Rezvan Mohammadiziazi

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EDUCATION

Ph.D.	**Civil and Environmental Engineering**	**University of Pittsburgh**	**2022**
M.Sc.	**Civil Engineering**	**University of Delaware**	**2017**
B.Sc.	**Track and Railway Structures Engineering**	**Iran University of Science and Technology**	**2011**

APPOINTMENTS

May 2021 to Present:	Summer intern, Carbon-Free Building Division, Rocky Mountain Institute, Boulder, CO
2017 to Present:	Doctoral Researcher, Department of Civil and Environmental Engineering, University of Pittsburgh, Pittsburgh, PA
2015 to 2017:	Graduate Student Researcher, Department of Civil and Environmental Engineering, University of Delaware, Newark, DE
2011 to 2015:	Project Engineer, Tehrangoruh CO, Tehran, IR

JOURNAL PUBLICATIONS

1. **Mohammadiziazi, R.**, Copeland, S., Bilec, M.M. (2021). "Urban Building Energy Model: Database Development, Validation, and Application for Commercial Building Stock." *Energy and Buildings*. https://doi.org/10.1016/j.enbuild.2021.111175

2. Clark, R., Spisso, A., Ketchman, K.J., Landis, A.E., Parrish, K., **Mohammadiziazi, R**., Bilec, M.M. (2021). "Gamifying Sustainable Engineering Courses: Student and Instructor Perspectives of Community, Engagement, Learning, and Retention." *Journal of Civil Engineering Education*. https://doi.org/10.1061/(ASCE)EI.2643-9115.0000047

3. **Mohammadiziazi, R.**, Bilec, M.M. (2020). "Application of Machine Learning for Predicting Building Energy Use at Different Temporal and Spatial Resolution under Climate Change in USA." *Buildings*. https://doi.org/10.3390/buildings10080139

4. **Mohammadiziazi, R.**, Faghri, A.J. (2016). "A Risk-Level Model for Different Climate Change-Related Diseases in Different Countries." *International Journal of Environmental Research and Development.*

JOURNAL PUBLICATION SUBMITTED/Under Review

1. Cruz Rios, F., Babbitt, C.W., Beckman, E.J., Berry, B., Copeland, S., Fullerton, D., Hacku, R., He, S., Isenhour, C., Jiang, G., Khanna, V., Kooduvalli, K., Lee, E., Malarkey, K., **Mohammadiziazi, R.**, Padgett, K., Salmon, D., Smith, E., Theis, T.L., Vaden, J.M., Wilmer, C.E., Zappitelli, J., Bilec, M.M. (2021). "Circular Economy: Are we going in circles." *Environmental Research: Infrastructure and Sustainability*.

CONFERENCE PROCEEDINGS

1. **Mohammadiziazi, R.**, Bilec, M.M. (2021 accepted). "Integrating Climate Change with Urban Building Energy Modeling: Case of A Commercial Building Stock", *Proceedings of Building Simulation 2021 Conference*.

2. **Mohammadiziazi, R.**, Bilec, M.M (2019). "Developing a Framework for Urban Building Life Cycle Energy Map with a Focus on Rapid Visual Inspection and Image Processing." *Procedia CIRP*. https://doi.org/10.1016/j.procir.2019.01.048

3. **Mohammadiziazi, R.**, Bilec, M.M. (2018). "Fast Estimation of Buildings' Embodied Energy Using Economic Input-Output Method for an Urban Model." *3rd International Graduate Student Symposium for the PhD Program, Buildings, Cities, and Performance, IIT College of Architecture.*

PRESENTATIONS AND POSTERS

1. **Mohammadiziazi, R.**, Bilec, M.M. (2021). "Integrating Climate Change with Urban Building Energy Modeling: Case of A Commercial Building Stock." Presentation, Building Simulation 2021, September 1-3, 2021, Bruges, Belgium.

2. **Mohammadiziazi, R.**, Bilec, M.M. (2021). "Material Stock Analysis of Buildings: Barriers, Opportunities, Future Perspective." Presentation, International Symposium on Sustainable Systems and Technology 2021, June 21-25, 2021, Virtual Conference.

3. **Mohammadiziazi, R.**, Bilec, M.M. (2021). "Estimating Building Energy Use Under Climate Change Using Machine Learning Approaches." Presentation, Architectural Engineering Institute 2021, April 7-9, 2021, Virtual Conference.

4. **Mohammadiziazi, R.**, Bilec, M.M. (2020). "Modelling Building Energy Use and Greenhouse Gas Emissions at an Urban Scale." Presentation, American Center for Life Cycle Assessment 2020, September 22-24, 2021, Virtual Conference.

5. **Mohammadiziazi, R.**, Bilec, M.M. (2020). "A Framework for Urban Building Energy Model: Focus on Dataset Development." Presentation, Building Performance Analysis Conference and SimBuild 2020, September 29 - October 1, 2020, Virtual Conference.

6. **Mohammadiziazi, R.**, Rickenbacker, H.J., Bilec, M.M. (2019). "Investigating Indoor Air Quality in Three Campus Buildings." Poster Presentation, Association of Environmental Engineering and Science Professors 2019, May 14-16, 2019, Tempe, Arizona.

