

Arash Ahmadian

Present Address

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Education

- Master of Science, Computational Architecture Design, Pars University of Architecture and Art, 2017-2020
- Bachelor of Science, Architectural Engineering, Ferdowsi University of Mashhad, 2011-2016
- Diploma in Physics and Mathematics Discipline National Organization for Development of Exceptional Talents, Hasheminejad1- High School, Mashhad, Iran, 2007-2011

Research Interests

- Agent Based Modeling, Problem Solving, Algorithm Design, Computational Design, Parametric Design, Sustainable Design

Teaching Experience

- **Teaching Assistant**
 - Teacher Assistant, Architecture Design 5, Prof. Alireza Nazarnia, Spring 2019
 - Teacher Assistant, Architecture Design 2, Prof. Alireza Nazarnia, Fall 2018
 - Teacher Assistant, Architecture Design 5, Prof. Alireza Nazarnia, Spring 2018
- **Software Instructor**
 - Software Instructor, Ferdowsi university of Mashhad teaching multiple courses on 3d visualization, design, and presentation softwares including Rhinoceros, Grasshopper, Photoshop, and Illustrator, Summers of 2013,2014,2015,2016
- **Freelance**
 - Software Tutor, Rhino, Grasshopper, Photoshop, Illustrator, etc. , 2014 - present
 - Private English language instructor, 2010 - present
 - Private Mathematics instructor, 2011 - present

Research Experience

- **Published**
 - The integration of sustainable concepts and renewable energies in university campus master plan, 2015
 - A study on sustainability & renewable energy penetration in universities, 2015
 - Analysing the relationship between university and the city in developing university campus master plans, 2016
- **Ongoing**
 - Developing a method for the optimization of double skin facades' performance in high rise buildings using cfd analysis, 2020 - ongoing
 - High rise building morphological form finding based on double skin facade performance using CFD analysis, 2020 - ongoing
 - Agent based optimization of shelf locations in hypermarkets to minimize the spread of contagious diseases, 2020 - ongoing

Work Experience

- Ferdowsi University of Mashhad Campus Masterplan Office, 2013-2015
- KCW Architects Office, 2015-2017
- Studio IMA, 2018 - 2021
- Center for Urban Studies and Architecture of Iran 2021 - present

Skills

- Data Visualization, Parametric design and modeling, 3d perception, Working in 3d software platforms; design, visualization, modeling, analysis and optimization, and problem solving both theoretically and practically
- Full understanding and complete ability to use the following softwares: Rhinoceros, Grasshopper, Revit Architecture, Photoshop, Illustrator, InDesign, Premiere Pro, After Effects AutoCAD, Lumion 3d, Sketchup.
- Worked a few projects and coded a number of components using Python and C# in Rhino and grasshopper platforms.

Relevant Coursework

- Computational Design 1 - Grasshopper + C# - 3.95/4.00
- Computational Design 2 - Grasshopper + Arduino + Built prototype - 3.70/4.00
- Computational Architecture Design 1 - Grasshopper - 3.80/4.00
- Computational Architecture Design 2 - Grasshopper + CFD - 3.20/4.00
- Computational Architecture Design 3 - Rhino + Grasshopper + Python - 3.80/4.00
- Master's Thesis - 3.65/4.00

Honors and Awards

- Ranked 106/12083, National university entrance exam (Master's field of Computational Architecture Design), 2017
- Ranked 2017/203011, National university entrance exam (Math and physics major), 2011
- Ranked 561/95260, National university entrance exam (English literature major), 2011
- Math games Champion, tournament conducted by Ferdowsi University of Mashhad's Department of Mathematics, 2009
- Reached the semifinal stage of Iran's "National Olympiad in Informatics" (top 500) two times, 2009 and 2010
- Reached the semifinal stage of Iran's "National Olympiad of Mathematics" (top 500) three times, 2008, 2009 and 2010

Projects

- **Sarv office building GFRC paneling and structure design**
-Our team developed a grasshopper definition to create a complex, double-skin dome-like GFRC structure atop a building using just 20 base lines. We then parameterized the structure and architectural design to optimize space usage. As a result, we were able to achieve an optimal outcome. The final step was to output over 600 panels, each around 2 square meters in size, for manufacturing and assembly.
- **Panelizing any given synclastic surface and providing it with a spaceframe structure and outputting a manufacturable model:**
-I developed a grasshopper definition that can transform any simple surface into a glass facade using the Novum Block-Noten spaceframe structure, and provide the necessary data for manufacturing the design. The complexity of this project required the coding of some critical components for grasshopper using C#.
- **Double skin facade optimization and design assistant platform**
-I created a visual platform for architects in Rhino's Grasshopper to optimize their double skin facade designs' performance.
- **Generating a pointillism artwork from a given photo**
-I coded a grasshopper definition that can convert an input photo into a pointillism artwork. A physical model of the artwork can then be created using a CNC or laser cutter machine.
- **Creating a mesh of pipes to provide shading for pedestrians in the open space of a cultural complex**
-We analyzed pedestrian walking patterns in a potential design using agent-based modeling and coded a mesh to become denser and thicker above gathering places and move along pathways with the user. The mesh covers the main building entirely, with the center of the web being the building's focal point.

Language Proficiency

TOEFL iBT (November 2019):
Reading: 28/30 Listening: 29/30 Speaking: 25/30 Writing: 24/30
Total: **106/120**