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REZA MAHMOUDI

Department of Civil & Mineral Engineering, University of Toronto, 5 St George St, Toronto, ON, Canada
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EDUCATION

Schulich School of Engineering, University of Calgary, Canada 2024

PhD, Civil Engineering / Transportation Engineering

- Dissertation: Optimal Configurations for Urban Transit: A Study on Bus and Express Network Design via Analytical Approaches and Mathematical Programming
- Co-supervisors: Professor Saied Saidi, Professor Chan Wirasinghe

Department of Industrial Engineering, Isfahan University of Technology, Iran 2019

PhD, Industrial Engineering

- Dissertation: Sustainable Urban Transportation Network Design Using Data Envelopment Analysis and Game Theory
- Co-supervisors: Professor Seyyed-Nader Shetab-Boushehri, Professor Ali Emrouznejad, Professor Seyed Reza Hejazi

Department of Industrial Engineering, Azad University, Iran 2013

MSc, Industrial Engineering

- Dissertation: Modeling Power Plant Competition Under Government Financial Intervention Considering Environmental Factors: A Game Theory Approach
- Co-supervisors: Professor Ashkan Hafezalkotob, Professor Ahmad Makui

Department of Science, University of Kurdistan, Iran 2011

BSc, Mathematics - Education

POSTDOCTORAL POSITION

Department of Civil & Mineral Engineering, University of Toronto, Canada 2024-Present

Postdoctoral Fellow, Civil Engineering / Transportation Engineering

- Project: Integrating On-Demand Mobility with Fixed Route Transit services
- Supervisor: Prof. Amer Shalaby

HONOR & AWARDS

Mitacs Postdoctoral Fellowship Award (\$20,000) 2025

Mitacs Accelerate Postdoctoral Fellowship Award (\$50,000) 2024-2025

Graduate Student Research Impact Excellence Award (\$1,000) 2024

The Alberta Innovates Graduate Student Scholarship (\$124,000) 2020-2024

Eyes High International Doctoral Scholarship, University of Calgary (\$15,000) 2020-2021

Second-ranked graduate student in Ph.D. degree in terms of GPA among all peers in the department of Industrial and Systems Engineering, Isfahan University of Technology 2015-2019

RESEARCH INTERESTS

Core Focus: AI- and data-driven optimization for sustainable, equitable, and resilient urban mobility systems.

Primary Applications: Hybrid fixed- and flex-route transit network design and operations planning; microtransit; shared and emerging mobility technologies (micromobility, autonomous vehicles); large-scale multi-modal network modeling.

Interdisciplinary Applications: Logistics, supply chains, and sustainable operations.

Key Methodologies: Mathematical Programming, Game Theory, Data Envelopment Analysis, Machine Learning, Metaheuristics.

RESEARCH

PEER-REVIEWED JOURNAL PUBLICATIONS

Mahmoudi, R., Saidi, S. and Wirasinghe, S.C., 2025. Expansion of bi-modal express transit networks – a hybrid optimization approach. *Transportation Research Part E: Logistics and Transportation Review*, 202, p.104317.

Mahmoudi, R., Saidi, S., Emrouznejad, A., 2025. Mathematical Programming in Public Bus Transit Design and Operations: Emerging Technologies and Sustainability – A Review. *Socio-Economic Planning Sciences*, 102155.

Wang, Y., **Mahmoudi, R.**, Saidi, S., Nigel Waters, 2025. Sustainable public bus transit systems: Proof-of-concept. *Transportation Research Procedia* 82, 1138-1150.

Mahmoudi, R., Saidi, S. and Wirasinghe, S.C., 2024. A critical review of analytical approaches in public bus transit network design and operations planning with focus on emerging technologies and sustainability. *Journal of Public Transportation*, 26, p.100100.

Shetab-Boushehri, S.N., Poorzahedy, H. and **Mahmoudi, R.**, 2024. Enhancing Network Performance in Mitigating the Impact of Traffic Accidents with Full User Information, *Journal of Transportation and Logistics*.

Mahmoudi, R., Saidi, S. and Wirasinghe, S.C., 2023. Optimal vehicle capacity and dispatching policy considering crowding in public bus transit services. *Transportmetrica A: Transport Science*, pp.1-25.

