Jinmo Rhee

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Education

2024.05	Ph.D. 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 Intro to Computational Design (DSGN 263) Computational Design for Built Environment (DSGN 363) 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 Pedroso, **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

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

Non-peer Reviewed

2024   **Jinmo Rhee** and Pedro Veloso, Digital Media Series: Python, Amazon Kindle Publisher (in-press)

2021   Pedro Veloso and **Jinmo Rhee**, "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	2024 – 2025	PI, *Enhancing Wildfire Evacuation Practices: Evaluating Automated Deployable Camp Layout Technology with Indigenous Communities in Canada*, funded by Social Sciences and Humanities Research Council (SSHRC), Connection Grants, CAD 16,000
	2023 - 2024	Co-PI with Center for Civilization (CFC), *Return of Interest (ROI) Urban Modelling Pilot Project*, funded by Alberta Real Estate Foundation and City of Airdrie, CAD 250,000
	2023 - 2024	PI, *An Automated Deployable Camp Layout Technology for Rapid, Efficient, and Safer Refugee Settlement Design: Proof of Concept Stage* funded by Social Sciences and Humanities Research Council (SSHRC), 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 Responsibilities	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 62-706 Generative Systems for Design, "Learning-based System in Design, Beyond Oracle", School of Architecture, Carnegie Mellon University

2023   Guest Speaker for ARCH 8070 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   2024   PhD Defense Examiner, "Multi-objective Optimization of Building Envelopes for Embodied and Operational Greenhouse Gas Emissions", Negar Badri, University of Calgary

2023 - 2024   Master Thesis Committee Member, "Speculative City through the Ideation of Spaces in Metaverse", Kenneth Anggara, University of British Columbia

2023   Research Advisor, "Identifying Building Types Using Deep Learning", Zhiqi Pang, University of Calgary

2023   Master Thesis Committee Member, "Decrypting the Black Box: a designer's journey into the infinite possibilities of ML in design", 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
Reviewer	2024 -	Reviewer, Journal of Mechanical Design, The America Society of Mechanical Engineering
	2024 -	Reviewer, International Journal of Architectural Computing, CAAD-Futures Foundation
	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

	2024	Media Control Device and System (Patent in USA, 11910130)
	2023	Building Layout Automation Reinforced by Physics Simulation as Constraints Solver (In the process of provisional patent in USA / Canada / Republic of Korea)
	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

Awards	2023	Nominated for the Breheny Prize, Environment and Planning B: Urban Analytics and City Science (in review)
	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	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

	2023 -	Faculty Member, Association of Collegiate Schools of Architecture (ASCA)
	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