

## Fuzhan Nasiri, PhD, PEng

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Associate Professor and Associate Chair  
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## EDUCATION

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<b>PDF Cert.</b>	<i>Chemical &amp; Environmental Engineering, Yale University, USA, 2010</i>
<b>PhD</b>	<i>Environmental Systems Engineering, University of Regina, Canada, 2007</i>
<b>MSc.</b>	<i>Industrial Systems Engineering, Sharif University of Technology, Iran, 2002</i>
<b>BSc.</b>	<i>Industrial Systems Engineering, Sharif University of Technology, Iran, 1998</i>

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## ACADEMIC EXPERIENCE

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<i>Associate Professor</i>	Department of Building, Civil, and Environmental Engineering, Concordia University, Montreal, QC, Canada, 2019-
<i>Assistant Professor</i>	Department of Building, Civil, and Environmental Engineering, Concordia University, Montreal, QC, Canada, 2014-2019
<i>Honorary Lecturer</i>	Bartlett Faculty of the Built Environment, University College London (UCL), UK, 2014-2015
<i>Lecturer (Assistant Professor)</i>	Bartlett Faculty of the Built Environment, University College London (UCL), UK, 2011-2014
<i>Associate Research Scientist</i>	Centre for Green Chemistry & Green Engineering, Yale University, USA, 2010-2011
<i>Postdoctoral Associate</i>	Centre for Green Chemistry & Green Engineering, Yale University, USA, 2009-2010
<i>Postdoctoral Fellow</i>	Groupe d'Études et de Recherche en Analyse des Décisions (GERAD), HEC Montreal, Canada, 2007-2009
<i>Research Assistant</i>	School of Engineering, University of Regina, Canada, 2003-2007
<i>Researcher</i>	<i>Systems Automation and Productivity Research Centre, Sharif University of Technology, Iran, 2001-2002</i>

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## AWARDS

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Dean's Research Excellence Award, Gina Cody School of Engineering and Computer Science, Concordia University, 2023  
Dean's Teaching Excellence Award, Gina Cody School of Engineering and Computer Science, Concordia University, 2018  
Provost's Teaching Award (Outstanding Contribution in Teaching & Learning), University College London (UCL), 2013

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## FUNDING

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Voltage Seed Grant. Poly-Generation Innovation Park: A Sustainable Energy Frontier, Canada First Research Excellence Fund (CFREF) on Electrifying Society, 2024-2025 (\$320,000), Role: PI

Voltage Seed Grant. Integrated Concentrating Solar Photovoltaic/Thermal (CPV/T) and Pumped Thermal Energy Storage (PTES) Systems in Canada's Cold Climate, Canada First Research Excellence Fund (CFREF) on Electrifying Society, 2024-2025 (\$200,000), Role: Co-I

Voltage Seed Grant. Concordia Living Lab of Loyola Campus: Decarbonisation and operational optimisation of a community energy system, Canada First Research Excellence Fund (CFREF) on Electrifying Society, 2024-2025 (\$200,000), Role: Collaborator

Gina Cody Research & Innovation Fellowship, Mapping of the characteristics of HVAC duct insulation used in building sector in Canada using a life cycle costing/assessment (LCCA), 2024-2025 (\$40,000), Role: PI

Faculty Research Support (FRS) Fund, Concordia University, 2023-2024 (\$73,000), Role: PI

MITACS Accelerate Partnership Grant: Artificial Intelligence for Smart Adaptation of Indoor Spaces & Facilities to Airborne Transmission Mitigation Pathways, Mathematics of Information Technology and Complex Systems (MITACS) with Humanitas Inc., 2023-2024 (\$210,000), Role: PI

Faculty Research Support (FRS) Fund, Concordia University, 2022-2023 (\$80,000), Role: PI

NSERC Discovery Grant: Integrating Reliability Engineering and Resilience Assessment for Hybrid Renewable Energy Facilities Management, Natural Sciences and Engineering Research Council (NSERC), 2022-2027 (\$155,000), Role: PI

NSERC Alliance Partnership Grant: Development of an AI-based Regulatory Control for Energy Management Information Systems, Natural Sciences and Engineering Research Council (NSERC) with EnerZam Inc., 2022-2024 (\$95,000), Role: PI

FRQNT Partnership Research Project: Application of water-energy efficiency in the mining industry (Application de l'efficacité eau-énergie dans l'industrie minière), Fonds de recherche du Québec - Nature et technologie (FRQNT), 2022-2025 (\$300,000), Role: Co-I

Concordia Team Grant: Mycelium-Composite Materials: Performance and Socio-Environmental Potential Impacts in the Construction Sector for Aesthetics and a Sustainable Future, 2022-2023 (\$50,000), Role: Co-I

Horizon PDF Program: Development of a Data-driven Model Predictive Control (MPC) for Smart Waste-to-Energy Value Chain Management in Northern Communities of Quebec, 2021-2023 (\$80,000), Role: PI

Faculty Research Support (FRS) Fund, Concordia University, 2021-2022 (\$74,000), Role: PI

MITACS Accelerate Partnership Grant: Real-time personnel counting and personal protective equipment (PPE) recognition in construction sites, Mathematics of Information Technology and Complex Systems (MITACS) with Pomerleau Inc., 2021-2022 (\$55,000), Role: PI

NSERC Alliance Partnership Grant: Integrating Predictive Maintenance Analytics into a Cloud-based CMMS for Smart Work Order Management and Resource Allocation, Natural Sciences and Engineering Research Council (NSERC) with EnerZam Inc., 2020-2025 (\$223,000), Role: PI

Faculty Research Support (FRS) Fund, Concordia University, 2020-2021 (\$36,000), Role: PI

MITACS Accelerate Partnership Grant: Development of a smart AI-based monitoring tool for building energy management automation, Mathematics of Information Technology and Complex Systems (MITACS) with EnerZam Inc., 2020-2023 (\$160,000), Role: PI

Faculty Research Support (FRS) Fund, Concordia University, 2019-2020 (\$48,000), Role: PI

NSERC Engage Partnership Grant: Integrated Techno-economic Assessment of Community-scale Geothermal Facilities for Nunavik (with BBA Inc.), 2018-2019 (\$25,000), Role: PI

Faculty Research Support (FRS) Fund, Concordia University, 2018-2019 (\$70,000), Role: PI