Mahmoudi, R. and Emrouznejad, A., 2023. A multi-period performance analysis of airlines: A game-SBM-NDEA and Malmquist Index approach. *Research in Transportation Business & Management*, p.100801.

Mahmoudi, A., **Mahmoudi, R.**, Emrouznejad, A., Hafezalkotob, A., 2022. Sustainable multi-channel supply chain design: An intuitive fuzzy game theory approach to deal with uncertain business environment. *Environment, Development and Sustainability*.

Shetab-Boushehri, S.N., Rajabi, P. and **Mahmoudi, R.**, 2022. Modeling location–allocation of emergency medical service stations and ambulance routing problems considering the variability of events and recurrent traffic congestion: A real case study. *Healthcare Analytics*, 2, p.100048.

Mahmoudi, R., Shetab-Boushehri, S.N. and Emrouznejad, A., 2022. Sustainability in the evaluation of bus rapid transportation projects considering both managers and passengers perspectives: A triple-level efficiency evaluation approach. *International Journal of Sustainable Transportation*, pp.1-19.

Mahmoudi, A., Govindan, K., Shishebori, D. and **Mahmoudi, R.**, 2021. Product pricing problem in green and non-green multi-channel supply chains under government intervention and in the presence of third-party logistics companies. *Computers & Industrial Engineering*, 159, p.107490.

- Riahi Samani, A., Shetab-Boushehri, S.N. and **Mahmoudi, R.**, 2021. Reliable Urban Transportation Network Design Problem Considering Recurrent Traffic Congestions. *Advances in Industrial Engineering*, 55(1), pp.69-89.
- Mahmoudi, R.**, Emrouznejad, A., Shetab-Boushehri, S.N. and Hejazi, S.R., 2020. The origins, development and future directions of Data Envelopment Analysis approach in transportation systems. *Socio-Economic Planning Sciences*, 69 (100672).
- Mahmoudi, R.**, Shetab-Boushehri, S.N., Hejazi, S.R., Emrouznejad, A. and Rajabi, P., 2019. A hybrid egalitarian bargaining game-DEA and sustainable network design approach for evaluating, selecting and scheduling urban road construction projects. *Transportation Research Part E: Logistics and Transportation Review*, 130, pp.161-183.
- Mahmoudi, R.**, Emrouznejad, A., Khosroshahi, H., Khashei, M. and Rajabi, P., 2019. Performance evaluation of thermal power plants considering CO2 emission: A multistage PCA, clustering, game theory and data envelopment analysis. *Journal of cleaner production*, 223, pp.641-650.
- Mahmoudi, R.**, Shetab-Boushehri, S.N., Hejazi, S.R. and Emrouznejad, A., 2019. Determining the relative importance of sustainability evaluation criteria of urban transportation network. *Sustainable Cities and Society*, 47, p.101493.
- Mahmoudi, R.**, Emrouznejad, A. and Rasti-Barzoki, M., 2019. A bargaining game model for performance assessment in network DEA considering sub-networks: a real case study in banking. *Neural Computing and Applications*, 31(10), pp.6429-6447.
- Tavana, M., Khalili-Damghani, K., Arteaga, F.J.S., **Mahmoudi, R.** and Hafezalkotob, A., 2018. Efficiency decomposition and measurement in two-stage fuzzy DEA models using a bargaining game approach. *Computers & Industrial Engineering*, 118, pp.394-408.
- Mahmoudi, R.** and Rasti-Barzoki, M., 2018. Sustainable supply chains under government intervention with a real-world case study: An evolutionary game theoretic approach. *Computers & Industrial Engineering*, 116, pp.130-143.
- Hafezalkotob, A., **Mahmoudi, R.**, Hajisami, E. and Wee, H.M., 2018. Wholesale-retail pricing strategies under market risk and uncertain demand in supply chain using evolutionary game theory. *Kybernetes*, 47(6), pp.1178-1201.
- Mahmoudi, R.**, Alinaghian, M. and Mogouie, H., 2017. A mathematical model for sustainable probabilistic network design problem with construction scheduling considering social and environmental issues. *Journal of Industrial and Systems Engineering*, 10(special issue on scheduling), pp.17-37.
- Hafezalkotob, A., **Mahmoudi, R.** and Shariatmadari, M., 2017. Vehicle routing problem in competitive environment: two-person nonzero sum game approach. *Journal of Industrial and Systems Engineering*, 10(2), pp.35-52.
- Hafezalkotob, A. and **Mahmoudi, R.**, 2017. Selection of energy source and evolutionary stable strategies for power plants under financial intervention of government. *Journal of Industrial Engineering International*, 13(3), pp.357-367.
- Mahmoudi, R.**, Hafezalkotob, A. and Makui, A., 2014. Source selection problem of competitive power plants under government intervention: a game theory approach. *Journal of industrial engineering international*, 10(3), p.59.
- Mahmoudi, R.**, Ghorbani, R. and Mahmoudi, A., 2014. Cooperation or Non-Cooperation: A Bargaining Game Model between Mobile Operator and Financial Institution in Mobile Payment Market. *Iranian journal of business and economics*.

