NARJES ABBASABADI, Ph.D.

Assistant Professor of Architecture
Director, Sustainable Intelligence Lab (SILab)

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EDUCATION

2019	PH.D. in Architecture, Technologies of the Built Environment (Architectural and Building Sciences/Technology) Illinois Institute of Technology (IIT) - Dissertation: *An Integrated Data-driven Framework for Urban Energy Use Modeling (UEUM)* - Honors: The 2020 ARCC Dissertation Award Honorable Mention, ARCC, 2020; The 2019 Best PhD Dissertation Award, IIT, 2019; Merit Scholarship, Teaching & Research Assistantship, IIT, 2014 – 2018.
2012	Master of Architecture Tehran Azad University
2008	Bachelor of Architecture Tehran Azad University

ACADEMIC APPOINTMENTS

2022-present	Assistant Professor of Architecture College of Built Environments University of Washington (UW), Seattle, WA
2020-2022	Assistant Professor of Architecture College of Architecture, Planning and Public Affairs University of Texas at Arlington (UTA), Arlington, TX
2019-2020	Adjunct Professor College of Architecture Illinois Institute of Technology (IIT), Chicago, IL
2014-2018	Teaching/Research Assistant College of Architecture Illinois Institute of Technology (IIT), Chicago, IL

PROFESSIONAL PRACTICE

2017-2018	Architect Adrian Smith+Gordon Gill Architecture (AS+GG)
2013-present	Founding Partner; Board Member ICAAUD Architects
2013-2015	Founding Partner & Architect ICAAUD Architects
2006-2013	Architect & Director AOA Consulting Architects & Engineers

SELECTED AWARDS & HONORS

2020	Haskell Award for Student Journals. AIA New York, Center for Architecture
2020	ARCC Dissertation Award Honorable Mention. Architectural Research Center Consortium (ARCC)
2019	Best PhD Dissertation Award. Illinois Institute of Technology, College of Architecture
2019	Best Paper Award Candidate, (short listed out of 87 accepted paper). Architectural Research Centers Consortium (ARCC)
2019	A select audience for the Art Rosenfeld Symposium on Energy Efficient and Grid Interactive Buildings and so-called "The Next Art Rosenfelds". Lawrence Berkeley National Lab
2019	Completion of the workshop for developing research agendas on "Sustainable Urban Systems: Predictive, Interconnected, Resilient and Evolving". Northwestern University, Argonne National Laboratory, University of Chicago, Illinois Center for Urban Resilience and Urban Sustainability & National Science Foundation.
2018	U.S. Department of Energy (DOE) Race to Zero Design Competition (the Solar Decathlon Competition, Design Challenge), 2nd Place. U.S. Department of Energy (DOE), National Renewable Energy Laboratory (NREL).
2018	SISE Fellow, Summer Institute on Sustainability and Energy. University of Illinois in Chicago (UIC)
2013	1st Place, Design Competition, Rafsanjan Industrial Complex (IRC). Project: Kish Island Hotel, Persian Gulf., Team: ICAAUD Architects & collaborated with Civitel Hotels & Resorts, Athens, Greece.

JOURNAL EDITORIAL

2020-present	Abbasabadi, N. (Review Editor). *Frontiers in Sustainable Cities,* Specialty section: Urban Energy End-Use.
2019-present	Abbasabadi, N. (Editor). *Prometheus Journal*, Issue 03: Buildings, Cities, and Performance., ISSN 2688-0776. IIT Architecture Chicago.

PUBLICATIONS

BOOK & BOOK CHAPTERS

Abbasabadi, N., Ashayeri, M. *Artificial Intelligence in Performance-driven Design: Theories, Methods and Tools*, Wiley, Book manuscript in progress.

Abbasabadi, N., Ashayeri, M. Energy performance of urban spatial patterns: evidence from building energy benchmarking data. Book chapter under review.

Abbasabadi, N., Ashayeri, M. (2017). Towards an adaptive urbanism beyond hard control: The theories of Johnson and Lefebvre. In M. Couceiro da Costa (Ed.), *Architectural Research Addressing Societal Challenges* (1st Edition ed., vol. 1, pp. 257–62). London, UK: CRC Press/Taylor & Francis Group.

