

Jinmo Rhee

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Education

- 2019 - Ph.D. Candidate in Computational Design
Carnegie Mellon University School of Architecture, Pittsburgh, PA
- 2019 M.S. in Computational Design
Carnegie Mellon University School of Architecture, Pittsburgh, PA
- 2016 B.Arch. With Honors
Korea National University of Arts, Seoul, Korea

Licenses & Certificates

- 2018 Mathematics for Machine Learning: Linear Algebra, Multivariate Calculus
Certificated by Imperial College London and offered through Coursera
- 2014 - 2016 Royal Institute of British Architects (RIBA) Part II
66 Portland Palace, London W1B 1AD, England
- 2009 - 2011 Royal Institute of British Architects (RIBA) Part I
66 Portland Palace, London W1B 1AD, England

Teaching Experiences

- 2019.09 - Graduate / Studio Instructor
Carnegie Mellon University School of Architecture, Pittsburgh, PA
Generative Systems for Design (68-702)
Scripting and Parametric Design (48-724)
Introduction to Artificial Intelligence in Design Studies (48-770)
Shaping Form at CMU Qatar (62-212)
Descriptive Geometry (62-175)
Fundamentals of Computational Design (62-275)
Architecture Design Studio: Foundation I (48-100)
- 2017 - 2019 Teaching Assistant
Carnegie Mellon University School of Architecture, Pittsburgh, PA
MSCD Pre-Thesis II (48-716)
Digital Skill Workshop 2018 and 2019 (48-689)
Digital Media I and II (48-120, 48-125, 62-122, 62-123)
Generative Modeling (48-783)
- 2013.04 Instructor of Rhinoceros3D and Grasshopper Workshop
Ein Architects & Engineering, 181, Yangjaechun-ro, Gangnam-gu, Seoul

Publications

Peer
Reviewed

- 2023 **Jinmo Rhee** and Ramesh Krishnamurti, “An inductive method for typo-morphological analysis of building forms in urban spaces” in *Environment and Planning B: Urban Analytics and City Science* (in review)
- 2023 **Jinmo Rhee**, Pedro Veloso, and Ramesh Krishnamurti, “Three Decades of Machine Learning with Neural Networks in Computer-aided Architectural Design (1990-2021)” in *Design Science* (in review)
- 2023 Tomas Cabezon Pedroso, **Jinmo Rhee**, Daragh Byrne, “Feature space exploration as an alternative for design space exploration beyond the parametric space” in *28th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA)*, Navrangpura
- 2023 Michael Hasey, **Jinmo Rhee**, Daniel Cardoso Llach, “Form Data as a Resource in Architectural Analysis: An Architectural Distant Reading of Wooden Churches from the Carpathian Mountain Regions of Eastern Europe” in *Digital Creativity* (in press)
- 2023 **Jinmo Rhee** and Pedro Veloso, “A Physics-based Constraint Solver for the Site Layout Optimization of Non-convex Buildings with Multiple Setback Requirements” in 20th International Conference of CAAD FUTURES, Delft (in review)
- 2023 **Jinmo Rhee** and Bradley Williams, “Cost-Effective 3D Urban Massing Reconstruction of Public Aerial LiDAR Scans” in *20th International Conference of CAAD FUTURES*, Delft (in review)
- 2022 **Jinmo Rhee**, Pedro Veloso, and Kim Jeongheon, “Graph-based Representation of Apartment Building Mass for Complex Layout” in *Annual Conference of Architectural Institute of Korea*, Jeju
- 2022 Dana Cupkova, Han Meng, and **Jinmo Rhee**, “Lithopic House: Computational Design Framework for re-Shaping Ecologically Attuned Architectural Systems out of Granular Matter.” in *Conference of Association for Computer Aided Design in Architecture (ACADIA)*, Philadelphia
- 2022 **Jinmo Rhee** and Ramesh Krishnamurti, “Latent Space to Support Virtual 3D Models” in *the 4th Cultural DNA Workshop at KAIST*, Daejeon
- 2022 **Jinmo Rhee**, Pedro Veloso, Ardavan Bidgoli, Manuel Rodríguez, “Bubble2Floor: A pedagogical experience with deep learning for floor plan generation” in *the 27th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA)*, Australia
- 2021 **Jinmo Rhee**, Chapter 5. Urban Form Analysis through Morphometry and Machine Learning, *Artificial Intelligence in Urban Planning and Design*, Elsevier
- 2021 **Jinmo Rhee**, Pedro Veloso, “Type Investigation in the Form of High-rise Building Using Deep Neural Network” in *19th International Conference of CAAD FUTURES*, Los Angeles
- 2021 **Jinmo Rhee**, Pedro Veloso, Ramesh Krishnamurti, “Generative Design of Urban Fabrics Using Deep Learning” in *26th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA)*, Hongkong
- 2021 **Jinmo Rhee**, “Implementing Diffusion-Limited Aggregation Algorithm to Space Planning: A Design Experiment for Planning Underground Plaza Using Multi-agent System” in *Annual Conference of Architectural Institute of Korea*, Yeosoo
- 2020 **Jinmo Rhee**, Pedro Veloso, Ramesh Krishnamurti, “Integrating Building Footprint Prediction and Building Massing” in *25th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA)*, Bangkok

