Esmaeil Mottaghi

COMPUTATUIONAL DESIGNER

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Portfolio Website

Professional Summary

With over 10 years of experience in computational design, design automation, and digital fabrication, I specialize in developing innovative digital solutions to optimize design workflows. I am proficient in integrating generative design, performance prediction, and analytics interfaces to enhance decision-making processes. Additionally, I am the developer of Parakeet and several Grasshopper plugins, streamlining the design-to-fabrication pipeline.

Experience

FiBREX construction group.co (uae) - Computational Designer   **2022 - present**

- Developed automated workflows for large-scale GFRC panel fabrication using Grasshopper and C#, streamlining detailing processes and enhancing production efficiency.
- Collaborated with multidisciplinary teams to ensure precision in architectural and structural designs.

Perkins&Will / MITACS - Computational Designer   **2023 - 2024**

- Developed tools integrating AI-based performance assessment models with generative design for data-driven decision-making.
- Programmed solutions using Grasshopper, C#, Python, Ladybug, Honeybee.
- Conducted UX research (interviews, surveys, usability testing) to inform design decisions and improve user experience.
- Designed interactive dashboards and visualizations using UX/UI principles for performance prediction.

Paragen - Co-Founder / Grasshopper Developer   **2014 - 2021**

- Developed grasshopper plugins for the fabrication of perforated wall panels and cabinet components.
- Developed a popular grasshoper plugin [Parakeet], focusing on advanced pattern generation.
- Developed sun exposure and radiation analysis tools in Grasshopper using C#.
- Design for fabrication – including prototyping and close interaction with the shop floor and CNC machines.

Abad Tadbir.co - Architectural Designer / Computational Designer   **2019 - 2021**

- 3D modeling from the conceptual phase through to fabrication, assemblies, and installation.

RenaDesign – Computational Designer   **2017 – 2019**

- Developed computational solutions and grasshopper scripts for design-to-fabrication purposes.
- 3D modeling from the conceptual phase through to fabrication, assemblies, and installation.

Education

- Simon Fraser University, MSc in Interactive Arts and Technology (HCI)   2023 - 2024
- University of Tehran, MSc in Architectural Technology (CAD)   2013 - 2016
- Shahid Chamran University of Ahvaz, BArc   2008 – 2013

Skills & abilities

- Design Software: Rhino, Grasshopper, AutoCAD, Karamba, ladybug, honebee.
- Plugin Development & APIs: Grasshopper and Dynamo plugin creation, OpenAI API integration.
- Product Design: Wireframing, prototyping, user-centered design principles.
- Programming: C#, JavaScript, P5.js, Three.js, CSS, HTML.
- UX/UI Design: Figma, Webflow, Agile methodologies, user research, usability testing.

Publication - google scholar