

Jinmo Rhee

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Education

- 2024.05 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

Academic Appointment & Teaching Experiences

- 2023.08 - Assistant Professor
University of Calgary School of Architecture Planning and Landscape, Calgary,
Alberta, Canada
Scripting and Generative Design (ARCH 680.29)
Data Processing for Computational Design (ARCH 680.30)
Senior Research Studio in Architecture II (ARCH 702)
Design with Deep Learning (ARCH 672.32)
- 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 Classifying Building Form in a City with Implication for Orientation” in *Environment and Planning B: Urban Analytics and City Science*
- 2023 **Jinmo Rhee** and Ramesh Krishnamurti, “Latent Space to Support Virtual 3D Models” in *Cultural Space on Metaverse: KAIST Research Series*
- 2023 **Jinmo Rhee** and Pedro Veloso, “Single Objective Optimization for Building Layout in an Apartment Complex” in *Annual Conference of Architectural Institute of Korea*, Jeongseon
- 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*
- 2023 Tomas Cabezon Pedrosa, **Jinmo Rhee**, Daragh Byrne, “Feature space exploration as an alternative for design space exploration beyond the parametric space” in *the 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*
- 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 *the 20th International Conference of CAAD FUTURES*, Delft
- 2023 **Jinmo Rhee** and Bradley Williams, “Cost-Effective 3D Urban Massing Reconstruction of Public Aerial LiDAR Scans” in *the 20th International Conference of CAAD FUTURES*, Delft
- 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**, 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

Non-peer
Reviewed

- 2021 **Jinmo Rhee**, Pedro Veloso, "Type Investigation in the Form of High-rise Building Using Deep Neural Network" in *the 19th International Conference of CAAD FUTURES*, Los Angeles
- 2021 **Jinmo Rhee**, Pedro Veloso, Ramesh Krishnamurti, "Generative Design of Urban Fabrics Using Deep Learning" in *the 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 *the 25th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA)*, Bangkok
- 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
- 2011 Jiho Kim and **Jinmo Rhee**, "Computing Nature" in *Computing Aesthetics* v.18-no.4, Korea Information Processing Society
- 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

Work Experiences

Funded Research	2023 - 2024	Co-PI with Center For Civilization (CFC), Return of Interest (ROI) Urban Modelling Pilot Project, funded by City of Airdrie, CAD 200,000
	2023	PI, An Automated Deployable Camp Layout Technology for Rapid, Efficient, and Safer Refugee Settlement Design: Proof of Concept Stage, funded by VPR Catalyst Grants from University of Calgary, CAD 18,000
	2020 - 2023	PI, Generative Design for Apartment Building Layout Using Artificial Intelligence Technology, funded by DL E&C, USD 220,000
Research Activities	2023 -	Director DESTECTIC (Design Technology and Tactics) , University of Calgary
	2023 -	Associate Director LID (Laboratory for Integrated Design) , University of Calgary
	2020 -	Co-Founders CRAIDL (Creative AI and Design Launchpad) , Carnegie Mellon University
	2018 - 2020	Manager CoDeLab (Computational Design Laboratory) , Carnegie Mellon University
Architectural Practice	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

Exhibitions

- 2021 Exhibition Assistant, “Vers un imaginaire numérique exhibition”, Montréal's Design Centre
- 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

- 2023 Guest Speaker for RAS Theory, “Learning-based System in Design, Beyond Oracle”, Stuart Weitzman School of Architecture, University of Pennsylvania
- 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

Academic Services

Student Advising

- 2023 Research Advisor, “Identifying Building Types Using Deep Learning”, Zhiqi Pang, University of Calgary
- 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, “Building Information Twinning: Investigating the Software Architecture of a Building's Digital Twin”, 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

Conference

- 2023-2024 Paper Session Chair, the Association for Computer Aided Design in Architecture (ACADIA) Conference 2024, University of Calgary

- 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

- 2023 Building Layout Automation Reinforced by Physics Simulation as Constraints Solver (In the process of provisional patent in Canada)
- 2021 Media Control Device and System (Provisional Patent in USA, 89932005923, in the process of a full patent)
- 2018 Diagrammatic Image Dataset Generation with Neural Networks (Provisional Patent in USA, 9470103699300040518560)
- 2018 Custom Generative Systems with Adaptation Mechanisms (Provisional Patent in USA, 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 Transport 2020 Young CAADRIA Award 2020, The Association for Computer-Aided Architectural Design Research in Asia 2019 Grand Prize in Digital Architecture & Architecture Startup Competition 2019 (DAAS 2019), Architectural Institute of Korea and Korea Ministry of Land, Infrastructure and Transport 2019 Best Paper in Annual Conference of Architectural Institute of Korea, 2019 2016 Honorable Mentions in Collections of Excellent Graduation Paper, Architectural Institute of Korea 2014 Honorable Mentions in Architectural Structure Design Competition, The Korean Structural Engineers Association 2010 Honorable Mentions in Jeju Architecture Awards, Jeju City Government 2010 Honorable Mentions in Idea Competition of the Public Facility on Kwanghwamoon Plaza, Seoul Design Foundation |
| Scholarship | <ul style="list-style-type: none"> 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