RESEARCH PRODUCTS & SOFTWARE TOOLS

T-SPARK (Transit System Performance Analysis and Redesign Kit)

2024–Present

A web-based (Python/Flask) decision support tool developed for the City of Mississauga's to evaluate and redesign fixed-route transit services and assess their replacement with on-demand alternatives.

- **Role:** Lead Developer
- **Technology:** Developed using Python and Flask, incorporating over 20 sophisticated optimization and analytical models for hybrid fixed-route and on-demand network design.
- **Status:** Currently in use by industry partner; a public version is being prepared for broader deployment.

REVISED, SUBMITTED & PREPRINT PAPERS

Mahmoudi, R., Da Silva, D., Shalaby, A., Kerstens, K., To Fix or to Flex: Re-Optimizing Inefficient Fixed-Route Transit or Shifting to On-Demand for Greater Efficiency. Under Review: Transportation Research Part A: Policy and Practice.

Alshalalfah, B., Shalaby, A., **Mahmoudi, R.,** An Analytical Framework for Flex-route Transit Service Planning, Revised & Resubmitted: Transportmetrica A: Transport Science.

Alshalalfah, B., Shalaby, A., **Mahmoudi, R.,** Itani, A., Static and Dynamic Scheduling of Flex-Route Transit Services using Constraint Programming, Revised & Resubmitted: Transportation Research Interdisciplinary Perspectives.

Mahmoudi, R., Saidi, S. and Wirasinghe, S.C., 2025. A systematic literature review on the application of analytical approaches and mathematical programming in public bus transit network design and operations planning: Part I. arXiv preprint arXiv:2502.09508.

Mahmoudi, R., Saidi, S. and Wirasinghe, S.C., 2025. A systematic literature review on the application of analytical approaches and mathematical programming in public bus transit network design and operations planning: Part II. arXiv preprint arXiv:2502.19430.

WORKING PAPAERS

Mahmoudi, R., Saidi, S., Wirasinghe, C., Revisiting single and bi-modal transit network planning on a rectangular grid network – analytical approach, Ready to submit. Target Journal: Public Transport.

Mahmoudi, R., Da Silva, D., Shalaby, A., Hybrid Fixed-Route and On-Demand Transit Network Design: A Comprehensive Literature Review and Design Guideline. Target Journal: Transportation Research Part C/Part D.

Islam, S., Shalaby, A., Da Silva, D., **Mahmoudi, R.,** Itani, A., Towards an Operational Analytical Framework for Planning On Demand Transit Services: A Case Study of MiWay, Target Journal: Journal of Transport Geography.

Rajabi, P., **Mahmoudi, R.,** Nguyen, J., Information sharing and cost reduction in green and regular supply chains under government's tariffs with different decision making scenarios. Target Journal: Management Science.

Mahmoudi, R., Kattan, L., Saidi, S., Exclusive access policies and online information paradox in traffic assignment for mixed human-driven and connected autonomous vehicle. Target Journal: Transportation Research Part C.