NSERC Engage Partnership Grant: Reliability Modeling and Analysis of Biomass Boilers (with BMA Ltd.), 2017-2018 (\$25,000), Role: PI

Faculty Research Support (FRS) Fund, Concordia University, 2017-2018 (\$78,000), Role: PI

NSERC Discovery Grant (Building-Integrated Renewable Heat), 2016-2022 (\$144,000), Role: PI

Faculty Research Support (FRS) Fund, Concordia University, 2016-2017 (\$35,000), Role: PI

ENCS Capital Research Innovation Grant: Waste To Energy Conversion, 2015 (\$200,000), Role: Co-I (with Z. Chen as PI)

VP Strategic Grant, Concordia University (Sustainable Communities), 2015-2018 (\$60,000), Role: PI

VP Strategic Equipment Fund, Concordia University, 2015-2017 (\$17,500), Role: PI

ENCS Start-up Grant, Faculty of Engineering and Computer Science, Concordia University, 2015-2017 (\$50,000), Role: PI

UCL Grand Challenges Grant (Sustainable Cities): Assessment and Management of Infrastructure Resilience (with Andy Chow and Afzal Siddiqui), EPSRC-UCL, 2013-2014 (£5,000)

FM Sector Skills Assessment, UK Asset Skills Council (With Alexi Marmot), 2013-2014 (£9,000)

EMININN: Environmental Macro Indicators of Innovation (Life Cycle analysis of the Built Environment Technologies), (FP7-European Commission: UCL and 6 other European partners), 2013 (Funding share: (£9,000)

UCL Grand Challenges Grant (Sustainable Cities): Water Reuse Infrastructure Design, Configuration, and Planning (With Sarah Bell), 2012-2013 (£5,000)

ARUP Global Research Challenge Research Grant: Urban Water Reuse Network Modeling and Optimisation, 2011-2012 (£12,500)

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## **SCHOLARSHIP/FELLOWSHIP**

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Postdoctoral Fellowship, Yale University - National Science Foundation (NSF), 2009-2010 (\$45,000/year)

GERAD Postdoctoral Fellowship, Groupe d'Études et de Recherche en Analyse des Décisions (GERAD), 2007-2009 (\$35,000/year)

NSERC Industrial R&D Postdoctoral Fellowship, Natural Sciences and Engineering Research Council of Canada (NSERC), approved for 2007-2010 (\$43,000/year)

NSERC Visiting Postdoctoral Fellowship, Natural Sciences and Engineering Research Council of Canada (NSERC), approved for 2007-2009 (\$40,000/year)

Faculty of Engineering Research Scholarship, School of Engineering, University of Regina, 2004-2007 (\$10,000/year)

Associated Engineering Scholarship, Associated Engineering Ltd., SK, Canada, 2004-2006 (\$2,500/year)

Graduate Scholarship, Faculty of Graduate Studies, University of Regina, 2004-2005 (\$5,000/year)

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## **INSTITUTIONAL SERVICE**

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*Member*, Accreditation Coordination Team, Department of Building, Civil, and Environmental Engineering (BCEE), Concordia University, 2024

*Associate Chair*, Department of Building, Civil, and Environmental Engineering (BCEE), Concordia University, 2023-

*Member*, Sustainability Action Plan Committee, Representative for Gina Cody School of Engineering & Computer Science, Concordia University, 2023-2024

*Member*, Advisory Search Committee for BCEE Department Chair Selection, Gina Cody School of Engineering & Computer Science, Concordia University, 2023.

*Member*, University Senate, Concordia University, 2022-2023.

*Member*, Teaching Excellence Awards Committee, Gina Cody School of Engineering & Computer Science, Concordia University, 2022-2024.

*Member*, Capstone SDG Impact Awards Committee, Gina Cody School of Engineering & Computer Science, Concordia University, 2023-2024.

*Member*, Faculty Personnel & Tenure Committee (FPTC), Gina Cody School of Engineering & Computer Science, Concordia University, 2021-2023

*Member*, Faculty Council, Gina Cody School of Engineering & Computer Science, Concordia University, 2021-2023

*Member*, Departmental Personnel Committee (DPC), Department of Building, Civil, and Environmental Engineering (BCEE), Concordia University, 2021-2023.

*Member*, PhD Thesis Exam Chairing Pool, Gina Cody School of Engineering & Computer Science, Concordia University, 2021-2023.

*Member*, Staff Recognition Committee, Department of Building, Civil, and Environmental Engineering (BCEE), Concordia University, 2022-2023.

*Member*, Election Committee, Department of Building, Civil, and Environmental Engineering (BCEE), Concordia University, 2021-2023

*Member*, Undergraduate Studies & Awards Committee, Department of Building, Civil, and Environmental Engineering (BCEE), Concordia University, 2022-2023.

*Member*, University Senate Committee on Academic Planning & Priorities, Concordia University, 2019-2020

*Member*, Departmental Tenure Committee (DTC), Department of Building, Civil, and Environmental Engineering (BCEE), Concordia University, 2019-

*Member*, Equity, Diversity, and Inclusion (EDI) Task Force, Gina Cody School of Engineering and Computer Science, Concordia University, 2018-2020

*Member*, University Senate Library Committee, Concordia University, 2018-2020

*Chair*, Departmental Teaching Committee, Department of Building, Civil, and Environmental Engineering (BCEE), Concordia University, 2018-2020; 2022-2023

*Member*, Departmental Graduate Curriculum Committee, Department of Building, Civil, and Environmental Engineering (BCEE), Concordia University, 2018-2020

*Capstone Project Supervisor*, CIVI/BLDG 490, BCEE Department, Concordia University, 2017-

*Evaluation Panel Member*, Individualized Programs Research Exposition, Concordia University, March 16, 2017.

*Member*, University NSERC Master's Committee, Concordia University, 2017-2020

*Member*, Faculty Tribunal Committee (Elected), Gina Cody School of Engineering and Computer Science, Concordia University, 2017-2018.

*Coordinator*, UCL Infrastructure Management Research Group, 2012-2014

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## SCIENTIFIC SERVICE

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### Organizations

*President*, Special Interest Group (SIG) in Energy, Environment, and Sustainability (EES), *Canadian Operational Research Society (CORS)*, 2024-2025

*Member*, International Task Force, *Association of Environmental Engineering and Science Professors (AEESP)*, 2023-

*Sub-Task Leader*, Annex 37: Smart Design & Control of Energy Storage Systems, *International Energy Agency (IEA)*, 2020-

### Conferences/Workshops

*Technical Program Committee*, The 2024 Annual Modeling & Simulation Conference (ANNSIM), Washington D.C., May 20-23, 2024.

