Elnaz Ghasemi

📞 (+1) 310-956-7793
🖥 https://elnazqasemi.github.io/
LinkedIn: elnaz-ghasemi
✉ qasemi.ez@gmail.com, ✉ elnazghasemi@psu.edu

Education

2023-   **Ph.D in Architecture**, *Penn State University, US*.

2022-   **M.Sc in Architectural Engineering(CM-Concurrent Master)**, *Penn State University, US*.

2017-19   **Master of Architectural engineering**, *Tarbiat Modares University, Tehran, Iran* (GPA 3.5).

2012-16   **Bachelor of Architecture**, *University of Kurdistan, Sanandaj, Iran*, (GPA 3.4).

Research experience

2023-   **Research Assistant**, *Dr. Rahman Azari, PennState University*, State College.

Conducting a study on **urban carbon emission**, and **energy use** in buildings employing simulation and data-driven methods.
- Investigating bottom-up simulation approaches to analyze both operational and embodied carbon emissions in the building sector.
- Funded by the Department of Energy (DOE).
- Part of the project of Baltimore Social-Environmental Collaborative IFL.

2023   **Research Assistant**, *Dr. Mariantonieta Gutierrez Soto, PennState University*, State College.

Conducted a study on using origami patterns to design **aerodynamic envelopes** in tall buildings.
- Investigated the efficient design of **kinetic origami** facades in tall buildings to reduce wind pressure caused by natural hazards.

2023   **Research Assistant**, *Dr. Rahman Azari, PennState University*, State College.

Conducted a literature review on barriers to **high-performance building** development in the global south, in collaboration with Algonquin College of Applied Arts and Technology in Canada.
- A report on the barriers and transformation towards **carbon neutrality** in the building sector of the Global South.
- Funded by Farzaneh Family Foundation.

2017-19   **MA Thesis**, *Dr. Mohammadjavad Mahdavinejad, Tarbiat Modares University*, Iran.

Conducted research on 2D and 3D fog collecting surfaces for the completion of the MA thesis, titled "Hybrid **Bio-Envelope** of Integrated Building for Water Transportation; Case: Design of Filband Eco-House."
- Conducted a study on structural behaviors and facade systems inspired by Bio-Envelopes.
- Experimented on 3D printed bio-envelopes to study the water transportation system in plants.
- Designed efficient bio-inspired facade systems for structures.

2018   **MA Researcher**, *Institution/Organization Name*, Location, Conducted research on [specific topic or project] for the completion of the MA degree. .
- some text

2015-16   **BA Thesis**, *University of Kurdistan*, Iran.

Conducted research on urban community designs for the completion of the BA thesis, titled "Design site-compatible urban community center."
- Designed with a focus on densely populated urban neighborhoods.

Work Experience

2022   Renovation, Iran
- Designed and implemented the interior of a 90m2 clothing store with an effective floor plan that improved product visibility and ease of navigation, resulting in an increase in sales revenue.
- Incorporated sustainable and eco-friendly materials and practices into the design, reducing the store's carbon footprint and increasing customer loyalty.

2017-21   Facade, and Interior Design, Iran
- Spearheaded a successful facade and interior design project for a 5-story urban residential building, transforming it into a modern and inviting living space.
- Collaborated with a team of architects, contractors, and interior designers to ensure that the design and construction process was executed seamlessly, adhering to strict deadlines and budget constraints.
- Conducted in-depth research and analysis of the local market for available material and technologies and target audience to develop a comprehensive design strategy that aligned with the client's vision.

Technical Skills

Arch   Autocad, Revit, Autodesk 3Dmax, SketchUp, V-ray, Rhino, Grasshopper, Energy Plus, UMI, CItySim, CityBES, Ecotect .

Graph   Adobe Photoshop, Adobe InDesign, Adobe Illustrator.

Prog   Python, Scikit learn, Pandas, Object Detection, Computer Vision.

Teaching Experience

2023   **Teacher Assistant**, *Dr. Sarah Ritter, Penn State University, State College.*
- Engineering Design 100 learning assistant at the School of Engineering Design and Innovation.

Volunteer and Community

2017   Student organizing committee member of the International Conference of Urban Slums; Toward Upgrading and Sustainable Urban Regeneration, University of Kurdistan, Sanandaj, Iran

2017   Member of the TMU Architecture Association

Publications

2024   Ghasemi, E., Azari, R., Zahed, M., 2024. **Carbon Neutrality** in the Building Sector of the Global South- A Review of Barriers and Transformations. Buildings 2024, 14(2), 321.

2020   Qasemi, E., Mahdavinejad, M., Aliabadi, M. and Zarkesh, A., 2020. Leaf Venation Patterns as a Model for **Bioinspired fog harvesting**. Colloids and Surfaces A: Physicochemical and Engineering Aspects, p.125170.

2019   Qasemi, E., 2019, Chapter:"Institute of Plant Protection", Contemporary buildings in Iran Designed by German Architects

2018   Ghasemi and E., Zarkesh, A., 2018. A case study on structural **behavior of structures in outer shell** of tall buildings, International conference on civil engineering, architecture & urban management

Honors and Achievements

2023   Recipient of **James E. Marley graduate fellowship** in engineering, issued by College of Engineering Pennsylvania State University.

2019   Recipient of German Government's **DAAD** Study Trip scholarship on the Topic of: Integrated Approaches to Modern Industrial Heritage Buildings

Training and Certifications

2023   (In person) 5th MECHS workshop, Exploring Multi-hazard and Multi-physics Hybrid Simulation, Granted by Purdue University

2023   (Online) Data analysis, and visualization certificate, DataCamp

2022   (Online) IEEE Smart Cities workshop on "Smart Cities: People-Centric Situation-Aware Approaches", K.N.Toosi University

2022   (Online) IBM Data Science professional certificate, Coursera

2017   (Online) Autodesk Building Performance Analysis certificate, Autodesk

Languages

Fluent English.
Native Persian, Kurdish, Turkish.