Ataeian, S., **Mahmoudi, R.,** Saidi, S., Modular vs. Fixed and Mixed Size Vehicles: What Is the Best Bus Fleet to Serve Passengers Using Bus Transit Service?, Ready to submit. Target Journal: IEEE Transactions on Intelligent Transportation Systems.

CONFERENCE PRESENTATIONS

Ataeian, S., **Mahmoudi, R.**, Saidi, S., Bus transit service operations planning: modular vs conventional fleet, WCTR2023, Montreal.

Wang, Y., **Mahmoudi, R.**, Saidi, S., Nigel Waters, Sustainable public bus transit systems: Proof-of-concept, WCTR2023, Montreal.

Alinaghian, M., Mogouie, H., **Mahmoudi, R.**, 2016. A linearized model applied for constrained dynamic facility location network design problem. 9th International Iranian Operations Research conference.

Mahmoudi, R. & Hafezalkotob, A., 2015. Monitoring and Implementation: A Bargaining Game Model between Government and Core Enterprise in Greening Supply Chain. 11th International Industrial Engineering Conference.

PROFESSIONAL TEACHING AND WORK EXPERIENCE

INSTRUCTOR

Undergraduate course: Industrial Management and Economics, Isfahan University of Technology,
Average teaching evaluation score: 6.53/7 Winter 2018

Undergraduate course: Transportation Systems Planning, Daneshpajooan Higher Education Institute,
Average teaching evaluation score: 6/7 Winter 2018

Undergraduate course: Industrial Management and Economics, Isfahan University of Technology,
Average teaching evaluation score: 6.21/7 Fall 2017

Undergraduate course: Linear Algebra and Introduction to Operations Research I, Daneshpajooan Higher Education Institute, **Average teaching evaluation score: 6.55/7** Fall 2017

National Organization for Development of Exceptional Talents, Iran 2011-2020

- Differential and Integral Calculus Basics
- Advanced Differential and Integral Calculus
- Discrete mathematics,
- Geometry
- Probability and Statistics

TEACHING ASSISTANT

Graduate course: Advanced Analysis and Modelling of Public Transportation Systems, University of Calgary Winter 2022

Graduate course: System Dynamics Modeling for Urban and Engineering Sustainability, University of Calgary Fall 2022

Graduate course: Game Theory, Isfahan university of technology Winter 2016

FACULTY SHADOWING

Prof. Amer Shalaby, Public Transit Operations and Planning, University of Toronto Winter 2025

Prof. Amer Shalaby, Urban Operations Research, University of Toronto Fall 2024

Prof. Amer Shalaby, Analytics for Transit & Mobility Systems, University of Toronto Summer 2024

Prof. Saeid Saidi, Advanced Analysis and Modelling of Public Transportation Systems, University of Calgary Winter 2022

Prof. Saeid Saidi, System Dynamics Modeling for Urban and Engineering Sustainability, University of Calgary Fall 2022

RESEARCH EXPERIENCE

RESEARCH ASSISTANT

Department of Civil & Mineral Engineering, University of Toronto -- For: Prof. Amer Shalaby
Duties included: Mathematical modeling, data collection, data cleaning and analysis in Python, organizing workshops, and mentoring graduate students' thesis 2024-Present

Department of Civil Engineering, University of Calgary -- For: Prof. Saidi and Prof. Wirasinghe
Duties included: Mathematical modeling, data collection, data cleaning and analysis in Python and MATLAB, grading, and managing undergraduate research assistants 2020-2024

Department of Industrial and Systems Engineering, Isfahan University of Technology -- For: Prof. Nader Shetab
Duties included: Mathematical Modeling, data collection, data cleaning and analysis in MATLAB, Gams, Gauss, and Lingo, grading, and managing undergraduate research assistants 2015-2020

Surrey Business School, University of Surrey -- For: Prof. Ali Emrouznejad
Duties included: Mathematical Modeling, data collection, data cleaning and analysis in Python, MATLAB, Gams, and Lingo, remote collaboration 2016-2019

Department of Industrial Engineering, Azad University – South Tehran Branch -- For: Prof. Ashkan Hafezalkotob
Duties included: Mathematical Modeling, Data collection and Analysis in MATLAB 2011–2014

