

# Jihoon Chung, Ph.D., LEED AP BD+C, WELL AP, FMP

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CONTACT INFORMATION	Grid-interactive Controls Group Oak Ridge National Laboratory Tennessee, United States	Tel: +1 (347) 204-2049 E-mail: jihoonchung.research@gmail.com <a href="https://j-chung.kr/linkedin">https://j-chung.kr/linkedin</a>
QUALIFICATION SUMMARY	<ul style="list-style-type: none"><li>• Interdisciplinary researcher specializing in Building Information Modeling (BIM), Internet of Things (IoT), and ontology, and occupant behavior modeling for enhancing indoor environmental quality and energy efficiency</li><li>• Hold a Ph.D. in Architectural Science at Rensselaer Polytechnic Institute, focusing on developing digital twin platforms for co-simulation ecosystem for multidisciplinary simulation environments</li><li>• Developed web-based digital twin platforms integrating BIM, IoT, and Building Automation Systems (BAS) for real-time monitoring of indoor environment and occupant behaviors, leading to publications in i3CE and ICCCBCE proceedings</li><li>• Collaborated with industry and academic leaders, including Autodesk, Lawrence Berkeley Lab, NASA, Solibri, Tetherless World Constellation (TWC), LESA laboratory, and OBMI</li><li>• Experienced educator and mentor, serving as a guest lecturer, project mentor, and teaching assistant in programming and smart IoT systems at Rensselaer Polytechnic Institute and high schools in NYC and San Francisco</li></ul>	
EDUCATION	<p><b>Rensselaer Polytechnic Institute</b>, New York, United States</p> <p>Ph.D., Architectural Sciences (Built Ecologies), GPA: 4.0/4.0, May 2025</p> <ul style="list-style-type: none"><li>• Thesis: “Cross Domain Interoperability Framework for Enhancing Building Performance: Integrating Building Information Modeling, Building Energy Modeling, Building Control System, and Occupant Behavior”</li><li>• Advisor: Dr. Dennis Shelden</li></ul> <p>Graduate Certificates, May 2024</p> <ul style="list-style-type: none"><li>• Machine Learning &amp; AI   Business Intelligence</li></ul> <p>M.S., Architecture (Design Technology), GPA: 4.0/4.0, December 2023</p> <ul style="list-style-type: none"><li>• Advisor: Dr. Dennis Shelden</li></ul> <p><b>Yonsei University</b>, Seoul, Korea</p> <p>M.S., Architectural Engineering (Construction IT), GPA: 3.97/4.0, February 2021</p> <ul style="list-style-type: none"><li>• Thesis: “Technical Specification Framework for 3D Concrete Printers”</li><li>• Advisor: Dr. Ghang Lee</li></ul> <p>B.Arch, Architecture (5-year program), February 2019</p> <p><b>National University of Singapore</b>, Singapore</p> <p>Exchange Program for a year in AY2017</p> <p><b>Gunmyungwon (건명원)</b>, Seoul, Korea</p> <p>Future New School of Humanities, Arts &amp; Science, February 2016</p>	
RESEARCH & WORK EXPERIENCE	<p><b>Oak Ridge National Laboratory</b>, Tennessee</p> <p><i>Postdoctoral Research Associate</i></p> <ul style="list-style-type: none"><li>• Grid-interactive Controls Group (led by Dr. Jamie Lian) under Energy Science and Technology Directorate</li><li>• Served as a Budget &amp; Sponsorship Chair at ORPA Executive Committee Board for FY26</li></ul>	<b>May 2025 – Current</b>

**Oak Ridge National Laboratory**, Tennessee

*ORISE Graduate Researcher*

**February 2025 – May 2025**

- Developed a generalizable building control web application for small- and medium-sized commercial buildings by utilizing VOLTTRON, IoT sensors, and BOPTEST
- Participated in Graduate Research at ORNL program (Mentored by Dr. Sen Huang)

**Center for Architecture Science and Ecology**, New York

*Research Assistant*

**August 2021 – May 2025**

- Developed prototypes of a SHACL-based IFC-to-Brick converter and an IFC4.3-to-ECS translator in collaboration with industry experts from Autodesk, Solibri, and Trimble, showcased them at the IFC Implementers Meeting of buildingSMART International
- Developed a web-based building monitoring system for occupant behavior using BIM, IoT, Building Automation System (BAS), and semantic web technologies
- Designed Arduino circuit boards and developed a web server for IoT-based plant modules to autonomously manage plant health by controlling water pumps, grow lights, and fans, as a part of Plant Pixel project sponsored by OBMI
- Organized and hosted the guest lecture series “AI Technology in Built Ecologies” as part of the ‘CASE Built Ecologies Graduate Seminar’, featuring four expert lecturers specializing in AI technologies within the field of built ecologies

**Lawrence Berkeley National Laboratory**, California

*Research Affiliate*

**January 2024 – August 2024**

- Enhanced standardized occupant behavior schema (obXML v.1.4) as a part of the ASHRAE RP-1815 project
- Updated the obFMU Application Guide and IDF files in the tutorial to enhance the compatibility with the latest version of EnergyPlus (v.24.1.0)
- Converted C++-based occupant behavior simulator (obFMU) into Python version for integration with data-driven occupant behavior modeling and BIM
- Explored development of a web platform for real-time energy simulation using EnergyPlus, obFMU, and sensor data
- Hosted by Dr. Tianzhen Hong