*Scientific Committee & Special Technical Session Co-Chair*, PEOPLE 2023 Conference: Collaborative Solutions to Environmental Problems under Climate Change, Montreal, Canada, 7-11 August, 2023.

*Keynote Speaker*, International Conference on Civil Engineering Fundamentals and Applications (ICCEFA2021), Nov. 21-23, 2021

*Panel Chair*, First Nations Climate Change Risk Assessment & Asset Management tools, Civil Engineering Triennial (CSCE/ASCE/ICE), May 25-25, 2021

*Session Chair*, Decision Support Systems, The 2019 CSCE/ASCE CRC conference, Laval, QC, Canada, June 12-15, 2019

*Member*, Scientific Committee, The 2019 CSCE/ASCE CRC conference, Laval, QC, Canada, June 12-15, 2019

*Member of Scientific Committee*, International Conference on Sustainable Energy and Environment Sensing (SEES), Cambridge, UK, June 18-19, 2018

*Public Outreach Speaker*, World Water Day Program, Concordia University, March 28, 2018

*Stream Organiser*, The OR 58 Conference (Infrastructure stream), The Operational Research Society, Portsmouth, UK, 6-8 September 2016.

*Session Chair and Organizer (Energy Systems)*, The CORS/INFORMS joint conference, June 14-17, 2015, Montreal, QC, Canada.

*Member of Scientific Committee*, The International Conference on Marine and Freshwater Environments (iMFE), St John's, NL, Aug. 6-8, 2014

*Stream Organiser*, The OR 56 Conference (Infrastructure stream), The Operational Research Society, 9-11 September 2014.

*Scientific Executive Committee*, The 2014 Behavior and Energy Efficiency (BEHAVE) Conference, University of Oxford, UK.

*Stream Organiser*, The Young OR Conference (Infrastructure stream), The Operational Research Society, 9-11 April 2013.

*Organiser and host*, UCL FM-Exchange Seminars (Infrastructure Series), 2011-2014

*Session Chair*, Workshop on Game Theory in Energy, Resources, and the Environment, Montreal, Oct. 25-26, 2007

#### Scientific/Research Journals

*Editorial Board Member*, Nature Scientific Reports – Environmental Engineering Section (Nature-Springer), 2022-

*Editorial Board Member*, Energy Conversion and Economics (Wiley), 2021-

*Editorial Board Member*, Journal of Healthcare Analytics (Elsevier), 2021-

*Editorial Board Member*, Journal of Sustainable Cities & Society (Elsevier), 2021-

*Associate Editor*, International Journal of Civil Infrastructure, 2021-

*Associate Editor*, Journal of Environmental Systems Research (Springer), 2020-

*Editorial Board Member*, Journal of Pipeline Science & Engineering (Elsevier), 2020-

*Editorial Board Member*, Journal of Energy & Built Environment (Elsevier), 2019-

*Editorial Board Member*, Journal of Environmental Systems Research (Springer), 2012-

*Co-Guest Editor*, Energies Journal, Special Issue on Applications of Artificial Intelligence (AI) in Energy Storage Systems Design, Operation and Control, 2024

*Co-Guest Editor*, Nature Scientific Reports, Special Collection on Quality and Reliability Engineering, 2023 -

*Co-Guest Editor*, Journal of Environmental Systems Research (Springer), Special Issue on Infrastructure Systems and the Environment: Sustainability, Circularity, and Resilience, 2023

*Managing Guest Editor*, Journal of Sustainable Cities and Society (Elsevier), Special Issue on Smart Energy Storage Systems, 2022.

*Guest Editor*, Journal of Pipeline Science and Engineering, Special Issue on AI applications in pipeline reliability engineering and maintenance, 2022

*Guest Editor*, Energies (MDPI), Special Issue on Building, District, and Community Energy Systems Optimization, 2021.

*Managing Guest Editor*, Journal of Sustainable Cities and Society (Elsevier), Special Issue on Engineering solutions for climate change and its physical and sociological impacts, January 2017.

*Guest Editor*, Journal of Facilities Management (Emerald), Special issue on Sustainable Infrastructure Management (Volume 12, Issue 3, 2014)

*Assistant to Editor-in-Chief*, Journal of Environmental Informatics, 2003-2004

*Reviewer* (2003-present):

Reliability Engineering & System Safety (Elsevier); Sustainable Cities and Society (Elsevier); Energy (Elsevier); Renewable Energy Journal (Elsevier); Energy and Buildings (Elsevier); Energy Policy (Elsevier); Utilities Policy (Elsevier); Energy Sources Journal, Part-A (Taylor & Francis); Advances in Building Energy Research (Taylor & Francis); Journal of Facilities Management (Emerald); Performance of Constructed Facilities (ASCE); Process Safety & Environmental Protection (Elsevier); International Journal of Construction Management (Taylor & Francis); International Journal of Sustainable Transportation (Taylor & Francis); Journal of Cleaner Production (Elsevier); Clean Technologies (MDPI); Environmental Engineering (ASCE); Environmental Engineering & Science (ICE); Environmental Management (Elsevier); Environmental Modeling & Assessment (Springer); International Journal of Disaster Risk Reduction (Elsevier); Environmental Modeling & Software (Elsevier); The Science of the Total

Environment (Elsevier); Journal of Environmental Informatics (ISEIS); Stochastic Environmental Research & Risk Assessment (Springer); Journal of Hazardous Materials (Elsevier); Healthcare Analytics (Elsevier); Pipeline Science & Engineering (Elsevier); PLOS ONE (PLOS); European Journal of Operational Research (Elsevier); Production and Operations Management (POMS); Computers & Industrial Engineering (Elsevier); International Journal of Production Economics (Elsevier); Computational Management Science (Springer); Journal of Information Sciences (Elsevier); Economics of Innovation and New Technology (Taylor & Francis); Automatica (Elsevier); Hydrogeology Journal (Springer); International Journal of Water (Inderscience); Advances in Water Resources (Elsevier); Water Quality Research Journal of Canada (IWA); Water Research (Elsevier); Water Resources Management (Springer)