PROFESSIONAL SERVICE & COMMUNITY INVOLVEMENT

MENTORING & SUPERVISION

Co-supervisor of MITACS visitor international student, University of Calgary, Department of Civil Engineering 2022
Student: Yuxiao Wang
Co-supervised with Professor Saied Saidi
Project: Sustainable public bus transit systems: definition and evaluation

SCIENTIFIC COMMITTEE MEMBERSHIPS

Friend of standing committees on Intelligent Transportation Systems (ACP15), Transportation Network Modeling (AEP40), Transportation Demand Management (AEP60), Data for Decision Making (AJE70), Transit Management and Performance (AP010), Public Transportation Planning and Development (AP025), Bus Transit Systems (AP050), and Innovative Public Transportation Services and Technologies (AP020) at Transportation Research Board (TRB)

Scientific committee member of the *ICBAP2025: International Conference on Business Analytics in Practice 2025*, University of Piraeus, Greece, August 24-27, 2025.

Scientific committee member of the *DEA2024: International Conference on Data Envelopment Analysis*, a collaborative effort between BIMTECH, Delhi NCR, India, and the Centre for Business Analytics in Practice (CBAP) at Surrey Business School, UK. BIMTECH, Noida, Delhi, India November 18-21, 2024.

Scientific committee member of the *DEA45: International Conference on Data Envelopment Analysis*. Surrey Business School, University of Surrey, UK, September 4-6, 2023.

AD HOC REVIEWER

2014-Present

Transportation Science	Applied Mathematical Modelling
Omega	Socio-Economic Planning Sciences
Computer & Industrial Engineering	Iranian journal of fuzzy systems
Transportation Letters	Kybernetes
Travel Behaviour and Society	Mathematical Problems in Engineering
Journal of Industrial engineering international	4OR
TRB conferences/TRR Journal	Journal of Cleaner Production

International Symposium on Transportation and Traffic Theory (ISTTT)

Transportmetrica A: Transportation Science

Canadian Society for Civil Engineer Annual Conference

Journal of Systems Science and Systems Engineering

LEADERSHIP EXPERIENCE

Leading a volunteer team of high school teachers to identify elite students with special problems or needs and monitoring and helping them for a period of 1-3 years, Iran 2017-2020

President, Mathematical Association of Lahroud, Iran 2014-2015

- Organized academic workshops and coordinated training programs for newly hired teachers

Co-leader of an industrial project named “Accessible Pedestrian Signal in Street Networks of Tehran” for Tehran municipality, Iran 2013

Leading camping programs for BSc. students at Kurdistan University, Kurdistan, Iran 2009-2010

VOLUNTEER ACTIVITIES

Volunteer in the Canadian Operational Research Society conference, London, Canada 2024

Helping new international students settle in Calgary during COVID-19 as a member of the Yara Group, Calgary, Canada 2021

Teaching for middle/high school students who did not have access to educational resources 2011-2020

PROFESSIONAL DEVELOPMENT

Introduction to Transit Service Policy by Jarrett Walker, Planetizen Courses, Issued Certification 2025

Transit Service Design, Planetizen Courses, Issued Certification 2025

Public Transportation Systems, Online Course by Prof. Nigel Wilson, Dr. Gabriel Sanchez-Martinez, Dr. Neema Nassir, MIT

Cities and the Challenge of Sustainable Development, Online course by Professor Jeffrey D. Sachs, Columbia University

Intro to Traffic Flow Modeling and Intelligent Transport System, Online course by Professor Nikolas Geroliminis, École Polytechnique Fédérale de Lausanne (EPFL)

Python Basics for Data Science - IBM PY0101EN, Online course by IBM.

Smart Cities – Management of Smart Urban Infrastructures, Online course by Professor Matthias Finger, École Polytechnique Fédérale de Lausanne (EPFL)

Ivey Sustainability Conference, Building Sustainable Value Research Centre, Ivey Business School, Western University, Canada, December 2022.

