

CONTACT INFORMATION

Arash Soleimani, Ph.D., Assoc. AIA

Assistant Professor

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KEY WORDS

Key words defining my interests, experiences, and ambition

Creative Design, Computational Thinking, Human-Computer Interaction, Tangible-Physical Computing, Cyber-Physical Systems, Architectural Robotics, Environmental Systems, Responsive Environments, Usability Methods, Human Factors, and Learning Sciences (CyberLearning)

EDUCATION

2015 **Ph.D., Planning, Design and the Built Environment**

Clemson University, School of Architecture, Clemson SC, USA

Certificate in Digital Ecologies earned in conjunction with the PhD above

Advisors: Keith E. Green, Ian D. Walker, Danielle C. Herro, Christina Gardner-McCune

Dissertation: *CyberPLAYce: A Cyber-Physical-Spatial Learning Environment Promoting Children's Computational Thinking*

Abstract: CyberPLAYce is a novel, interactive-computational construction kit comprised of hand-sized, magnetic modules, and construction panels that receive the modules and serve as physical building blocks for constructing cyber-physical environments imagined by children. CyberPLAYce employs four evaluation frameworks through an iterative design process including, usability studies, participatory design, ethnographic observation, and formative assessment.

2010 **Master of Architecture in Design**

University of Nottingham, Department of Architecture, Nottingham, UK

Advisor: Jonathan Hale

Thesis: *Responsive and Interactive Environments in Museums: Managing Responsiveness & Interactivity within Museums & Exhibitions in a New Fashion*

Abstract: In this thesis, the importance of interactive environments is leveraged by considering both traditional and modern technologies of interaction. The thesis examines the possibilities and challenges faced in the integration of interactive technologies in museums by considering theories and historical precedents underlying interaction design in exhibitions and museums.

2008 **Bachelor of Architectural Engineering**

Art University of Isfahan, School of Architecture, Isfahan, Iran

Advisor: Mohammad Omoumi

Thesis: *The House of Photography: An Architectural Space of Learning, Experiencing and Viewing Photography*

GRANTS & AWARDS

2020-21	Creative Activities & Research Experiences for Teams (CARET)
Aim:	Learning with CyberPLAYce – A Cyber-physical Learning Tool Promoting Computational Thinking for Elementary Students
Role:	Principal Investigator
Award:	\$8,000.00
Sponsor:	Office of Undergrad Research, Kennesaw State University, Georgia, USA
2020	Summer Research Fellows Program
Award:	\$10,000.00
Sponsor:	Office of Research, Kennesaw State University, Georgia, USA
2020	Summer Online Course Design Program (SOCDP)
Award:	\$3,000.00
Sponsor:	Center for Excellence in Teaching and Learning (CETL Institute)
2019-20	Creative Activities & Research Experiences for Teams (CARET)
Aim:	F.A.B.R.I.C.S. (Flexible Architectural Basis Reinforcement in Concrete Structures)
Role:	Co-Principal Investigator
Award:	\$8,000.00
Sponsor:	Office of Undergrad Research, Kennesaw State University, Georgia, USA
2018-19	AIA Innovation Grant
Aim:	Design and develop an architectural intervention in the city of Clarkston, GA, which showcases a fairy tale story of Clarkston Community through a design-build project.
Award:	\$5,000.00
Sponsor:	Architecture Foundation of Georgia, AIA Georgia
Research Team:	Arash Soleimani, Giovanni Loreto, Zamila Karimi
2018	Seed Grant: Faculty Research Award
Aim:	Initiate Design Analytics Lab [DAL]
Role:	Founder and Codirector
Award:	\$30,000.00
Sponsor:	Department of Architecture, Kennesaw State University, Georgia, USA
Mission:	DAL develops, prototypes and evaluates cyber-physical environments cultivating interactions across systems of people, places and things.
2017	Course (Re)Design Award
Award:	\$1,250.00
Sponsor:	Center for Excellence in Teaching and Learning (CETL Institute) Kennesaw State University, Kennesaw GA, USA
2012-15	Clemson University Graduate Assistantship
Award:	\$19,800.00 + Tuition Waiver p.a. Clemson University, Clemson SC, USA
2009-10	University of Nottingham Masters Scholarship
Award:	£5,000.00 p.a. University of Nottingham, Nottingham, UK

