas."* November 27, 2021. Amman, Jordan.

6th Annual international Conference on Architecture and Civil Engineering. *"Turbo, flower and conventional roundabouts in Jordan."* May 14-15, 2018. Singapore.

6th Annual international Conference on Architecture and Civil Engineering. *"Evaluation of School Zone Improvement Schemes."* May 14-15, 2018. Singapore.

8th International Conference on Engineering, Project and Product Management. *"Turbo roundabout usage in lieu of conventional roundabouts for the Jordanian traffic conditions."* September 19-21, 2017. Amman, Jordan.

**Invited Presentations**

Martin Centre for Architectural and Urban Studies, University of Cambridge, *"Sustainability Analysis of Shared On-Demand Transit with a focus on Equity, Diversity, and Inclusion."* Applied Urban Modelling Conference (AUM2022), June 28 – July 1, 2022. United Kingdom.

Town of Innisfil, Ontario, *"Exploring On-demand Transit Options for The Town of Innisfil."* Uber Transit Project - Monthly Updates, February 17, 2022.

Martin Centre for Architectural and Urban Studies, University of Cambridge, *"Spatio-Temporal Demand Modelling for On-Demand Transit Services."* Applied Urban Modelling Conference (AUM2020), January 28, 2021. United Kingdom.

**RESEARCH AND WORK EXPERIENCE**

**Mobility Network, University of Toronto (UofT)**

Toronto, ON

*Postdoctoral Researcher, Autonomous Vehicles*

January 2023 - Present

I am working with Professor Eric Miller to investigate the potential influence of various zero-occupant vehicle operating strategies on network congestion, the environment, and parking demand. This research project is intended to assist the City of Toronto in developing its Automated Vehicles Tactical Plan and upcoming Micromobility Strategy.

*Academic advisor:* Professor Eric Miller

**Laboratory of Innovations in Transportation (LiTrans), Toronto Metropolitan University***Graduate Research Assistant*

September 2019 – December 2022

I worked on several emerging on-demand public transit projects, including:

- On-Demand Transit Service offered by Pantonium Inc., City of Belleville, Ontario.
  - Perform an in-depth spatio-temporal demand and supply analysis.
  - Develop data-driven models for trip production and distribution.
  - Explore factors affecting the demand levels.
  - Establish advanced discrete choice models to explain public transit user's service preference between the fixed-route transit and on-demand transit services.
- On-Demand Transit Service offered by Uber Technologies Inc., Town of Innisfil, Ontario.
  - Analyzing and modelling the impact of the COVID-19 pandemic on the spatio-temporal patterns of demand.
  - Develop a micro-simulation model aimed at:
    - \* Analyzing the sustainability of several on-demand public transit designs from the perspective of efficiency, environmental footprint, and social equity and inclusion.
    - \* Identifying the demand switching point between several on-demand public transit designs, e.g., crowdsourced, dedicated fleet, and hybrid transit systems.

*Academic advisor:* Professor Bilal Farooq

**Dar Al Omran Company**

Amman, Jordan

*Traffic Simulator Consultant*

April 2018 – January 2019

Part-time traffic simulator consultant at Irbid City Center Upgrading Project. Main responsibilities:

- Evaluate, analyze, and simulate the existing traffic conditions.
- Propose and simulate different traffic scenarios to enhance the level of service of Irbid city.
- Preparing a fully detailed traffic report.

*Advisor:* Professor Lina Shbeeb

**Consolidated Contractor Company (CCC)**

Doha, Qatar

*Trainee Engineer*

June 2015 – August 2015

Professional engineering training as a prerequisite for obtaining a bachelor's degree in civil engineering.

**TEACHING EXPERIENCE****Instructor**

**Al-Ahliyya Amman University (AAU)**  
**Lecturer of Civil Engineering**

Amman, Jordan  
October 2017 – September 2019

Preparing and teaching the following civil engineering courses:

- Transportation Engineering.
- Computer Applications in Civil Engineering.
- Engineering Statistics.
- Numerical Analysis.
- Geotechnical Engineering.
- Geotechnical Engineering Laboratory.
- Civil Engineering Drawing.

**Al Hussein Technical University (HTU)**  
**Lecturer of Civil Engineering**

Amman, Jordan  
February 2019 – July 2019

Part-time lecturer at HTU School of Construction Technology and Built Environment that follows Pearson BTEC (Business and Technology Education Council) qualifications and standards, where my responsibilities include:

- Teaching Geotechnics & Soil Mechanics course.
- Developing the assignment brief & conducting both formative and summative assessments.

**Teaching Assistant**

**Toronto Metropolitan University**  
**Graduate Teaching Assistant**

Toronto, ON  
Winter 2020 & Winter 2021

Main Responsibilities:

- Preparing written materials for Transportation Engineering tutorial classes.
- Demonstrating and explaining Transportation Engineering course material.
- Helping students perform and solve Transportation Engineering course assignments.
- Grading students' assignments.

**STUDENT SUPERVISION**

Co-supervised **Maryam Elbeshbishy**, undergraduate student, with Professor Bilal Farooq, Toronto Metropolitan University, May 2021 – January 2022.

Co-supervised **Farah Al Tarifi**, M.Sc. student, with Dr. Nawal Louzi, Al-Ahliyya Amman University, January 2021 – June 2022.

Thesis title: “User preference analysis for integrated system of bus rapid transit and shared on-demand mobility services: a case study of Amman, Jordan”.

## REVIEW ACTIVITIES

Invited reviewer for some international journals:

- Transportation Research Record (TRR). (Two Manuscripts Reviewed).
- Journal of Transport Geography. (One Manuscript Reviewed).
- Transportation Research Board (TRB) 101st Annual Meeting, 2022. (Eight Manuscripts Reviewed).

## LEADERSHIP SKILLS

**Toronto Metropolitan University-Institute of Transportation Engineers (TMU-ITE) student chapter**

**President**

2021-2022 Academic Year

Responsibilities include but not limited to the following:

- Communicate with the Faculty Advisor.
- Chair business and general meetings.
- Ensure active internal and external communications.
- Plan and organize chapter activities and events.
- Supervise chapter activities and committees.
- Name any committees and appoint chairs.

**Intelligent Transportation Systems (ITS) Canada Virtual Conference  
Moderator, Innovative Sessions**

Toronto, ON  
June 21-22, 2021

Moderating three individual presentations. Main Responsibilities:

- Keep the discussion flowing.
- Invite people to ask questions of the presenter.
- Prepare and ask questions to fill any gaps.

- Welcome new people into the conversation with a quick recap of the discussion.

## CERTIFICATIONS

- Institute for Engineering Teaching, Canadian Engineering Education Association, June 2021.
- Data Analysis and Machine Learning with Python, Cognitive Class, IBM, October 2019. [Online Course].

## PROFESSIONAL MEMBERSHIPS

Institute of Transportation Engineers (ITE)	May 2021 - Present
ITE Canada	May 2021 - Present
Jordan Association of Engineers (JAE)	September 2015 - Present
Jordanian Roads Society (JRS)	February 2019 - Present

## TECHNICAL

### Data Analysis and Modelling

Python and MATLAB

### Transport Modelling

Simulation of Urban MObility (SUMO), PTV Solutions (VISSIM, VISUM, VISTRO), MATLAB

### Road and Intersection Design Tools

AutoCAD, Civil 3D, and Transoft Solutions

### Geo-Spatial Modelling Techniques

GIS and Python

### Programming

Python, MATLAB, and L<sup>A</sup>T<sub>E</sub>X

## REFERENCES

Available Upon Request.