COMPUTER SKILLS

PROGRAMMING & DATA ANALYSIS:

Python	Pascal
MATLAB	R
Maple	Mathematica

SOFTWARE:

ArcGIS/QGIS	Lingo
EMME	Gams
PTV Visum	Microsoft Office Suite
Gauss	Microsoft Project
Minitab	Microsoft Visio
Vensim	

INDUSTRIAL COOPERATION & CONSULTING

Mitacs Postdoctoral Internship, MiWay Transit Agency, City of Mississauga, Canada	2024–2025
- Conducted feasibility analysis of on-demand transit service. - Developed an AI-driven optimization approach for hybrid transit network design.	
Project Collaboration, City of Calgary, Canada	(2020-2024)
Revised master plan of the city for redesigning the bi-modal express transit network of Calgary.	
Project Collaboration, City of Isfahan, Iran	(2015-2019)
Selected and scheduled urban transportation network projects.	

LANGUAGES

English (Proficient)	Azerbaijani (Native)
Turkish (Native)	Persian (Native)

REFERENCES

Professor Amer Shalaby
Professor and Bahen/Tanenbaum Chair in Civil Engineering, Transit Analytics Lab and Mobility Network
Department of Civil & Mineral Engineering
University of Toronto
amer.shalaby@utoronto.ca, +14164280613

Professor S. Chan Wirasinghe
Emeritus Professor
Department of Civil Engineering
University of Calgary
wirasing@ucalgary.ca, +14037087665

Professor Saeid Saidi
Associate Professor
Department of Civil Engineering
University of Calgary
ssaidi@ucalgary.ca, +14032207479

Professor Ali Emrouznejad
Professor and Chair in Business Analytics
Surrey Business School
University of Surrey
a.emrouznejad@surrey.ac.uk, +44 (0)1483 300800

Professor Seyyed Nader Shetab Bushehri
Associate Professor, Dean of Department of Transportation Engineering
Department of Industrial and Systems Engineering and Department of Transportation Engineering
Isfahan University of Technology
shetab@cc.iut.ac.ir, +989132190995

REZA MAHMOUDI



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U.S. Permanent Resident

PROFESSIONAL SUMMARY

Transportation Planner with over 10 years of experience specializing in multimodal transportation systems for transit agencies and municipalities. Combines strong technical expertise in transit planning, feasibility studies, environmental studies, data analytics, GIS, and equity and accessibility analysis with hands-on experience in public engagement and strategic transportation planning. Proven ability to deliver complex projects, including bus rapid transit (BRT), light rail transit (LRT), microtransit, and multimodal corridor studies. Skilled in leading project delivery and managing client relationships from scope to completion, applying advanced modeling to enhance community connectivity and create resilient, efficient, and sustainable transportation solutions across diverse urban contexts.

EDUCATION

University of Calgary	Calgary, Canada
<i>PhD in Transportation Engineering</i>	<i>2020-2024</i>
Isfahan University of Technology	Isfahan, Iran
<i>PhD in Transportation Engineering</i>	<i>2015-2019</i>
Azad University	Tehran, Iran
<i>MSc in Economic-Social Systems Engineering</i>	<i>2011-2013</i>
University of Kurdistan	Sanandaj, Iran
<i>BSc in Mathematics</i>	<i>2007-2011</i>

EXPERIENCE

University of Toronto in partnership with MiWay (City of Mississauga)	Toronto, Canada
<i>Transit Planning & Analytics Consultant</i>	<i>May 2024-Present</i>

- Developed T-SPARK: Transit Service Performance Analysis & Redesign Kit – A web app.
- Led the development of data-driven models for stop locations, routing, PU/D/O points, and service frequency for fixed-route, flex-route, and DRT services, directly supporting service planning for the transit agency.
- Reviewed “MiWay 5 Transit Service Plan” to identify potential opportunities of introducing microtransit services.
- Simulated service design scenarios in PTV Visum, evaluating travel time, ridership, and sustainability outcomes.
- Conducted spatiotemporal and demographic analyses to inform transit planning decisions.
- Performed GTFS and demand data analyses to support transit network simulations and optimizations.
- Led grant writing and proposal development, resulting in a secured grant from Mitacs, Canada.
- Prepared technical documentation and client-ready reports for municipal partners and senior management.