PUBLICATIONS
Book

2013	Soleimani, A., " Responsive and Interactive Environments in Museums: Managing Responsiveness and Interactivity within Museums and Exhibitions in a New Fashion ", <i>Lambert Publishing, Deutschland, Germany.</i>
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Papers & Videos

2020	Alani, A., Kleiss, Michael C. & Soleimani, A., " Responsive Origami: A Modular Approach to Fabricate Dynamic Surfaces Reactive to Socio-Environmental Conditions. " <i>Proceedings of the International Conference on Human-Computer Interaction</i> (Copenhagen, July 19-24). Springer Publishing. (in-press)
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- 2019 Soleimani, A., "**Computational Design Thinking and Thinking Design Computing.**" *Proceedings of the Reynolds Symposium: Digital Approaches to Design Education* (Portland, October 18-19). Recipient of the *Society of Building Science Educators (SBSE)* Faculty Scholarship.
- 2019 Soleimani, A., Herro, D. C. & Green, K. E., "**CyberPLAYce – A Tangible Interactive Learning Tool Fostering Children’s Computational Thinking through Storytelling.**" *International Journal of Child-Computer Interaction*, Elsevier, 20C, pp. 9-23. (Impact factor: 2.65)
- 2019 Alani, A. & Soleimani, A., "**reTessellate: Modular Dynamic Surfaces Reactive to Socio-Environmental Conditions.**" *Proceedings of the International Conference on Human-Computer Interaction* (Orlando, July 26-31). LNCS 11587, Springer Publishing, pp. 113-123.
- 2018 Ayers, C., Soleimani, A. & Loreto, G., "**Non-rigid Formwork Systems with Optimized Concrete Mixtures.**", *American Concrete Institute Convention* (Las Vegas, October 14-19). (Archived Poster)
- 2018 Alani, A., Soleimani, A., Murray, E., Bah, A., Leicht, A. & Sajwani, S., "**The Reconfigurable Wall System: Designing a Responsive Structure Reactive to Socio-Environmental Conditions.**" *Proceedings of the International Conference on Human-Computer Interaction* (Las Vegas, July 15-20). LNCS 10922, Springer Publishing, pp. 167-177.
- 2017 Soleimani, A., Alfalih, H., Delgado, M. D., Dowd, M. C., Harkin, M., Ladefoged, C. T., Rateb, C. M. & Samaniego, J. A., "**Programming Skins: Cyber-Physical Façade Systems Reactive to Environmental Conditions.**" *Proceedings of the International Conference on Advanced Building Skins* (Bern, October 2-3). pp. 153-159.
- 2016 Soleimani, A., Green, K. E., Herro, D. C. & Walker, I. D., "**A Tangible, Story-Construction Process Employing Spatial, Computational-Thinking.**" *Proceedings of the ACM Conference on Interaction Design and Children* (Manchester, June 21-24). pp. 157-166.
- 2015 Soleimani, A., Green, K. E., Herro, D. C., Walker, I. D. & Gardner-McCune, C., "**CyberPLAYce, a Cyber-Physical-Spatial Storytelling Tool: Results from an Empirical Study with 8-10-year-old Storytellers.**" *Proceedings of the International Conference on Human-Computer Interaction* (Los Angeles, August 2-7). LNCS 9192, Springer Publishing, pp. 438-446.
- 2015 Soleimani, A., Green, K. E. & Herro, D. C., "**CyberPLAYce, a Cyber-Physical-Spatial Storytelling Tool Enhancing Children’s Spatial Computational-Thinking.**" *Proceedings of the ACM Conference on Interaction Design and Children* (Boston, 21-24). (Doctoral Consortium)
- 2014 Soleimani, A., "**CyberPLAYce - A Play Space of Creative, Intelligent Tools Promoting Personal and Computational Expression for Early Learners.**" *Proceedings of the ACM Conference on Designing Interactive Systems* (Vancouver, June 21-25). pp. 191-194. (Doctoral Consortium)
- 2014 Soleimani, A., Smith, K., Zeng, J., Green, K. E., Herro, D. C., Santiago, J., Sharma, S. Tonapi, M., Vijaykumar, A., Walker, I. D., & Garder-McCune, C., "**Learning with CyberPLAYce; a Cyber-Physical Learning Environment for Elementary Students Promoting Computational Expression.**" *Proceedings of the ACM Conference on Human Factors in Computing Systems* (Toronto, April 26-May1). pp. 165-166. (Archived Video)
- 2013 Schafer, G., Green, K. E., Walker, I. D., Lewis, E., Fullerton, S., Soleimani, A., Norris, M., Fumagali, K., Zhao, J., Allport, R., Zheng, X., Gift, R. & Padmakumr, A., "**Designing the LIT KIT, an Interactive,**