#### Research Funding Agencies

*Grant Proposal Reviewer, Canada Foundation for Innovation (CFI), 2023-*

*Grant Proposal Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC) - Discovery Program, 2023-*

*Review Panel Member, Development Grants Program, US National Science Foundation (NSF), 2022.*

*Grant Proposal Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC) - Alliance Program, 2019-*

*Grant Proposal Reviewer, UK Engineering and Physical Sciences Research Council (EPSRC), 2019-*

*Grant Proposal Reviewer, UK Natural Environment Research Council (NERC), 2017-*

*Proposal Reviewer, MITACS Accelerate Program, 2017-*

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#### **TEACHING**

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CIVI 6721 (Infrastructure Systems Modeling & Simulation), Department of Building, Civil, and Environmental Engineering, Concordia University, 2017 -

BLDG 6631/481 (Fundamentals of Facilities Management), Department of Building, Civil, and Environmental Engineering, Concordia University, 2015 -

Guest Lecturer, Green Buildings, CIVI 324 – Sustainable Project Management, Department of Civil Engineering, McGill University, Winter 2018.

ENGR 301 (Engineering Management Principles & Economics), Faculty of Engineering and Computer Science, Concordia University, 2014 -

BEVFEG (Physical Asset Management), Bartlett Faculty of the Built Environment, University College London (UCL), 2011-2014

Guest Lecturer, BEVFES (Sustainable Facility Management), Bartlett Faculty of the Built Environment, University College London (UCL), Fall 2011

Guest Lecturer, ENVE-360/F&ES-910 (Green Engineering & Sustainable Design), Yale University, Winter 2010

Lab Instructor, Introduction to Computer Programming, Department of Computer Science, First Nations University of Canada (SIFC), 2004-2006

Teaching Assistant, Introduction to Computer Programming, Department of Computer Science, First Nations University of Canada, 2003

Teaching Assistant, Engineering Economics, Department of Industrial Engineering, Sharif University of Technology, 2001

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#### **CERTIFICATIONS & TRAINING**

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2012	Teaching & Learning in Higher Education	Institute of Education (University of London)
2012	Education on Stage (Theatrical Skills in Teaching)	University College London (UCL)
2009	Fundamentals of Teaching in Engineering	Yale University
2005	Teaching Development	University of Regina
2000	Technology Management	Sharif University of Technology
1998	Quality Assurance Systems	Sharif University of Technology

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#### **MEMBERSHIP**

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- Association of Professional Engineers and Geoscientists (APEGS)
- Institut nordique du Québec (INQ)
- American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)
- Canadian Society for Civil Engineering (CSCE)
- American Society of Civil Engineers (ASCE)
- Association of Environmental Engineering and Science Professors (AEESP)
- Canadian Operational Research Society (CORS)
- Institute for Operations Research and the Management Sciences (INFORMS)

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## PUBLICATIONS

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### Notes:

- The student co-authors are marked with a “\*”
- Impact Factors (IF) of journals are the ones reported on the journal webpages

- **Journal Papers**

- [J81] Rezaei, M., Sameti, M., Nasiri, F. (2024). Design optimization of an integrated tri-generation of heat, electricity, and hydrogen powered by biomass for cold climates, *International Journal of Thermofluids*, accepted-in-press
- [J80] Rahnema, S., Khatibi, M., Maccarini, A., Farouq, M. M., Mirzaei, P. A., Fabrizio, E., Ferrara, M., Bogatu, D., Shinoda, J., Olesen, B.W., Kazanci, O. B., Bazdar, E., Nasiri, F., Zeng, C., Wei, X., Haghghat, F., Afshari, A. (2024). A methodical approach for design of thermal energy storage systems in buildings, *Energy Storage*, accepted-in-press
- [J79] Bordbari\*, M.J.; Nasiri, F. (2024). Networked Microgrids: A Review on Configuration, Operation, and Control Strategies. *Energies*, 17, 715. (IF: 3.2)
- [J78] Bazdar\*, E., Nasiri, F., & Haghghat, F. (2023). Optimal Planning and Configuration of Adiabatic-Compressed Air Energy Storage for Urban Buildings Application: Techno-Economic and Environmental Assessment, *Journal of Energy Storage*, 76, 109720. (IF: 9.4)
- [J77] Shirzadi\*, N., Nasiri, F., Menon, R. P., Monsalvete, P., Kaifel, A., Eicker, U. (2023). Smart Urban Wind Power Forecasting: Integrating Weibull Distribution, Recurrent Neural Networks, and Numerical Weather Prediction, *Energies*, 16(17), 6208. (IF: 3.2)
- [J76] Rezaei\*, M., Sameti, M., and Nasiri, F. (2023). An enviro-economic RAM-based optimization of biomass-driven combined heat and power generation, *Biomass Conversion and Biorefinery*, accepted-in-press. (IF: 4.0)
- [J75] Adib\*, M., Nasiri, F., and Haghghat, F. (2023). Integrating wind energy and compressed air energy storage for remote communities: A bi-level programming approach. *Journal of Energy Storage*, 72, 108496. (IF: 9.4)
- [J74] Adib\*, M., Nasiri, F., and Haghghat, F. (2023). Integrating compressed air energy storage with wind energy system – A review, *e-Prime - Advances in Electrical Engineering, Electronics and Energy*, 5, 100194.
- [J73] Sedighi\*, A. A., Haghghat, F., Nasiri, F., Cao, S., & Ren, C. (2023). Approaches in CFD Modeling of Respiratory Droplet Dispersion—Issues and Challenges. *Sustainable Cities and Society*, 97, 104696. (IF: 11.7)
- [J72] Bazdar\*, E., Nasiri, F., & Haghghat, F. (2023). An improved energy management operation strategy for integrating adiabatic CAES with renewables in decentralized applications. *Energy Conversion and Management*, 286, 117027 (IF: 10.4)
- [J71] Malayeri\*, M., Nasiri, F., Lee, C.S., Haghghat, F. (2023). Optimization of Photocatalytic Oxidation Reactor for Air Purifier Design: Applications of Artificial Neural Networks and Genetic Algorithm, *Chemical Engineering*, 462, 142186. (IF: 15.1)