Non-peer
Reviewed

- 2019 **Jinmo Rhee**, Jae-won Chung, "A Study of Automation of Housing Design Method Using Artificial Intelligence" in *Annual Conference of Architectural Institute of Korea*, Daejeon, (Best Paper Awarded)
- 2019 **Jinmo Rhee**, Jae-won Chung, "Applicability of Artificial Intelligence in Apartment Complex Design" in *Annual Conference of Architectural Institute of Korea*, Daejeon
- 2019 **Jinmo Rhee**, Daniel Cardoso Llach, Ramesh Krishnamurti, "Context-rich Urban Analysis Using Machine Learning" in *Architecture in the Age of the 4th Industrial Revolution*, eCAADe + SIGraDi, Porto
- 2019 Pedro Veloso, **Jinmo Rhee**, Ramesh Krishnamurti, "Multi-agent Space Planning A literature review (2008-2017)" in the *18th International Conference of CAAD FUTURES*, Daejeon
- 2016 **Jinmo Rhee**, "A study of Similar Quality of Transition Space between Korean Apartment House and Traditional House" in *Collections of Excellent Graduation Paper*, Architectural Institute of Korea
- 2021 **Jinmo Rhee** and Pedro Veloso, "In Pursuit of Deep Architectural Design" in *Rumoer #76 Generative Design*, Building Technology Study Association
- 2020 **Jinmo Rhee**, Context-rich Urban Analysis Using Machine Learning, Eliva Press
- 2020 **Jinmo Rhee**, Artificial Intelligence for Architecture, Wooribook
- 2020 **Jinmo Rhee**, Architectural Artificial Intelligence (Korean), Bookk
- 2020 **Jinmo Rhee** and Eddy Man Kim, Digital Media Series: Grasshopper, Amazon Kindle Publisher
- 2019 **Jinmo Rhee** and Eddy Man Kim, Digital Media Series: Rhinoceros, Amazon Kindle Publisher
- 2011 Jiho Kim and **Jinmo Rhee**, "Computing Nature" in *Computing Aesthetics* v.18-no.4, Korea Information Processing Society

Exhibitions

- 2023 Gallery Booth, "Building Form Analyzer for Identifying and Generating Vernacular in Montreal Using Deep Learning" in *SIGGRAPH 2023 Art Gallery* (in review)
- 2023 Gallery Booth, "A Walk in a Latent City: Data Excursions across Urban and Latent Spaces" in *SIGGRAPH 2023 Art Gallery* (in review)
- 2021 Video work, "Rethinking Urban Form: Morphological Understanding of City Space through Data", Austria Pavilion, Venice Biennale
- 2019 Invited Artist, "Context-rich Urban Analysis and Generation Using Artificial Intelligence", The 2nd Special Exhibition for Korean Student in America by Korean Institute of Architects, Culture Station Seoul 284, Seoul, Korea
- 2015 "Skydium and Jamsil Sports Complex Renovation Master Plan", Korea National University of Arts, Seoul, Korea
- 2013 Invited Artist, "Aesthetics of the Nature" Munji Culture Center, Seoul
- 2013 Entry Team Artist, "REAL DMZ 2013" Art Seonjae, Seoul

Invited Lectures & Panels

- 2021, 2022 Guest Speaker for Graduate Seminar: Situating Research, “Analysis of Urban Form Using Artificial Intelligence”, School of Architecture, Carnegie Mellon University
- 2021.09 Discussion Panel for Exchange: AI in Design, School of Architecture, Carnegie Mellon University
- 2017.05 Guest Speaker for Intermediate Design Studio, "Digital to Physical", Sookmyung Women's University, Seoul, Korea
- 2017.05 Guest Speaker for Advanced Design Studio, "Digital to Physical", Korea National University, Seoul, Korea

