Jinmo Rhee

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Education

2024	Ph.D. in Computational Design, School of Architecture, Carnegie Mellon University, US
2019	M.S. in Computational Design, School of Architecture, Carnegie Mellon University, US
2016	B.Arch. With Honors, College of Fine Arts, Korea National University of Arts, Korea

Licenses

2016	Royal Institute of British Architects (RIBA) Part II, 66 Portland Palace, London W1B 1AD, England
2011	Royal Institute of British Architects (RIBA) Part I, 66 Portland Palace, London W1B 1AD, England

Academic Appointments

2023 -	Assistant Professor, School of Architecture Planning and Landscape, University of Calgary, Canada
2019 - 23	Graduate / Studio Instructor, School of Architecture, Carnegie Mellon University, US
2017 - 19	Teaching Assistant, School of Architecture, Carnegie Mellon University, US

Experience

2023 −	Director, DESTECTIC (Design Technology and Tactics), University of Calgary, Canada
2023 −	Associate Director, LID (Laboratory for Integrated Design), University of Calgary, Canada
2020 −	Co-Founders, CRAIDL (Creative AI and Design Launchpad), Carnegie Mellon University, US
2018 − 20	Manager, CoDeLab (Computational Design Laboratory), Carnegie Mellon University, US
2015 − 19	Interior and Branding Architect, JinmoRhee, Korea
2017.01	Project Architect Urban Operation, Korea
2013 - 17	Architectural Assistant, SSWA Architects, Korea
2015.07	Project Manager, Architectural Assistant, ArchiWorkshop, Korea
2013.09	Architectural Assistant, MLNP Architects, Korea
2013.04	Instructor of Rhinoceros3D and Grasshopper Workshop, Ein Architects & Engineering, Korea

Funded Research

2024 − 29	PI, *Enhancing Analysis in GIS through Deep Learning: Development of a Robust Data Format and Advanced Processing Techniques*, funded by the Natural Sciences and Engineering Research Council of Canada (NSERC), Discovery Grants Program, CAD 340,000 (in-review)
2024 − 26	PI, *Urban AI: Intelligent Real Estate Search Through Enhanced Urban Environment Similarity Analysis*, funded by Alberta Real Estate Foundation, Investment Grant, CAD 178,000 (in-review)
2024 − 25	PI, *Enhancing Wildfire Evacuation Practices: Evaluating Automated Deployable Camp Layout Technology with Indigenous Communities in Canada*, funded by the Social Sciences and Humanities Research Council (SSHRC), Connection Grants, CAD 16,000
2023 − 24	Co-PI with Center for Civilization (CFC), *Return of Interest (ROI) Urban Modelling Pilot Project*, funded by Alberta Real Estate Foundation and the City of Airdrie, CAD 250,000
2023 − 24	PI, *An Automated Deployable Camp Layout Technology for Rapid, Efficient, and Safer Refugee Settlement Design: Proof of Concept Stage*, funded by the Social Sciences and Humanities Research Council (SSHRC) through VPR Catalyst Grants from University of Calgary, CAD 18,000
2020 − 22	PI, *Generative Design for Apartment Building Layout Using Artificial Intelligence Technology*, funded by DL E&C, USD 220,000

Refereed Publications

2024   **Jinmo Rhee**, "Comparative Analysis of Urban Structures in Three American Rust Belt Cities" in *Environment and Planning B: Urban Analytics and City Science* (in-press)

2024   **Jinmo Rhee**, Eunjoo Oh, "Pedagogy Explorations into Alternative Use of Generative AI in Design Studios" in the *Technology | Architecture + Design (TAD) Journal (in-press)*

2024   **Jinmo Rhee**, Pedro Veloso, "Efficient Camp Layout Design for Safer Wildfire Evacuee Solutions" in the *30th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) (under second round review)*

2024   Kiarash Kiany, **Jinmo Rhee**, Alberto de Salvatierra "Analyzing a New Return on Investment (ROI) Index with CO2 Valuation: A Case Study of Airdrie" in the *30th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) (under second round review)*

2024   **Jinmo Rhee**, Zhiqi Pang, Pedro Veloso, "Alternative to Oracle-like Generative AI in Architectural Design: Investigating 3D Building Form Types and Creating New Typologies" in the *30th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) (under second round review)*

2024   **Jinmo Rhee**, Eunjoo Oh, "Is AI Education Limited to Computer-based Methods, or Can It Transcend This Boundary?" in the *Comparative & International Education Society 2025 (in-review)*

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** and 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** and 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** and 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*

Other Publications

2024	Michael Hasey, **Jinmo Rhee** and 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*b in Critical Computational Relations in Design, Architecture and the Built Environment, Routledge
2024	**Jinmo Rhee** and Pedro Veloso, *Digital Media Series: Python*, Amazon Kindle Publisher
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

Courses

Assistant Professor at University of Calgary

Winter 2025	Introduction to Computational Design (DSGN 263), School of Architecture Planning and Landscape, University of Calgary, Canada
Winter 2025	Computational Design for Built Environment (DSGN 363), School of Architecture Planning and Landscape, University of Calgary, Canada
Fall 2024 Fall 2023	Scripting and Generative Design (ARCH 680.29), School of Architecture Planning and Landscape, University of Calgary, Canada
Winter 2024	Data Processing for Computational Design (ARCH 680.30), School of Architecture Planning and Landscape, University of Calgary, Canada
Winter 2024	Senior Research Studio in Architecture II (ARCH 702), School of Architecture Planning and Landscape, University of Calgary, Canada
Winter 2024	Design with Deep Learning (ARCH 672.32), School of Architecture Planning and Landscape, University of Calgary, Canada