7. **Mohammadiziazi, R.**, Bilec, M.M. (2019). "Developing a Framework for Urban Building Life Cycle Energy Map with a Focus on Rapid Visual Inspection and Image Processing." Presentation, 26th CIRP Life Cycle Engineering, May 7-9, 2019, West Lafayette, Indiana.

8. **Mohammadiziazi, R.**, Bilec, M.M. (2019). "A Bottom-Up Urban Building Life Cycle Model." Poster Presentation, Engineering Sustainability 2019, April 7-9, 2019, Pittsburgh, Pennsylvania.

9. **Mohammadiziazi, R.**, Bilec, M.M. (2018). "Fast Estimation of Buildings' Embodied Energy Using Economic Input-Output Method for an Urban Model." Presentation, Buildings, Cities, and Performance – 3rd International Graduate Student Symposium of the PhD Program at IIT College of Architecture 2018, November 16-18, 2018, Chicago, Illinois.

10. **Mohammadiziazi, R.**, Faghri, A., Li, M., (2018). "Impacts of Sea-Level Rise on Nonmotorized Transportation." Poster Presentation, Transportation Research Board 97th Annual Meeting 2018, January 7-11, 2018, Washington, DC.

11. **Mohammadiziazi, R.**, Faghri, A., (2016). "The Impacts of Climate Change on Non-Motorized Transportation in Delaware." Poster Presentation, Mid-Atlantic Transportation Sustainability Center – University Transportation Center 2016, August 4-5, Charlottesville, Virginia.

RESEARCH EXPERIENCE

Doctoral Researcher

Department of Civil and Environmental Engineering, University of Pittsburgh

- Developed and validated an Urban Building Energy Model for the commercial building stock of Pittsburgh, PA through defining a novel photogrammetry, image processing, and remote sensing framework.
- Assessed energy reduction of the commercial building stock of Pittsburgh, PA due to energy efficiency measures such as lighting, HVAC system, and envelope upgrades using the Urban Building Energy Model.
- Developed machine learning models to predict commercial buildings energy use under several climate change scenarios to aid in energy reduction policies and climate action plans.
- Developed a model to analyze and spatialize material stock of commercial buildings to improve reuse, recover, and recycle of materials at the end-of-life and promote circular economy of building sector.

Graduate Student Researcher

Department of Civil and Environmental Engineering, University of Delaware

- Evaluated number and condition of trails and bike routes that will be impacted by sea level rise due to climate change in Delaware utilizing GIS and resiliency analysis.
- Estimated travel time in Delaware routes using data obtained from Bluetooth sensors and GIS analysis.

Intern Researcher

Carbon-Free Building, Rocky Mountain Institute

- Assessed resiliency of retail and multi-family buildings in Florida in time of power outage, caused by hurricanes and storms, through estimating indoor environmental quality metrics.

TEACHING EXPERIENCE

Teaching assistant for five courses in the University of Pittsburgh and the University of Delaware.

CEE 3609: Advanced Topics in Life Cycle Assessment: Spring 2020

Department of Civil and Environmental Engineering, University of Pittsburgh

- Coordinated grading of homework and assignments.

CEE 1610/2610: Engineering and Sustainable Development: Spring 2018, Spring 2019, Spring 2021

Department of Civil and Environmental Engineering, University of Pittsburgh

- Coordinated grading of homework, assignments, and the course project.

CEE 2620: Advanced Green Building and Construction: Fall 2019, Fall 2020

Department of Civil and Environmental Engineering, University of Pittsburgh

- Coordinated grading of homework and assignments.
- Prepared course materials, designed homework, and gave lectures on building energy modeling.
- Prepared course materials and gave lectures on assessing indoor air quality of buildings.
- Defined and coordinated the course project that included measuring and analyzing indoor air quality parameters of three campus buildings.

CEE 1609/2609: Life Cycle Assessment Methods and Tools: Fall 2018

Department of Civil and Environmental Engineering, University of Pittsburgh

- Coordinated grading of homework and assignments.
- Gave lecture on utilizing SimaPro software to estimate environmental impacts of products and services.

CIEG452010: Transportation Facilities Design: Fall 2016

Department of Civil and Environmental Engineering, University of Delaware

- Prepared course materials and gave a lecture on evaluating the impacts of sea level rise due to climate change on trails and bike routes.

AWARDS AND HONORS

- $250 virtual conference grant from Graduate Student Association, Department of Civil and Environmental Engineering, University of Pittsburgh.
- $500 **travel grant** from Mascaro Center for Sustainable Innovation, March 2018.
- Full scholarship for **undergraduate education** in the Department of Railway Engineering from Iran University of Science and Technology, 2006 – 2011.

PEER REVIEW SERVICE

Active reviewer for scientific journals.

- ASCE Journal of Urban Planning and Development
- ASCE Journal of Architectural Engineering
- International Journal of Life Cycle Assessment

PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers (ASCE)
- International Society for Industrial Ecology (ISIE)