Shani Sharif

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EDUCATION

Jan 2011-present	***Georgia Institute of Technology****, School of Architecture, Atlanta, GA* *PhD student in Architecture, Design Computation* *Major: Design Computation, Digital Fabrication* *Advisors: Prof. T. Russell Gentry (Architecture, Civil Eng.), Prof. Chuck Eastman (Architecture, Computer Science)* *Minor: Computer Science, Cognitive Science* *Advisor: Prof. Nancy Nersessian (Cognitive Science, School of Interactive Computing)* *Research Topic: Investigating the intermediary role of digital fabrication machines in changing the discourse of design cognition in relation to the action of making*
2008 - 2010	***Massachusetts Institute of Technology****, Department of Architecture, Cambridge, MA* *Master of Science in Architectural Studies (SMArchS), Design and Computation* *Thesis co-advisors: Prof. Terry Knight, Prof. Lawrence Sass*
2004 - 2007	***Shahid Beheshti University****, Department of Architecture and Urbanism, Tehran, Iran* *Master of Architecture (M.Arch)*
1999 - 2004	***University of Tehran****, Department of Fine Arts, Tehran, Iran* *Bachelor of Architecture (BArch)*

RESEARCH INTERESTS

Design computing, digital fabrication, cognitive science and design cognition, Building Information Modeling (BIM)

ACADEMIC AND PROFESSIONAL EXPERIENCE

Jan. 2014 – Present	***Georgia Institute of Technology,*** *Atlanta, GA* ***Building Information Modeling for Masonry (BIM-M),*** *Digital Building Laboratory* *Research Assistant* *Worked with Prof. Russell Gentry (PI)* - *Researched on the development of Building Information Modeling for Masonry* - *Collaborated in the development of a data structure as part of the Masonry Unit Database to capture all the required data for digital representation of masonry units* - *Acquired Entity-Relationship (ER) data model, and MySQL database management system* - *This database is used as part of future BIM software applications and would be used for selection, specification and purchase of masonry units by AEC industries in building projects*
Aug. 2013 – Dec. 2013	***Georgia Institute of Technology,*** *Atlanta, GA* *Instructor* *Course: "Construction Materials, Systems and Fabrication" Fall 2013* - *Taught architecture graduate students fundamentals of digital fabrication techniques and machinery, and construction material properties and processing, in accordance with design requirements* - *Instructed the operation and application of digital fabrication machines, including: CNC router, water jet cutter, plasma cutter, laser cutter, wire cutter* - *Taught the use of high-level CAD/CAM software for development of fabrication models and fabrication adjustments*
Aug. 2012 – Dec. 2013	***Georgia Institute of Technology,*** *Atlanta, GA* ***Semantic Exchange Modules (SEM),*** *Digital Building Laboratory* *Research Assistant* *Worked with Prof. Chuck Eastman (PI)* - *Developed an online platform for specification of Semantic Exchange Modules (SEM) for Building Information Modeling (BIM) applications* - *Acquired Microsoft Visual Studio, C#, .NET framework and MySQL database management system* - *SEM is a new framework for composing model views based on object-oriented, testable and reusable modules of information, used for specifying information exchanges between software applications using Industry Foundation Class (IFC) schema.*

May 2012 – Aug. 2012	***Georgia Institute of Technology,*** *Atlanta, GA* ***Building Information Modeling for Masonry (BIM-M),*** *Digital Building Laboratory* *Research Assistant* *Worked with Prof. Russell Gentry (PI)* - *Gathered data and performed survey analysis for the Building Information Modeling for Masonry Initiative*
Jan. 2011 - Aug. 2011	***Wentworth Institute of Technology,*** *Boston, MA* *Adjunct Professor* ***Spring 2011*** - *Designed, constructed the syllabus for, and taught the special topic course "GeoMatter", focusing on the integrated role of geometry and material properties in the process of design and fabrication* - *Developed the course for both graduate and senior undergraduate level architecture students* - *Constructed the lectures and class projects based on an interactive teaching and learning strategy* ***Summer 2011*** - *Taught the 3rd year undergraduate architecture studio* - *Focused the design studio on an one-to-one teaching and learning strategy* ***Thesis supervision*** - *Secondary thesis advisor for Vannesa Rubino MArch thesis (2011), "The Spatial Possibilities of Linearity"*
2011 Summer	***Graduate Student Teaching Certificate*** *(Certified by the Dean for Graduate Education and the Dean for Undergraduate Education)* *The passed workshops included:* - *Introduction to Research on How People Learn* - *Designing a Course and Constructing a Syllabus* - *Constructing Effective Problem Sets and Exam Questions* - *Planning and Presenting a Lecture* - *Interactive Teaching and Active Learning* - *Teaching in a Multicultural Classroom* - *Developing a Teaching Philosophy Statement*
Oct. 2010 – Aug. 2011	***Massachusetts Institute of Technology,*** *Cambridge, MA* ***Making the Clean Energy City in China, Department of Urban Studies and Planning*** *Research Fellow* *Worked with Prof. Dennis Frenchman and Prof. Christopher Zegras* - *Performed research on the effects of sun and wind, based on urban form, on the energy use of neighborhood-scale urban clusters*
Sep. 2010 – Feb. 2011	***Massachusetts Institute of Technology,*** *Cambridge, MA* ***Mobile Experience Laboratory,*** *Media Lab (http://mobile.mit.edu/)* *Research Assistant* *Worked with Prof. Federico Casalegno* - *Collaborated on the Green Home Alliance project* - *Developed the design and digital fabrication of the zero energy house model*
2009 - 2010	***Massachusetts Institute of Technology,*** *Cambridge, MA* ***ArchNet,*** *the Aga Khan Trust for Culture (https://archnet.org/)* *Research Assistant* - *Performed research and authored descriptive documents on historic sites and monuments for the ArchNet Digital Library* - *Edited and developed Maria-Therese Ullens' historic documentary videos and photos of the Middle East for the ArchNet Visual Collection*
2008 - 2009	***Massachusetts Institute of Technology,*** *Cambridge, MA* ***Digital Design and Fabrication Group,*** *School of Architecture and Planning* *Research Assistant* *Work with Prof. Lawrence Sass* - *Performed research on automated fabrication systems in industry and architecture* - *Designed and 3D modeled a two story wooden structure house with all the assembly parts for a digital fabrication system* - *Designed five models and fabricated mockups with a friction-joint system for the wall structure of a greenhouse*