Work Experiences

- 2020 - 2022 Generative Design for Apartment Building Layout Using Artificial Intelligence Technology with DL E&C
Phase 1: Researching the concepts of Apartment Building Layout
Phase 2: Developing the Apartment Building Layout Intelligence
- 2020 - CRAIDL (Creative AI and Design Launchpad) Co-Founders
Carnegie Mellon University
- 2018 - 2020 CoDeLab Manager
Carnegie Mellon University
- 2015 - 2019 Interior and Branding Architect
JinmoRhee, Seoul, Korea
Youlhyeon 300-42, Renovation
Cafe Ch.Gonggahm, Interior Design and Construction
SN Boarding School, Renovation Visualization
Ann' Garden Florist Training Center, Interior Design
ACE Security, Brand design
Pooreun Community House, Design Proposal
- 2017.01 Project Architect
Urban Operation, Seoul, Korea
Art Complex Pyeongchang, Design Competition
- 2013 - 2017 Architectural Assistant, SSWA Architects, Seoul, Korea
Jang's house in Sindang-dong
Community Center Renovation: Gongreung 1, Wolgye 1, Siheung 5
Gasan Cultural Community Center
Folly Park of Geumcheon Park Renovation
Han River Architectural Imagination Exhibition
Hado Elderly Welfare Center, Design Competition (Winning)
House of Yeesang, Cultural Space in Memory of Poet Yeesang
- 2015.07 Project Manager, Architectural Assistant, ArchiWorkshop, Seoul, Korea
International Idea Competition of the Jamsil Sports Complex in Seoul
Eunpyeong Residence for the Disabled
Mapo Social Box Complex
- 2013.09 Architectural Assistant, MLNP Architects, Seoul, Korea
Kazakhstan Astana Tower

Academic Services

- 2023 Master Thesis Committee Member, “Decoding the Black Box: Making Machine Learning More Accessible and Understandable”, Tomas Cabezon Pedroso, Carnegie Mellon University
- 2023 Master Thesis Committee Member, “AutoTWIN: Investigating Automated Digital Twin Construction for Buildings”, Brad Williams, Carnegie Mellon University
- 2022 Master Thesis Committee Member, “The 3D Form Analysis of Regional Architecture Using Deep Learning: A Case Study of Wooden Churches from the Carpathian Mountains”, Michael Hasey, Carnegie Mellon University
- 2022 - Reviewer, Environment and Planning B: Urban Analytics and City Science, Design Society
- 2021 Session Chair in Urban Analytics, 26th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA), Hongkong
- 2019 - Reviewer, The Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) Conference
- 2019 - Reviewer, The Ibero-American Society of Digital Graphics (SIGRADI)

Patents

- 2021 Media Control Device and System
(Provisional Patent, 89932005923)
- 2018 Diagrammatic Image Dataset Generation with Neural Networks
(Provisional Patent, 9470103699300040518560)
- 2018 Custom Generative Systems with Adaptation Mechanisms
(Provisional Patent, 9470103699300040518553)

Honours and Awards

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| Awards | <ul style="list-style-type: none">2021 Grand Prize in Digital Architecture Competition 2021 (DA 2021), Architectural Institute of Korea and Korea Ministry of Land, Infrastructure and Transport2020 Young CAADRIA Award 2020, The Association for Computer-Aided Architectural Design Research in Asia2019 Grand Prize in Digital Architecture & Architecture Startup Competition 2019 (DAAS 2019), Architectural Institute of Korea and Korea Ministry of Land, Infrastructure and Transport2019 Best Paper in Annual Conference of Architectural Institute of Korea, 20192016 Honorable Mentions in Collections of Excellent Graduation Paper, Architectural Institute of Korea2014 Honorable Mentions in Architectural Structure Design Competition, The Korean Structural Engineers Association2010 Honorable Mentions in Jeju Architecture Awards, Jeju City Government |
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	2010	Honorable Mentions in Idea Competition of the Public Facility on Kwanghwamoon Plaza, Seoul Design Foundation
Scholarship	2021 - 2022	Architectural Design Human Resource Development Project, Korea Agency for Infrastructure Technology Advancement
	2018 - 2022	Graduate Student Small Project Help (GuSH) funds, Carnegie Mellon University
	2019	SoA + GSA International Conference Travel Grants, Carnegie Mellon University
	2017 - 2019	Merit-based Admission Scholarship, MSCD, Carnegie Mellon University
	2015	Kookmin Bank Academic Scholarship
	2010 - 2015	Academic Performance Scholarship, Korea National University

Memberships

- 2016 - Associate Member, Royal Institute of British Architects (RIBA)
- 2016 - Chartered Member, Architectural Institute of Korea (AIK)
- 2019 - Chartered Member, Society of Computational Design and Engineering Korea