Calgary Transit - City of Calgary	Calgary, Canada
<i>Transportation Planner</i>	<i>2020-2024</i>

- Reviewed and critiqued the city's long-term strategic plan for the express transit network.
- Led planning the extension of Calgary's bi-modal express transit network, integrating LRT and Bus Rapid Transit (BRT) systems to achieve up to 27% improvement in access, transfer, and riding costs.
- Planned modular bus feeder services, resulting in a 94% decrease in the number of unused seats.
- Delivered adaptable models for network design, service scheduling, and fleet and vehicle sizing for the city.
- Presented findings to city committees and stakeholders, translating complex analyses into clear visual summaries.

Municipality of Isfahan

Contract – Transportation Planner

Isfahan, Iran

2015-2020

- Reviewed the municipality's master plan for the city's urban transportation network.
- Led public outreach initiatives by coordinating community meetings and presentations, effectively communicating project scope and benefits to diverse stakeholders.
- Conducted public outreach sessions and stakeholder interviews (500+ participants) to capture community perspectives.
- Designed and documented strategic sustainable urban transportation plans for the city.
- Managed the project lifecycle for BRT corridor implementation, including evaluation, selection, and scheduling, resulting in a 6% decrease in emissions, a 19% increase in spatial equity, and a 4% decrease in total costs.
- Developed plans to enhance the city's transportation network performance and reliability, achieving up to 22% improvement in full-awareness scenarios.
- Delivered a framework for location-allocation of emergency medical service stations and ambulance routing, accounting for event variability and traffic congestion, increasing relief request coverage from 77.56% to 95.1%.
- Managed tasks, schedules, and deliverables for multi-disciplinary project teams.

Municipality of Tehra

Contract – System Engineer

Tehran, Iran

2013-2014

- Led a feasibility study and developed implementation guidelines for installing accessible pedestrian signals at selected intersections, enhancing safety and accessibility.

HONORS AND AWARDS

- University of Calgary PhD Scholarship (\$25,000/year)
- 4 years "The Alberta Innovates Graduate Student Scholarship" Awardee, \$124,000, 2020-2024
- "Eyes High International Doctoral Scholarship" Awardee, \$15,000, 2020-2021

SKILLS

- **Programming & Software:** Python, MATLAB, ArcGIS, PTV Visum, EMME, SAS, Minitab, Mathematica
- **Data Analysis & Modeling:** GTFS Data Analysis, Demand Modeling & Forecasting, Spatiotemporal & Demographic Analysis, Accessibility & Equity Analysis, Machine Learning, Multivariate Data Analysis, Data Visualization, Python Dashboards, AI-Driven & Data-Driven Optimization, Routing and Scheduling Algorithms, Large-Scale Network Design, Network Optimization, Scenario Simulation, Performance Evaluation
- **Transportation Planning:** Multimodal Transportation Systems Analysis, Public Transit Planning, Microtransit Planning, Bus Rapid Transit (BRT) Planning, Sustainable & Smart Mobility, Feasibility Studies, Corridor Studies, Equitable Mobility Solutions, Cost-Benefit Analysis, Active Mobility, Strategic Planning, Survey Design and Implementation, Community Engagement
- **Microsoft Suite:** Microsoft Office (Word, Excel, PowerPoint), Microsoft Visio, Microsoft Project
- **Soft Skills:** Project Management, Mentoring, Client Relationship Management, Technical Reporting, Grant and Proposal Writing, Communication, Mentoring, Strong Team-Work Spirit, Problem-Solving, Flexibility, Adaptability, Excellent Presentation Skills, Critical Thinking, Creativity, Curiosity, Fast Learning

ADDITIONAL

- **Teaching Experience:** Lecturer for transportation courses at universities; Teaching Assistant and Research Assistant for various transportation courses
- **Publications:** Authored over 20 peer-reviewed articles in top-tier transportation journals
- **Professional Committee Membership:** Friend of standing committees on Intelligent Transportation Systems (ACP15), Transportation Network Modeling (AEP40), Transportation Demand Management (AEP60), Data for Decision Making (AJE70), Innovative Public Transportation Services and Technologies (AP020), Transit Management and Performance (AP010), Public Transportation Planning and Development (AP025), Bus Transit Systems (AP050), and Innovative Public Transportation Services and Technologies (AP020) at Transportation Research Board (TRB)