TEACHING

- Environmental, Cyber-Physical Artifact Enhancing Children's Picture-book Reading.** *Proceedings of the ACM Conference on Interaction Design and Children* (New York, June 24–27). pp. 281–284.
- 2010 Soleimani, A., **“Wind Towers: design and development of tall buildings in response to unique climatic, cultural and contextual characteristics in Abu Dhabi.”** *The Council on Tall Buildings and Urban Habitat Website*, Chicago, IL, United States. (Thesis Competition)
- 2016-present **Assistant Professor** (tenure-track) | Coordinator of Environmental Technologies
Kennesaw State University Dept. of Architecture, Marietta GA, USA
ARCH 2003–Architecture Studio III (program: MARTA Train Station)
ARCH 2004–Architecture Studio IV (program: Studio + Gallery)
ARCH 3011–Architecture Studio V (program: Environmental Research Center)
ARCH 5015–Focus Studio (program: Museum of Interactive Technology)
ARCH 2311–Environmental Tech I: Systems Selection, Materials & Methods
ARCH 3314–Environmental Tech III: Lighting, Electrical & Acoustics
 - Environmental Control Systems
 - Design and Performance with Parametric Integration
 - Advanced Luminous, Acoustical, Electrical, Thermal & Structural Analysis
 - Machine Behavior*ARCH 4490–Computational Methods: Generative-Analytical Tools*
- 2015-16 **Visiting Lecturer** | Coordinator of Computational Methods + Practice
UNC-Charlotte School of Architecture, Charlotte NC, USA
ARCH 2101–Comprehensive Studio III (program: Performing Arts Center)
ARCH 4102–Topical Studio (program: Museum of Interactive Technology)
ARCH 4604 | 5604–Computational Methods
 - Generative, Evolutionary, Predictive, Analytical & Physical Scripting
 - GHPython Scripting
 - Nurbs Modeling, Mesh Modeling, Surface Modeling
 - Advanced Digital Fabrication Techniques: CNC milling, 3D printing, Laser cutting
 - Material Programming: Exploring design thinking through fabrication*ARCH 6603–Architectural Representation II*
- 2012-15 **Lecturer** (teaching assistantship)
Clemson University School of Architecture, Clemson SC, USA
ARCH 101–Introduction to Architecture
ARCH 151–Architecture Communication I
ARCH 252–Architecture Communication II (program: Marketplace + Branch Library)
ARCH 401–Architecture Portfolio
ARCH 452–Synthesis Studio (program: Theater Campus)
ARCH 868–Architectural Robotics (co-taught with Keith Green + Ian Walker)
- 2016-present **KSU Department of Architecture** | B.Arch.
 Asbiel Samaniego–Hydro-Gen Cell: A hydroponic, regenerative, modular system for optimized vertical farming
 - Selected thesis for 2020 CriticalMASS Graduate Research Symposium at the UNC-Charlotte School of Architecture.
 Ana Giron–Imaginative Engagement: Consolidating play and learning through the spatial design of classrooms
 Huy Ho–Camps in Crisis: Challenging the architecture for refugees