Graduate Instructor at Carnegie Mellon University

Spring 2023 Spring 2022	Generative Systems for Design (68-702), School of Architecture, Carnegie Mellon University, US
Fall 2022 Fall 2021 Fall 2020	Scripting and Parametric Design (48-724), School of Architecture, Carnegie Mellon University, US
Spring 2022 Fall 2021 Spring 2021	Introduction to Artificial Intelligence in Design Studies (48-770), School of Architecture, Carnegie Mellon University, US
Spring 2021	Shaping Form (62-212), Carnegie Mellon University Qatar Campus, Qatar

Spring 2022 Spring 2021	Descriptive Geometry (62-175), School of Architecture, Carnegie Mellon University, US
Spring 2021 Spring 2020	Fundamentals of Computational Design (62-275), School of Architecture, Carnegie Mellon University, US
Fall 2020 Fall 2019	Architecture Design Studio: Foundation I (48-100), School of Architecture, Carnegie Mellon University, US

Teaching Assistant at Carnegie Mellon University

Fall 2019	MSCD Pre-Thesis II (48-716), School of Architecture, Carnegie Mellon University, US
Fall 2019 Fall 2018	Digital Skill Workshop 2018 and 2019 (48-689), Carnegie Mellon University, US
Fall 2019 Fall 2018	Digital Media I and II (48-120, 48-125, 62-122, 62-123), Carnegie Mellon University, US
Fall 2017	Generative Modeling (48-783), Carnegie Mellon University, US

Invited Lectures

2024	Discussion Panel, "AI, Friend or Foe?", d.talks, Calgary, Canada
2024	Discussion Panel, "Hop on the Train or Get Left Behind: The Inevitable Amalgamation of Architects' Ingenuity & Artificial Intelligence?", BUILDEX Alberta, Calgary, Canada
2024	Guest Lecturer for DSGN 231, "Computational Urban Morphology: How Are Urban Spaces Read and Planned Through Data?", School of Architecture Planning and Landscape, University of Calgary, Canada
2024	Guest Lecturer, "Learning-based System in Design, Beyond Oracle", Graduate School of Culture Technology, KAIST, Korea
2023	Guest Lecturer for 62-706 Generative Systems for Design, "Learning-based System in Design, Beyond Oracle", School of Architecture, Carnegie Mellon University, US
2023	Guest Lecturer for ARCH 8070 RAS Theory, "Learning-based System in Design, Beyond Oracle", Stuart Weitzman School of Architecture, University of Pennsylvania, US
2021, 2022	Guest Speaker for Graduate Seminar: Situating Research, "Analysis of Urban Form Using Artificial Intelligence", School of Architecture, Carnegie Mellon University, US
2021	Discussion Panel for Exchange: AI in Design, School of Architecture, Carnegie Mellon University, US
2017	Guest Lecturer for Intermediate Design Studio, "Digital to Physical", Sookmyung Women's University, Korea
2017	Guest Speaker for Advanced Design Studio, "Digital to Physical", Korea National University, Korea

Student Advising

2024 - 28	PhD Student Supervisor in Environmental Design (Computational Design Focus), Yunhao Yang, University of Calgary, Canada
2024 - 26	Master Student Supervisor in Environmental Design (Computational Design Focus), Kiana Rasti, University of Calgary, Canada
2024 - 26	Master Student Supervisor in Environmental Design (Computational Design Focus), Kiarash Kiany, University of Calgary, Canada
2024 - 25	PhD Supervisory Committee Member, Alex Sidaway, University of Calgary, Canada
2024	DDes Defense Neutral Chair, "Entangled Methodologies for Participatory Multispecies Futures", Priyanka Bista, University of Calgary, Canada
2024	PhD Defense Examiner, "Multi-objective Optimization of Building Envelopes for Embodied and Operational Greenhouse Gas Emissions", Negar Badri, University of Calgary, Canada
2024	Master Thesis Committee Member, "Design with data-driven shape rule recognition through learning-based shape grammar interpreter", Yujeong Seo, Carnegie Mellon University, US
2024	Master Thesis Committee Member, "Speculative City through the Ideation of Spaces in Metaverse", Kenneth Anggara, University of British Columbia, Canada
2023	Research Advisor, "Identifying Building Types Using Deep Learning", Zhiqi Pang, University of Calgary, Canada

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, US
2023	Master Thesis Committee Member, "Building Information Twinning: Investigating the Software Architecture of a Building's Digital Twin", Brad Williams, Carnegie Mellon University, US
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, US

Honours and 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
2021 - 22	Architectural Design Human Resource Development Project, Korea Agency for Infrastructure Technology Advancement
2018 - 22	Graduate Student Small Project Help (GuSH) funds, Carnegie Mellon University
2019	SoA + GSA International Conference Travel Grants, Carnegie Mellon University
2017 - 19	Merit-based Admission Scholarship, Carnegie Mellon University
2015	Kookmin Bank Academic Scholarship
2010 - 15	Academic Performance Scholarship, Korea National University

Academic Services

2023 - 24	Scientific Chair, the Association for Computer Aided Design in Architecture (ACADIA) Conference 2024, University of Calgary
2024 -	Reviewer, *Journal of Mechanical Design*, The American Society of Mechanical Engineers
2024 -	Reviewer, *International Journal of Architectural Computing*, CAAD-Futures Foundation
2024 -	Reviewer, *Design Sustainability*,
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)

Certificates

| 2018 | Mathematics for Machine Learning: Linear Algebra, Certificated by Imperial College London and offered through Coursera |
| 2018 | Mathematics for Machine Learning: Multivariate Calculus, Certificated by Imperial College London and offered through Coursera |

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)*

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