2006 - 2008	***Design Core [4s] Architects,*** *Tehran, Iran* *Project Architect* *Projects:* - *Kishware Computer Company Headquarter Office, Isfahan, Iran* - *Kishware Computer Company Headquarter Office, Tehran, Iran* - *Damavand Residential Complex, Tehran, Iran*
2005 - 2006	***Atec Consultants,*** *Tehran, Iran* *Project Architect* *Projects:* - *Office and Shopping Center, Mashhad, Iran* - *Sustainable Residential and Office Complex Competition, Yazd, Iran*

HONORS AND AWARDS

2015	***Anne Robinson Clough International Student Fellowship****, Georgia Tech* *Awarded funding for conference participation and presentation: CAADRIA 2015, Korea*
2010	***MIT Council for the Arts Grant Recipient****, MIT* *Awarded funding for an independent project on a bio-inspired interactive origami design, fabrication and installation*
2008	***The Department of Architecture Graduate Fellowship,*** *MIT* *Fellowship for tuition and stipend for the 2008-09 and 2009-10 academic years*
2003	***Ranked 1st in the national university entrance exam for graduate studies****, Iran* *Master of landscape architecture*
2003	***Ranked 3rd in the national university entrance exam for graduate studies****, Iran* *Master of architecture*

PUBLICATIONS

Sharif, Shani; Gentry, Russll (2015). *BIM for Masonry: Development of BIM Plugins for the Masonry Unit Database.* Paper presented at the Real Time - Proceedings of the 33rd Education and Research in Computer Aided Architectural Design in Europe Conference (eCAADe 2015), Vienna, Austria *http://cumincad.scix.net/cgi-bin/works/Show?_id=ecaade2015_261*

Sharif, Shani; Gentry, Russell (2015). *Design Cognition Shift from Craftsman to Digital Maker*. Paper presented at the Emerging Experience in Past, Present and Future of Digital Architecture, Proceedings of the 20th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA 2015), Daegu, Korea. *http://cumincad.scix.net/cgi-bin/works/Show?_id=caadria2015_208*

Sharif, Shani; Gentry, Russell; Eastman, Chuck; Elder, Jeff. (2015). *Masonry Unit Database Development for BIM-Masonry.* Paper presented at 12th North American Masonry Conference, Denver, Colorado.

Witthuhn, Tyler; Sharif, Shani; Gentry, Russell; Elder, Jeff. (2014). *Masonry Product Models for Building Information Modeling.* Paper presented at 9th International Masonry Conference, Guimarães, Portugal.

Sharif, Shani. (2013). *Material Cognition: Designer's Perception Of Material in a Creative Design Process.* Paper presented at the 17th Conference of the Sociedad Iberoamericana de Gráfica Digital Conference (SiGraDi 2013), Valparaiso, Chile. *http://cumincad.scix.net/cgi-bin/works/Show?_id=sigradi2013_429*

Sharif, Shani; Gentry, T Russell, Yen, Jeannette, & Goodman, Joseph N. (2013). *Transformative Solar Panels: A Multidisciplinary Approach.* International Journal of Architectural Computing, 11(2), 227-246. *http://multi-science.atypon.com/doi/abs/10.1260/1478-0771.11.2.227*

Sharif, Shani; Gentry, T Russell, Yen, Jeannette, & Goodman, Joseph N. (2012). *Kinetic Solar Panels: A Transformative and Expandable Geometric System for Photovoltaic Structures. Paper presented at the* 16th Conference of the Sociedad Iberoamericana de Gráfica Digital Conference (SiGraDi 2012)*, Fortaleza, Brasil. http://cumincad.scix.net/cgi-bin/works/Show?sigradi2012_187*

Sharif, Shani; Demaine, Martin. (2011) Interactive Blossoms." In Proceedings of the Fifth International Conference on Tangible, Embedded, and Embodied interaction, TEI'11, Work in Progress Section, Funchal, Portugal. http://www.tei-conf.org/11/TEI-WIP-final-compressed.pdf

Sharif, Shani. (2010). The Confluence of Digital Design/Fabrication and Biological Principles: Systematic knowledge transfer for the development of integrated architectural systems. (Master's), Massachusetts Institute of Technology. http://dspace.mit.edu/handle/1721.1/61560

REVIEWS	
Automation in Construction Journal (2014) – Reviewer	
SIGraDi (The Iberoamerican Society of Digital Graphics) Conference 2014 – Reviewer	
SIGraDi (The Iberoamerican Society of Digital Graphics) Conference 2013 – Reviewer	
SKILLS	
	Computer *Programming and scripting: Java, C#, Python, SQL, ASP.NET, Matlab, Rhino Script, Processing, Arduino, MEL, Visual Studio* *Modeling: Revit, Solidworks, AutoCAD, Rhinoceros, 3D Max, Grasshopper* *Graphic and video editing: Adobe Photoshop, Adobe illustrator, Final Cut Pro, MS Office*
	Digital Fabrication *CNC, water-jet cutter, plasma cutter, laser cutter, 3D printer*
	Language *English (Fluent), Persian (Native)*