- [J70] Delnaz\*, A., Nasiri, F., Li, S. (2023). Asset Management Analytics for Urban Water Mains: A Literature Review, *Environmental Systems Research*, 12 (1), 1-17.
- [J69] Esmaeili\*, F., Mafakheri, F., Nasiri, F. (2023). Biomass Supply Chain Resilience: Integrating Demand and Availability Predictions into Routing Decisions Using Machine Learning, *Smart Science*, 11 (2), 293-317 (IF: 2.3)
- [J68] Daneshvar\*, A., Nasiri, F., and Haghghat, F. (2023). Optimal Dispatch of an Energy Hub with Compressed Air Energy Storage: A Safe Reinforcement Learning Approach, *Journal of Energy Storage*, 57, 106147. (IF: 9.4)
- [J67] Asif, Z., Haghghat, F., Nasiri, F., Dong, J., and Chen, Z. (2023). Estimation of Anthropogenic VOCs Emission based on Volatile Chemical Products: A Canadian Perspective, *Environmental Management* (Springer Nature), 71(4), 685-703. (IF: 3.5)
- [J66] AL-Smadi\* H., Al-Sakkaf, A., Zayed, T., Nasiri, F. (2023). An integrated space-based building maintenance management model using multi-objective optimization, *Smart and Sustainable Built Environment*, 12 (2), 277-297. (IF: 3.6)
- [J65] Mohammed\*, A.; Zayed, T.; Nasiri, F.; Bagchi, A. (2022). Asset Management-Based Resilience Index Formulation for Pavements via Principal Components Analysis, *Construction Innovation*, accepted-in-press. (IF: 3.3)
- [J64] Bazdar\*, E., Sameti, M., Nasiri, F., Haghghat, F. (2022). Compressed air energy storage in integrated energy systems: A review, *Renewable and Sustainable Energy Reviews*, 167, 112701. (IF: 15.9)
- [J63] Shirzadi\*, N., Rasoulia, H., Nasiri, F., Eicker, U. (2022). Resilience enhancement of an urban microgrid during off-grid mode operation using critical load indicators, *Energies*, 15 (20), 7669. (IF: 3.2)
- [J62] Rabiee\*, N., Nasiri, F., and Eicker, U. (2022). Multi-Stage Transit-Oriented Development (TOD) Assessment: The Case Study of Montreal Metro Systems. *ASCE Journal of Urban Planning & Development*, 148 (3), 836-869. (IF: 2.5)
- [J61] Heidari, M., Rahdar\*, M. H., Dutta, A., & Nasiri, F. (2022). An energy retrofit roadmap to net-zero energy and carbon footprint for single-family houses in Canada. *Journal of Building Engineering*, 60, 105141. (IF: 6.4)
- [J60] Sadrizadeh, S., Yao, R., Yuan, F., Awbi, H., Bahnfleth, W., Bi, Y., Cao, G., Croitoru, C., Dear, R., Haghghat, F., Kumar, P., Malayeri, M., Nasiri, F., Ruud, M., Sadeghian, P., Wargocki, P., Xiong, J., Yu, W., Li, B. (2022). Indoor air quality and health in schools: A critical review for developing the roadmap for the future school environment. *Journal of Building Engineering*, 57, 104908. (IF: 6.4)
- [J59] Fadaeefath Abadi\*, M., Hosseini Rahdar, M., Nasiri, F., and Haghghat, F. (2022). Fault Identification and Fault Impact Analysis of Vapor Compression Refrigeration Systems In Buildings: A System Reliability Approach, *Energies*, 15(16), 5774. (IF: 3.2)
- [J58] Nasiri, F., Ooka, R., Haghghat, F., Shirzadi, N., Dotoli, M., Carli, R., Scarabaggio, P., Behzadi, A., Rahnama, S., Afshari, A., Kuznik, F., Fabrizio, E., Choudhary, R., and Sadrizadeh, S. (2022). Data Analytics and Information Technologies for Smart Energy Storage Systems: A State-of-the-Art Review, *Sustainable Cities and Society*, 84, 104004. (IF: 11.7)
- [J57] Ahmed\* R., Nasiri, F., and Zayed, T. (2022). Two-Stage Predictive Maintenance Planning for Hospital Buildings: A Multiple-Objective Optimization-based Clustering Approach, *ASCE Journal of Performance of Constructed Facilities*, 36(1), 04021105. (IF: 2.5)
- [J56] Igwe\*, C., Nasiri, F., and Hammad, A. (2022). Construction Workspace Management: Critical Review and Roadmap, *International Journal of Construction Management*, 22 (10), 1960-1973. (IF: 3.9)
- [J55] Hosseini Rahdar\*, M., Nasiri, F., and Lee, B. (2022). Effect of Fuel Composition Uncertainty on Grate Firing Biomass Combustor Performance: A Bayesian Model Averaging Approach, *Biomass Conversion and Biorefinery*, 12, 2781-2797. (IF: 4.0)