PEER-REVIEWED JOURNAL ARTICLES

Ashayeri, M., **Abbasabadi, N**. (2022). A framework for integrated energy and exposure to ambient pollution assessment (iEnEx) toward low-carbon, healthy, and equitable cities. *Sustainable Cities and Society*. 78, 103647.

Ashayeri, M., **Abbasabadi, N**., Heidarinejad, M., Stephens, B. (2021). Predicting intraurban $PM_{2.5}$ concentrations using enhanced machine learning approaches and incorporating human activity patterns. *Environmental Research*. 196, 110423.

Abbasabadi, N., Ashayeri, M., Azari, R., Stephens, B., Heidarinejad, M. (2019). An integrated data-driven framework for urban energy use modeling (UEUM). *Applied Energy, 253*:113550.

Abbasabadi, N., Ashayeri, M. (2019). Urban energy use modeling methods and tools: A review and an outlook. *Building and Environment, 161*:106270.

Abbasabadi, N. (2019). Developing a data-driven framework for multi-scale integrated urban building and transportation energy modeling. *Prometheus: Building, Cities, and Performance,* 03: 36–39. 2688-0776.

Azari, R., **Abbasabadi, N**. (2018). Embodied energy of buildings: A review of data, methods, challenges, and research trends. *Energy and Buildings, 168*, 225-235.

PEER-REVIEWED CONFERENCE PAPERS & PRESENTATIONS

Luitjohan, S., Ashayeri, M., & **Abbasabadi, N**. (2022). An optimization framework and tool for context-sensitive solar-driven design using cellular automata (SDCA). *2022 Annual Modeling and Simulation Conference (ANNSIM)*, 593–604. https://doi.org/10.23919/ANNSIM55834.2022.9859496

Abbasabadi, N. Ashayeri, M., (2022). *Covid-19 Pandemic and Equity within the Built Environment: Exploring Mobility, Energy, and Health Disparities Using Smart Data*. Health in all Design, The Environmental Design Research Association (EDRA). EDRA58 Greenville, SC. June 1-4, 2022. (Digital Media)

Ashayeri, M., **Abbasabadi, N**. (2021). *Energy justice, indoor air quality, and community resiliency against Covid-19 pandemic*. Environments by Design: Health, Wellbeing and Place; AMPS: Architecture, Media, Politics, Society.

Abbasabadi, N., Ashayeri, M. (2021). *Socioeconomic determinants of public health and residential building energy use in Chicago*. 27th World Congress of Architects UIA 2020 Rio.

Abbasabadi, N., Azari, R. (2019). *A framework for urban building energy use modelling* (pp. 386–94). The Future of Praxis: Applied Research as a Bridge Between Theory and Practice, Proceedings of the ARCC Conference, Toronto. (Best Paper Award Candidate).

Abbasabadi, N., (2019). *A data-driven framework for urban building operational energy use modeling.* (pp. 71-77). 2019 Symposium on Simulation for Architecture & Urban Design (SimAUD). http://www.simaud.org/proceedings/

Abbasabadi, N., (2019). An integrated data-driven framework for urban energy use modeling. *Building Performance Analysis Conference,* ASHRAE, Denver, Co.

Abbasabadi N., (2018). A predictive approach for an integrated urban building and transportation energy modeling: An application of artificial intelligence. *Building, Cities, and Performance, IIT 3rd International Graduate Student Symposium*, Chicago, IL.

Abbasabadi N., (2019). An integrated data-driven framework for urban energy use modeling, (poster section) at the Energy-Efficient and Grid-Interactive Buildings, the Rosenfeld Symposium, Lawrence Berkeley National Laboratory, Berkeley, California, IL.

Abbasabadi N., (2019). An integrated framework for urban energy use modeling: Applications of artificial intelligence. presented at the Artificial Intelligence at IllinoisTech, Active Computational Thinking (ACT) Center, Department of Computer Science, Chicago, IL.

Abbasabadi, N., Ashayeri, M. (2012). *Recognition of cultural identity and sustainable urban design: Case study Shah-Cheragh historical zone*. The first International Conference on Cultural Heritage and Identity Formation, Shiraz Azad University.

Abbasabadi, N., Ashayeri, M. (2012). *Sustainability in architecture: The place of technology*. National Conference on Sustainable Development and Urban Construction, Esfahan Daneshpajoohan Institute of Higher Education.

Abbasabadi, N., Ashayeri, M. (2012). *Energy management and environmental design: Towards sustainable architecture*. 2nd National Conference on Environmental Planning and Management (EPM), University of Tehran.