THESIS SUPERVISION

		Karen Rios–Resurrecting a Fallen Angel: Architecture against pollution <ul style="list-style-type: none"> ▪ Selected thesis for 2019 CriticalMASS Graduate Research Symposium at the UNC-Charlotte School of Architecture.
		Christian Aguilar–Social Inclusion through Art
		Zimbulus Nixon–Compelling Interactions: Architecture that drives communication
		Wenying Wu–Translating Fictions through Shanshui Paintings
		Chelsey Frith–Breaking the Horizon: A new architectural frontier
	2015-16	UNCC School of Architecture Dual M.Arch. / M.S. in Computer Science
		Jingoo Kim–Parametric Design through Tangible Interactive Tools
		Ganquan Weng–Gamification to Raise Awareness of Energy-related Tasks
LECTURES & WORKSHOPS	2019	Perspectives on Global Issues: Global Citizenship in Changing Times EAO'19: <i>the European Academy of Otzenhausen</i> , Germany
	2014	Evaluating Children’s Interactive Products CHI'14: <i>the ACM Conference on Human Factors in Computing Systems</i> Toronto, Ontario, Canada
	2007	Form Study and Construction of Free-style Forms Tehran University School of Architecture, Tehran, Iran
INDUSTRY EXPERIENCE	2010-12	Rushcliffe Solar West Bridgford, Nottingham, UK
	Position:	Researcher
	2010	Rushcliffe Play Forum and Resource Center Keyworth, Nottingham, UK
	Position:	Internship
	2009-11	New Art Exchange (NAE) Nottingham, UK
	Position:	Interior Designer
	2006-09	Shahr-o-Khaneh Consulting Planners, Architects & Engineers Mirza Koochek Khan Blvd., Isfahan, Iran
	Position:	Architectural Designer
MEMBERSHIPS	Since 2017	Member, Council for Quality Growth , Atlanta GA, USA
	Since 2015	Associate Member, American Institute of Architects (AIA)
	Since 2014	Member, Association for Computing and Machinery (ACM-SIGCHI)
CERTIFICATES	2017	Certificate of Online Course Facilitation Kennesaw State University, Marietta GA, USA
	2017	Certificate of “Process Improvement” Kennesaw State University, Marietta GA, USA
	2016	Certificate of “Project Management” Kennesaw State University, Marietta GA, USA
	2015	Certificate of Excellence Certificate of Excellence in <i>GRADS Poster Presentation</i> Clemson University, Clemson SC, USA
	2013-15	The Honor Society of Phi Kappa Phi Clemson University, Clemson SC, USA
SERVICE	2020-21	Diversity Liaison , College of Architecture and Construction Management Diversity Liaison to the Office of Diversity and Inclusion (ODI), Kennesaw State University, Georgia, USA.

- 2019-20 **Conference Organizer & Peer Reviewer**, "DCA 20/20: Perception to Execution", The *Design Communication Association (DCA) Conference*, Department of Architecture, Kennesaw State University, Marietta GA, USA.
- 2019 **Peer Reviewer**, PhD Symposium: Divergence in Architectural Research, the *International Doctorate Symposium*, School of Architecture, Georgia Institute of Technology, Atlanta GA, USA.
- 2018 **Conference Coordinator**, Year of India Conference entitled "Envisioning the Future and Understanding the Realities of India's Urban Ecologies", Department of Architecture, Kennesaw State University, Marietta GA, USA.
- Since 2018 **Committee Member**, Aga Khan Council for the Southeastern United States, organized lectures in the area of "**Diversity and Pluralism in Architecture**" in collaboration with Ismaili Community, Atlanta GA, USA.
- Since 2017 **Peer Reviewer**, Architectural Science Review (ASR), the International Peer-reviewed *Journal of Architectural Science, Technology and the Built Environment*, Taylor and Francis, UK.
- Since 2017 **Committee Member**, Atlanta Advisory Committee, Council for Quality Growth, Atlanta GA, USA.
- 2016-19 **Co-chair**, Lecture, Exhibition and Symposium Committee, Department of Architecture, Kennesaw State University, Marietta GA, USA.
- 2016-18 **Steering Committee Member**, Future City Competition, a cross-curricular educational program that gives middle school students the opportunity to learn engineering design process and build *21st century skills*, Georgia, USA.
- 2016-18 **Associate Member**, Graduate Faculty of the University of North Carolina at Charlotte NC, USA.
- 2016 **Peer Reviewer**, IDC'16 Papers and Notes, the *ACM Conference on Interaction Design and Children*, Manchester, UK.
- 2014 **Peer Reviewer**, DIS'14 Doctoral Consortium, the *ACM Conference on Designing Interactive Systems*, Vancouver BC, Canada.
- 2010-12 **Lead Examination Invigilator**, University of Nottingham, Nottingham, UK.
- 2006 **Research Facilitator**, research-applied project of Article 102 of Act on the third State Development Plan entitled "*Consideration of Emotional Utterance Patterns of Iranian Primary-school Students*", Isfahan, Iran.