- [J54] Shirzadi\*, N., Nasiri, F., El-Bayeh, C., Eicker, U. (2022). Optimal dispatching of renewable energy-based urban microgrids using a deep learning approach for electrical load and wind power forecasting, *International Journal of Energy Research*, 46 (3), 3173-3188. **(IF: 4.6)**
- [J53] Igwe\*, C., Nasiri, F., Hammad, A. (2022). Empirical Study on Non-Physical Waste Factors in the Construction Industry, *Engineering, Construction and Architectural Management*, 29(10), 4088-4106. **(IF: 4.1)**
- [J52] Igwe\*, C., Nasiri, F., and Hammad,A. (2022). Influence of Lean Construction Wastes on the Transformation-Flow-Value Process of Construction, *International Journal of Construction Management*, 22(13), 2598-2604. **(IF: 3.9)**
- [J51] Mohammadi\*, A., Igwe, C., Nasiri, F., and Amador, A.(2022). Applying Lean Construction Principles in Road Maintenance Planning and Scheduling, *International Journal of Construction Management*, 22 (12), 2364-2374. **(IF: 3.9)**
- [J50] Ren, C., Xi, C., Wang, J., Feng, Z., Nasiri, F., Cao, S. J., & Haghghat, F. (2021). Mitigating COVID-19 Infection Disease Transmission in Indoor Environment Using Physical Barriers. *Sustainable Cities and Society*, 74, 103175. **(IF: 11.7)**
- [J49] Rezaee\*, M., Sameti, M., and Nasiri, F. (2021). An enviro-economic optimization of a hybrid energy system from biomass and geothermal resources for low-enthalpy areas, *Energy and Climate Change*, 2, 100040.
- [J48] Ahmed\*, R., Nasiri, F., Zayed, T.(2021). A Neutrosophic-based Machine Learning Approach for Maintenance Prioritization in Healthcare Facilities, *Journal of Building Engineering*, 42, 102480. **(IF: 6.4)**
- [J47] Yousefi\*, Z., Nasiri, F., and Moselhi,O. (2021). Application of Multi-Agent Simulation for Maintenance Work flow Management and Resource Allocation in Hospital Buildings, *ASCE Journal of Architectural Engineering*, 27 (2),04021005. **(IF: 2.0)**
- [J46] Rezaee\*, M., Sameti, M., and Nasiri, F. (2021). "Biomass-fueled Combined Heat and Power: Integration in District Heating and Thermal Energy Storage", *Clean Energy*, 5 (1), 44-56. **(IF: 2.9)**
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- October 31, 2023, Concordia News: [Improved wind speed forecasts can help urban power generation, according to new Concordia research](#)
- April 01, 2022, Concordia 17 Rooms Exercise: [UN Sustainable Development Goals \(SDGs\) No. 7: Affordable & Clean Energy](#)
- March 12, 2022, CBC Montreal: [Geothermal energy keeps grape vines cozy in winter](#)
- November 04, 2021, Portail Constructo (BÂTIMENT 2021): [Des gains d'énergie dans les bâtiments grâce à l'intelligence artificielle](#)
- April 26, 2021, CScience: [Rendre nos bâtiments moins énergivores grâce à l'IA](#)
- April 19, 2021, Le Devoir: [Des bâtiments plus intelligents et plus sains grâce aux algorithmes](#)
- June 03, 2020, Concordia News: [The Sustainability Action Fund recognizes a dozen outstanding and environmentally conscious grad and undergrad projects](#)
- November 26, 2019, Concordia News: [Concordia researcher hopes to use big data to make pipelines safer](#), also featured in *The Suburban* and *Science Daily* (English) and *Energine* (French)
- September 23, 2019, *Les Affaires Magazine* (Montreal): [Améliorer le confort des transports en commun](#)
- June 25, 2019, *Journal Metro* (Montreal): [Pont Samuel-De Champlain: un modèle pour l'avenir, dit un expert](#)
- June 12, 2019, Concordia News: [Concordia partnership explores geothermal possibilities in northern Quebec](#)
- June 12, 2019, Concordia News: [Concordia PhD candidate is developing a way to improve hospital care](#)
- March 19, 2018, CBC News (Montreal): [Measuring comfort on Montreal's Metro](#)
- March 14, 2018, *Journal Metro* (Montreal): [Les voitures de métro de Montréal sont-elles confortables?](#)
- March 08, 2018, Concordia News: [The Concordian who wants to enhance your metro ride](#)

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## SUPERVISORY

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### Concordia University

#### Postdoctoral Fellows

- Dr. Sahar Bakhtar, Department of Building, Civil, and Environmental Engineering, Oct. 2022 – June 2023 (NSERC Alliance PDF)
- Dr. *Mojtaba Malayeri*, Department of Building, Civil, and Environmental Engineering, Oct. 2021 – March 2022 (Horizon PDF program)
- Dr. *Saeed Moradi*, Department of Building, Civil, and Environmental Engineering, March – July, 2021 (MITACS-Pomerleau PDF)

#### PhD students:

- Mahdieh Adib*, Department of Building, Civil, and Environmental Engineering, Sept. 2023 – present (Co-supervised with Fariborz Haghighat), Thesis Subject: TBA
- Omid Mohagheghi*, Department of Building, Civil, and Environmental Engineering, May 2023 – present (Co-supervised with Fereshteh Mafakheri), Thesis Subject: TBA
- Mohammad Javad Bordbari*, Department of Building, Civil, and Environmental Engineering, Jan. 2023 – present, Thesis Subject: Dynamic Networked Micro-grids, Stage: passed PhD comprehensive exam
- Zeinab (Samaneh) Deldoost*, Department of Building, Civil, and Environmental Engineering, Sept. 2022 – present (Co-supervised with Fariborz Haghighat), Thesis Subject: CFD Simulations for Assessment of Airborne Pathogen Dispersion, Stage: passed PhD comprehensive exam
- Ali Asghar Sedighi*, Department of Building, Civil, and Environmental Engineering, Sept. 2022 – present (Co-supervised with Fariborz Haghighat), Thesis Subject: CFD Modeling of Respiratory Droplets Dispersion, Stage: passed PhD comprehensive exam
- Giti Nouri*, Department of Building, Civil, and Environmental Engineering, May 2021 – present (Co-supervised with Catherine Mulligan), Thesis Subject: Applications of Pressure Retarded Osmosis in Mining Industry, Stage: passed PhD comprehensive exam
- Rasoul Rajabi Khamesi*, Department of Building, Civil, and Environmental Engineering, May 2021 - present, Thesis Subject: Ultraviolet Germicidal Irradiation and Fibrous Filters against the propagation of SARS-COV-19 in HVAC systems, Stage: passed PhD comprehensive exam
- Yashar Bezyan*, Department of Building, Civil, and Environmental Engineering, Sept. 2020 - present (Co-supervised with Mazdak Nik-Bakht), Thesis Subject: Fault detection and Diagnosis of Heating, Ventilation and Air Conditioning systems, Stage: passed PhD comprehensive exam
- Elaheh Bazdar*, Department of Building, Civil, and Environmental Engineering, Sept. 2020 - present (Co-supervised with Fariborz Haghighat), Thesis Subject: Optimal thermo-economic design and operation of decentralized compressed air energy storage, Stage: passed PhD proposal exam
- Babak Manouchehri*, Department of Building, Civil, and Environmental Engineering, September 2019 - (Co-supervised with Sang Hyeok Han), Thesis Subject: Performance Assessment and Forecasting in Modular and Off-Site Construction, Stage: passed PhD proposal exam
- Alireza Goudarzi*, Department of Building, Civil, and Environmental Engineering, September 2017- (Co-supervised with Hua Ge), Thesis Subject: Development of Model Predictive Control (MPC) for Building Energy Management, Stage: passed PhD comprehensive exam
- Nasim Rabie*, Department of Building, Civil, and Environmental Engineering, September 2016- (Co-supervised with Ursula Eicker), Thesis Subject: Resilience Assessment of Road Networks Subject to Flooding Hazards, Stage: passed PhD proposal exam
- Mostafa Fadaee*, Department of Building, Civil, and Environmental Engineering, January 2017- (Co-supervised with Fariborz Haghighat), Thesis Subject: Reliability of Energy Storage Facilities for Data Centres in Northern Communities, Stage: passed PhD proposal exam
- Masoud Rezaee*, Department of Building, Civil, and Environmental Engineering, January 2017- , Thesis Subject: Development of an Integrated Multiple Objective Optimization Model for Biomass-fueled CHP Energy Systems, Stage: passed PhD proposal exam
- 10 – *Dr. Navid Shirzadi*, Department of Building, Civil, and Environmental Engineering, January 2020 – March 2023,