BOOK/DESIGN CODE

Abbasabadi, N., Ashayeri Jahan Kanemloo, M., Shali Amini, V., Mofidi Shemirani, M. (2012). *Design Code No.569: Documentaries & Bases for Design Code of Road Maintenance Station*. Vice Presidency for Strategic Planning and Supervision, Ministry of Road & Urban Development, Iran. http://tec.mporg.ir

Abbasabadi, N., Ashayeri Jahan Kanemloo, M., Shali Amini, V., Mofidi Shemirani, M. (2012). *Design Code No.571/1: A Prototype for Sustainable Road Support Center in Moderate & Humid Climate*. Presidency for Strategic Planning and Supervision, Ministry of Road & Urban Development, Iran. http://tec.mporg.ir

Abbasabadi, N., Ashayeri Jahan Kanemloo, M., Shali Amini, V., Mofidi Shemirani, M. (2012). *Design Code No.571/2: A Prototype for Sustainable Road Support Center in Cold Climate*. Vice Presidency for Strategic Planning and Supervision, Ministry of Road & Urban Development, Iran. http://tec.mporg.ir

Abbasabadi, N., Ashayeri Jahan Khanemloo, M., Mofidi Shemirani, M. (2012). In V. Shali Amini (Ed.), *Design Code No.571/3: A Prototype for Sustainable Road Support Center in Hot and Arid Climate*. Vice Presidency for Strategic Planning and Supervision, Ministry of Road & Urban Development, Iran. http://tec.mporg.ir

Abbasabadi, N., Ashayeri Jahan Khanemloo, M., Shali amini, V., Mofidi Shemirani, M. (2012). *Design Code No.571/4: A Prototype for Sustainable Road Support Center in Hot and Humid Climate*. Vice Presidency for Strategic Planning and Supervision, Ministry of Road & Urban Development, Iran. http://tec.mporg.ir

Abbasabadi, N., Ashayeri Jahan Khanemloo, M., Shali Amini, V., Mofidi Shemirani, M. (2012). *Design Code No.572: Salt & Brine Storage, Fuel Station, and Road Maintenance Facilities*. Vice Presidency for Strategic Planning and Supervision, Ministry of Road & Urban Development, Iran. http://tec.mporg.ir

Abbasabadi, N., Ashayeri Jahan Kanemloo, M., Shali Amini, A., Mofidi Shemirani, M. (2012). *Design Code No.570: Road Maintenance Stations Design Code*. Vice Presidency for Strategic Planning and Supervision, Ministry of Road & Urban Development, Iran. http://tec.mporg.ir

SELECTED RESEARCH GRANTS & FELLOWSHIP

2022	Geisel Grant. "A Community-engaged Approach Critical to Energy Efficiency Systems: Towards Just and Sustainable Built Environments." Abbasabadi, N. (PI), Makhmalbaf, A. & Chiessa, D. (Co-PI). Total requested fund $7,000. Status: Funded. 2022.
To be revised & resubmitted	National science Foundation (NSF), Environmental Sustainability Program. "*Early CAREER Proposal: Integrated Urban Building Energy Modeling and Retrofit (UBEM-R) via Human-centered Optimization and Autonomous Inspection".* Abbasabadi, N. PI. Requested fund $570,966. Status: not awarded; to be revised and resubmitted. 2021.
Revised / to be submitted	National Science Foundation (NSF) Environmental Sustainability Program. *"Collaborative Research: Towards Sustainable Intelligent Cities--A novel framework for urban energy modeling integrating human systems and micro-environments".* Principal Investigator (PI) with Mehdi Ashayeri (Co-PI). Total requested fund $299,000. Funds sought by me $184,060.20. Status: Revised / to be submitted