- present (Co-supervised with Ursula Eicker), Thesis Subject: Integrated Optimization of Location, Design, and Operation of Renewable Energy Systems for Urban Microgrids, **Stage: graduated**
- 9- *Dr. Reem Ahmed*, Department of Building, Civil, and Environmental Engineering, September 2017- August 2022, Thesis Subject: Development of an Integrated Data-Driven Budget Allocation Approach for Maintenance Management in Healthcare Facilities, **Stage: graduated**
  - 8- *Dr. Ahmed Mohammed*, Department of Building, Civil, and Environmental Engineering, 2015-2022 (Co-supervised with Ashutosh Bagchi), Thesis Subject: Resilience-Based Asset Management Framework for Pavement Maintenance and Rehabilitation, **Stage: graduated**
  - 7- *Dr. Azadeh (Zahra) Yousefli*, Department of Building, Civil, and Environmental Engineering, Jan 2015-February 2021 (Co-supervised with Osama Moselhi), Thesis Subject: Automated Resource Allocation for Maintenance Management in Hospitals, **Stage: graduated**
  - 6- *Dr. Igwe Charles Nnaemeka*, Department of Building, Civil, and Environmental Engineering, May 2016-February 2021 (Co-supervised with Amin Hammad), Thesis Subject: Integrating last planner with 4D model for equipment workspace planning in urban highway reconstruction projects, **Stage: graduated**
  - 5- *Dr. Mohammad Hosseini*, Department of Building, Civil, and Environmental Engineering, May 2016 – Sep 2020 (Co-supervised with Bruno Lee), Thesis Subject: A Bayesian Approach to Assessment of Fuel Composition Variability Effects on Grate-bed Biomass Combustion, **Stage: graduated**
  - 4- *Dr. Kimiya Zakikhani*, Department of Building, Civil, and Environmental Engineering, Sept 2015-July 2020, Thesis Subject: Failure Prediction and Maintenance Planning for Oil & Gas Pipelines, **Stage: graduated**
  - 3- *Dr. Saeed Moradi*, Department of Building, Civil, and Environmental Engineering, May 2018-July 2020, Thesis Subject: Defect Detection in Sewer Inspection Videos Using Support Vector Machine and Deep Neural Networks, **Stage: graduated**
  - 2- *Dr. Farhad Amiri Fard*, Department of Building, Civil, and Environmental Engineering, May 2015-May 2020, Thesis Subject: Assessment and Optimization of Energy Efficiency Gains through Building Refurbishments, **Stage: graduated**
  - 1- *Dr. Alireza Mohammadi*, Department of Building, Civil, and Environmental Engineering, May 2016-July 2019 (Co-supervised with Luis Amador), Thesis Subject: Asset Evaluation and Optimization for Urban Subway Systems, **Stage: graduated**

#### MSc students:

- Golnaz Vakili*, Department of Building, Civil, and Environmental Engineering, Sept. 2023 –, Thesis Subject: TBA
- Paniz Saebi*, Department of Building, Civil, and Environmental Engineering, Sept. 2023 –, Thesis Subject: TBA
- Emmanuel Davies*, Department of Building, Civil, and Environmental Engineering, Sept. 2023 –, Thesis Subject: TBA
- Kimia Khalili*, Department of Building, Civil, and Environmental Engineering, May. 2023 – (Co-supervised with Po-Han Chen), Thesis Subject: TBA
- Arash Kamaliha*, Department of Building, Civil, and Environmental Engineering, Sept. 2021 –, Thesis Subject: TBA
- 11- *Atefeh Delnaz*, Department of Building, Civil, and Environmental Engineering, Jan. 2021 – June 2023 (Co-supervised with Samuel Li), Thesis Subject: An Integrated Data-Driven Failure Prediction and Risk Management Approach for Water Mains, **Stage: graduated**
  - 10- *Mahdieh Adib*, Department of Building, Civil, and Environmental Engineering, Jan. 2021 – May 2023 (Co-supervised with Fariborz Haghghat), Thesis Subject: Optimal Integration of Compressed Air Energy Storage Systems for Off-grid Communities, **Stage: graduated**
  - 9- *Alireza Daneshvar*, Department of Building, Civil, and Environmental Engineering, May 2021 – March 2023 (Co-supervised with Fariborz Haghghat), Thesis Subject: A Novel Safe Deep Reinforcement Learning Approach for Optimal Dispatch of Energy Hubs with Compressed Air Energy Storage, **Stage: graduated**
  - 8- *Foad Esmaili*, Department of Building, Civil, and Environmental Engineering, September 2019 – Aug. 2022 (Co-supervised with Fereshteh Mafakheri), Thesis Subject: Biomass Supply Chain Resilience: Integrating Demand and Availability Predictions into Routing Decisions Using Machine Learning, **Stage: graduated**
  - 7- *Hamza Rasaei*, Department of Electrical and Computer Engineering, Jan. 2020 – Dec. 2021 (Co-supervised with Hassan Rivaz), Thesis Subject: Explainable AI for Image Processing, **Stage: graduated**
  - 6- *Xiuting Wu*, Department of Building, Civil, and Environmental Engineering, Jan. 2021 – Dec. 2021 (Co-supervised with Biao Li), Thesis Subject: "Life cycle assessment of solar district heating with borehole thermal energy storage