2019	Lawrence Berkeley National Lab. Conference fellowship, the 2019 Art Rosenfeld Symposium, 2019.
2019	National Science Foundation, Travel Grant, Attending the 2019 NSF-NHER, Wall of Wind Experimental Facility Research Planning Workshop. 2019.
2019	Illinois Institute of Technology. College of Architecture, Travel Grant, 2019.
2018-2019	Illinois Institute of Technology, College of Architecture. Dean Scholarship for organizing the 2018 IIT symposium and editing the IIT Architecture journal. $5,000. 2018.
2018	SISE Fellow, Summer Institute on Sustainability and Energy. University of Illinois in Chicago (UIC).
2014-2019	Illinois Institute of Technology, Merit Scholarship, (Teaching & Research Assistant), $38,000. 2014-2019.
2010-2012	Ministry of Road & Urban Development, General Office of Esfahan Province, Iran. Study of Clean Energy Resources for Institutional Buildings: Application of Solar Energy and Wind-Turbine. Abbasabadi, N. (PI), Ashayeri, M. (Co-PI); other collaborators: Shaliamini, V. Awarded $15,000, 2010-2011.
2009-2012	Ministry of Road & Urban Development, Iran. Developing codes and prototypes for sustainable low energy buildings in Iran. Code: 569, 570, 571/1, 571/2, 571/3, 571/4, 572. Abbasabadi, N. (PI), Ashayeri, M. (Co-PI); other collaborators: Shaliamini, V. & Mofidi, M. Awarded $185,000, 2009-2012.

TEACHING

UW Assistant Professor	ARCH-498: Augmented Intelligence & Performance: Towards Sustainable Cities. Autumn 2022
UTA Assistant Professor	ARCH-4395/5395: Performance-driven Design Intelligence. Spring 2022
	ARCH-5670-001-Adv. Design Studio. Fall 2021
	ARCH-5670-002-Adv. Design Studio. Spring 2021
	ARCH-4395/5395-003: Selected Topics ARCH / Sustainable Intelligent City. Spring 2021
	ARCH-3323/5323-001/900-Construction Materials and Methods. Summer 2020, Fall 2020, Summer 2021
	ARCH-3553-006-Design Studio: Architecture I. Fall 2020
IIT Adjunct Professor	ARCH-202: Design Studio. Spring 2020
	ARCH-113: Design Studio. Fall 2019
	ARCH-114: Design Studio. Spring 2019
IIT Teaching Assistant	ARCH-520: Introduction to Urbanism. Spring 2017
	AURB-201: The Elements of Urbanism. Fall 2016
	AURB-201: The Metropolis. Spring 2016
	ARCH-334: Materials. Fall 2015
	AAH-120: History of World Architecture II. Spring 2015

DISSERTATIONS & THESES ADVISED

Ph.D. Dissertation Committee Member, "Smart Cities and Digital Divide" Planning & Landscape Arch. (2020-2022). Advised: Shadin Nimery

Master's Thesis Committee Member, "Integrating Generative Form-Finding with Context-Sensitive Parametric Optimization of Solar Radiation," Architecture. Southern Illinois University. (2021). Advised: Seth Luitjohan

Master's Thesis Committee Member, "A Multi-Objective Optimization Tool for Designing Kinetic Shading Patterns Based on Integrated Daylight and Lighting Performance," Architecture. Southern Illinois University. (2021-2022). Advised: Samin Kamalisarvestani

Master's Thesis Committee Member, "Modeling Occupant Complaints on Building Comfort Characteristics in the Early COVID-19 Stay-at-Home Using Data from Social Media," Architecture. Southern Illinois University. (2021-present). Advised: Soroush Piri

STUDENT AWARDS

AIA Fort Worth, Perspectivas FW 2022 Exhibitor Award in Spring 2022. Master Student Fausto Sanchez for his Advanced Design Studio Project "Modulo Urbano."

AIA Fort Worth, Perspectivas FW 2022 Honor Award in Spring 2022. Master Student Fausto Sanchez for his Advanced Design Studio Project "Modulo Urbano."

CAPPA Justice, Equity, Diversity, and Inclusion (JEDI) award in Spring 2021. Ph.D. Student Shadin Nimery for Project "What are the socio-economic implications of the digital divide on the notion of smart city in the DFW Metropolitan area?"

SERVICE

University Service UTA

Committee Member, Curriculum Committee. 2020-2022

Committee Member, Academic Grievances. 2020-2022

Committee Member, CAPPA Faculty Grants Review Committee. 2020-2022

University Service IIT

Symposium Organizer, PhD Program in Architecture., College of Architecture, Illinois Institute of Technology. 2018-2019

Editor. *Prometheus Journal*, Issue 03: Buildings, Cities, and Performance., Journal of the PhD program in Architecture. ISSN 2688-0776. IIT Architecture Chicago.

Professional Service

Editor, Journal Editor, Prometheus Journal. Issue 03: Building, Cities, and Performance. College of Architecture, Illinois Institute of Technology. 2018-present

Editorial Review Board Member, Frontiers in Sustainable Cities, Specialty section: Urban Energy End-Use. 2020-present

Reviewer, Journal Article, Nature Publishing Group, Nature Energy. 2020-present

Reviewer, Journal Article, Elsevier Journal of Applied Energy. 2019-present

Reviewer, Journal Article, Elsevier Journal of Building and Environment. 2019-present

Reviewer, Journal Article, Elsevier Journal of Energy and Buildings. 2019-present

Reviewer, Conferences including Building Performance Analysis Conference and SimBuild – Co-organized by The American Society (ASHRAE) and International Building Performance Simulation Association (IBPSA)-USA.

Judge for evaluating the community innovation projects, 2017 Global Leaders Program at Illinois Institute of Technology, Chicago, IL. April 2017

Public and Community Service	Performance; The Chicago Architecture Biennial 2015. Served as a performer in *Superpowers of Ten* at the Chicago Architecture Biennial 2015, Project: Andrés Jaque / Office for Political Innovation.
Symposia Organized	Symposium Organizer, PhD Program in Architecture., College of Architecture, Illinois Institute of Technology, Chicago, IL. (2018).

LICENSURE & CERTIFICATION

2013	Architectural Practice License Tehran Construction Engineering Organization, IRI Ministry of Road & Urban Development
2013	Consulting Services Qualification, Level 3, specialized in residential, commercial, educational, institutional, and industrial buildings General Governor of Tehran, Civil Affairs Department, IRI Ministry of Interior

MEMBERSHIP

Professional Society	American Institute of Architects (AIA), Associate, 2017-present
	American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), Member, 2015-present
	Tehran Construction Engineering Organization (TCEO), Member, 2013
Academic Organizations	Building Technology Educators Society
	Society of Building Science Educators (SBSE), 2018
	International Building Performance Simulation Association (IBPSA-USA), 2018

SKILLS

Software Programs & Tools	Design: Revit, AutoCAD, 3D Max, Sketch up, Rhino, Grasshopper Graphics: Photoshop, Illustrator, InDesign. Simulation & Analysis: ClimateStudio, EnergyPlus, Ladybug, Honeybee, Diva, UMI Statistics & Programming Language: Stata, R, Python, Matlab Spatial Analytics & Visualization: Tableau, QGIS, ArcGIS

MEDIA

2020	2020 Haskell Award for Student Journals. AIA New York, Center for Architecture. https://www.centerforarchitecture.org/news/2020-haskell-award-recognizes-four-student-journals-across-us/
2020	2020 ARCC Dissertation Award Honorable Mention. http://www.arcc-arch.org/2020-arcc-dissertation-award-honorable-mentions/
2020	Dissertation Awards College of Architecture. Illinois Institute of Technology (IIT) https://arch.iit.edu/life/architecture-alumna-receives-honor-for-doctoral-research
2020	The Next Generation of Architecture Academics College of Architecture. Illinois Institute of Technology (IIT) https://arch.iit.edu/life/the-next-generation-of-architecture-academics
2019	A select audience for the Art Rosenfeld Symposium on Energy Efficient and Grid Interactive Buildings and so-called “The Next Art Rosenfelds”. Lawrence Berkeley National Lab https://buildings.lbl.gov/rosenfeld-symposium

2019	ARCC 2019 Best Paper Award, short listed for the 2019 ARCC Best Paper Award. http://www.arcc-arch.org/arcc-2019-awards/
2018	U.S. Department of Energy (DOE) Race to Zero Design Competition. Energy.gov. Office of Energy Efficiency & Renewable Energy. https://www.energy.gov/eere/buildings/2018-results https://www.energy.gov/sites/prod/files/2018/04/f51/IllinoisTech_SMF_PRESGRAND_2018-04-17.pdf
2018	2nd Place. DOE's Race to Zero Design Competition. Illinois Tech. https://iit.edu/news/iittoday/?p=74053
2018	Symposium Organizer. College of Architecture. Illinois Institute of Technology (IIT) https://arch.iit.edu/life/Buildings-Cities-Perf
2018	UIC, SISE, Summer Institute on Sustainability & Energy. https://uicsise.com/sisenews/narjesabbasabadi