- in Nunavik, **Stage: graduated**
- 5- *Sudipta Adhikary*, Department of Building, Civil, and Environmental Engineering, September 2017- August 2020 (Co-supervised with Ashutosh Bagchi), Thesis Subject: Resilience Assessment of Water Supply Networks Subject to Seismic Hazards, **Stage: graduated**
  - 4- *Huthaifa Smadi*, May 2018-March 2019, Thesis Subject: Space-based multi-objective condition assessment and maintenance planning for building components, **Stage: graduated**
  - 3- *Sahar Esmaeelzadeh*, Department of Building, Civil, and Environmental Engineering, September 2016-July 2018 (Co-supervised with Fereshteh Mafakheri), Thesis Subject: Agent-based Modelling and Simulation for Multi-Source Biomass Supply chain Management, **Stage: graduated**
  - 2- *Ali Jafarpour*, Department of Building, Civil, and Environmental Engineering, May 2015 - May 2017, Thesis Subject: Thermal performance, Costing, and Environmental Impacts of Insulated Walls, **Stage: graduated**
  - 1- *Omid Pourhossieni*, Department of Building, Civil, and Environmental Engineering, May 2015 - September 2016, Thesis Subject: Availability-based Maintenance Scheduling in Domestic Hot Water Systems, **Stage: graduated**

MEng students:

Sandeep Singh, 2022  
 Foad Bahmani, 2022  
 Zahra Tayebi, 2020  
 Maryam (Parastoo) Latifi, 2020  
 Mahdis Shabestari, 2019  
 Amir Azodighajar, 2019  
 Shimaa Nabil, 2019  
 Tannaz Saeedi, 2018  
 Mohammad Amirpour, 2018  
 Muhammad Umer, 2018  
 Milad Rezaee, 2017  
 Safa Mokahhal, 2017  
 Saeed Kashefi, 2017  
 Faezeh Parsa, 2017  
 Khadar Ali Mohammed, 2017  
 Hussein El Sabeh, 2017  
 Mandana Rezaee, 2017  
 Armita Jafari, 2017  
 Bashar Alfalah, 2017  
 Mina Naghavi, 2016  
 Mohammed Abdul Latif, 2016  
 Raja Muhammad Awais, 2016  
 Mona Darki, 2016  
 Kareem Mohammed, 2016  
 Kinan Norgo, 2016  
 Ali Zahedi, 2016  
 Behshid Mirjaberi, 2016  
 Yvonne Ocheoha, 2016  
 Maisha Abdul, 2016  
 Arash Jamali, 2016  
 Usman Mughees, 2015  
 Sabeeh Zulfighar, 2015  
 Ehsan Mousavian, 2015  
 Fatemeh Ahani, 2015  
 Medhat Mourad, 2015  
 Mohammad Ali Aune, 2015  
 Hasseeb Hassan, 2015

## University College London

### PhD students:

*Jin Si*, Bartlett Faculty of the Built Environment, University College London, Sept. 2012-Aug. 2014 (1<sup>st</sup> Supervisor);  
Sept. 2014-Jan. 2017 (Co-Supervisor) – Stage: graduated

*Jamie Bull*, Bartlett Faculty of the Built Environment, University College London, Sept. 2011- Aug. 2014 (Co-Supervisor) – Stage: graduated

### MSc students:

*CICEK, Cihan*, Bartlett Faculty of the Built Environment, University College London, UK, 2013-2015, (Stage: graduated).

*BELGRAVE, Andre*, Bartlett Faculty of the Built Environment, University College London, UK, 2013-2015, (Stage: graduated).

*ARIBIMEARI, Lolo*, Bartlett Faculty of the Built Environment, University College London, UK, 2013-2015, (Stage: graduated).

*JONKER, Jan*, Bartlett Faculty of the Built Environment, University College London, UK, 2013-2015, (Stage: graduated).

*Kapustsina, Marharyta*, Bartlett Faculty of the Built Environment, University College London, UK, 2013-2015, (Stage: graduated).

*MAGALHAES, Rui*, Bartlett Faculty of the Built Environment, University College London, UK, 2012-2014, (Stage: graduated).

*ZHANG, Jingyan*, Bartlett Faculty of the Built Environment, University College London, UK, 2012-2014, (Stage: graduated).

*ALAM, Irfan*, Bartlett Faculty of the Built Environment, University College London, UK, 2011-2013, (Stage: graduated).

*ETCIOGLU, Gulsen*, Bartlett Faculty of the Built Environment, University College London, UK, 2011-2013, (Stage: graduated).

*AKINYEMI, Yetunde*, Bartlett Faculty of the Built Environment, University College London, UK, 2011-2013, (Stage: graduated).

*SEDDON, Bob*, Bartlett Faculty of the Built Environment, University College London, UK, 2011-2013, (Stage: graduated), - **Best Thesis Award** -

### Research assistants:

*Nikolas Anezakis*, Bartlett Faculty of the Built Environment, University College London (UCL), 2014

*Jonathan Wilcox*, Bartlett Faculty of the Built Environment, University College London (UCL), 2012-2013

## Yale University

### Research assistants:

*Troy Savage*, Centre for Green Chemistry and Green Engineering, Yale University, New Haven, CT, 2009-2011

*Ranran Wang*, Centre for Green Chemistry and Green Engineering, Yale University, New Haven, CT, 2009-2011

*Nico Barawid*, Centre for Green Chemistry and Green Engineering, Yale University, New Haven, CT, 2009-2011

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## **GRADUATE EXAMINATION ACTIVITIES**

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As of January 2024, I have served in **208** graduate examinations as follows:

<b>Exam</b>	<b>MASc</b>	<b>PhD</b>
Comprehensive Exam	-	68
Proposal Exam	-	37
Thesis Defense Exam	53	46
Thesis Defense	-	4

Exam (External to University)		
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**PROFESSIONAL EXPERIENCE**

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UCL Consultant, Infrastructure Systems Group (Decentralized Urban Water Reuse), ARUP (in collaboration with UCL Consultancy), London, UK, 2012

Municipal Systems Analyst, Urban Management Development Deputyship, Municipality of Tehran, Iran, 2002 – 2003

Researcher, Systems Automation and Productivity Research Centre, Sharif University of Technology, Iran, 2001-2002

Project Planning & Control Engineer, Industrial Engineering & Project Planning Department, SULIRAN Co. (design and manufacturing of modular steel structures and buildings), Tehran, Iran, 1999 – 2000

Quality Assurance Intern, PARSKHODRO Co. (car manufacturer), Tehran, Iran, 1997 – 1998