**Autodesk**, New York

*Intern, Sustainable Active and Passive Mechanical Systems Simulation and Optimization*

**May 2023 – August 2023**

- Explored integration of generative design process with natural ventilation simulation for evaluating the performance of the ventilation systems at the early design stage using EnergyPlus
- The internship project was published and introduced on the Autodesk Research blog [Link]
- Volunteered to support AEC Mentor Program for underrepresented-minority teenagers who participated in a paid two-week internship at Autodesk's Boston office

**Saman Corporation**, South Korea

*Researcher*

**February 2021 – July 2021**

- Planned application services using real-time data collected from IoT sensors on construction sites in a national research project 'Development of and digital twin platform for smart construction'
- Assisted to prepare kick-off meetings and presentations in a national research project 'XR Flagship Project (Construction part)'
- Wrote bills of quantities in a pilot design project on a box culvert organized by Korea Expressway Corporation

**TEACHING  
& MENTORING  
EXPERIENCE**

**Building Informatics Group, Yonsei University**

*Research Assistant*

**February 2018 – January 2021**

- Proposed a technical specification framework for 3D concrete printers through a systematic literature review and a Delphi study
- Developed a multi-dimensional classification algorithm for housing defects text data using BERT-based multitask learning technique (Recurrent Neural Network)
- Explored optimization algorithm for buildability of 3D concrete printing focused on operation planning and concrete properties

**ATEAM Ventures, South Korea**

*Strategic Planning staff*

**May 2015 – August 2015**

- Planned strategies for marketing & sales and held a 3D-printer exhibition at KINTEX, Ilsan
- Installed a factory to assemble 3D-printers and managed mechanical components
- Managed all customer inquiries, wrote customer manuals, and sent thank-you letters to early customer

**XbarX (X\_X), South Korea**

*Sales Director & Co-founder*

**May 2014 – February 2015**

- Launched a beer recommendation app and beer-distribution web platform
- Got partnerships with 218 beer pub, bar, and restaurant in Seoul, South Korea
- Got a shared 3rd award with a \$4,500 cash prize in 'The 3rd Chung Ju-young Start-up Competition' and funding, \$140,000 from a start-up accelerator

**TEACHING  
& MENTORING  
EXPERIENCE**

**Engineering for US All, Tennessee**

*e4usa Liaison*

**July 2025 – Present**

- Supported engineering programs at Clinton High School, Oak Ridge, TN

**CodePath, USA**

*Mentor*

**July 2025 – Present**

- Advised college students on application strategies and interview preparation for positions at tech companies at 2025 CodePath's Mentorship & Resume Review Weeks

**Mentors in Tech, USA**

*Mentor*

**July 2025 – Present**

- Advised college students on application strategies and interview preparation for positions at tech companies

**Rensselaer Polytechnic Institute, New York**

*Guest Lecturer*

**August 2021 – February 2025**

- 'Node-RED 101 for your own Smart IoT-based System' in 'Internetworking of Things (ECSE-4660/ECSE-6660)' course (February 23, 2024)

*Project Mentor*

- Taught and led an undergraduate group in a research-oriented class 'Research Investigation (ARCH-4958)' (Fall 2022, Fall 2023 & Fall 2024)
- Advised an undergraduate to develop an algorithm evaluating plants' health using a color sensor as a part of the Plant Pixel project sponsored by OBMI (Fall 2023)
- Provided advice to undergraduates in an interdisciplinary project 'Smart Dormitory Devices and Development System (ECSE-4900)' (Fall 2022, Spring 2023 & Fall 2023)
- Participate in Smart City Hackathon 2023 organized by Tech Valley Center of Gravity as a microcontroller-knowledgeable mentor (October 13-15, 2023)

*Workshop Instructor*

- 'Build an IoT Monitoring System for Your Smart Home' at Black Families Technology Awareness Day (February 2022, February 2023 & February 2025)

<b>Microsoft TEALS</b> , New York <i>Programming Teaching Assistant</i>	<b>August 2023 – May 2025</b>
<ul style="list-style-type: none"> <li>• AP Computer Science Principles (Fall 2023, Fall 2024, and Spring 2025) at Franklin D Roosevelt High School, NYC</li> <li>• AP Computer Science A (Spring 2024) at El Camino High School, San Francisco, CA</li> </ul>	
<b>Lawrence Berkeley National Laboratory</b> , California <i>Teaching Assistant &amp; Project Facilitator</i>	<b>June 2024 – July 2024</b>
<ul style="list-style-type: none"> <li>• Intro to Python &amp; Data Science course in Experiences in Research (EinR) bootcamp 2024 (6-week summer internship)</li> <li>• Intro to Python &amp; Data Science course in Berkeley Lab Director's Apprenticeship Program (BLDAP) 2024</li> <li>• Robotics projects in Science Accelerating Girls' Engagement in STEM (SAGE) summer camp 2024</li> </ul>	
<b>Code Nation</b> , New York <i>Programming Teaching Assistant</i>	<b>August 2022 – June 2024</b>
<ul style="list-style-type: none"> <li>• Intro to Web Development (Spring 2024) course at Collegiate Institute for Math &amp; Science, NYC</li> <li>• Intro to Web Development (AY2022–2023) &amp; Fellowship I (JavaScript/jQuery, Fall 2023) courses at Achievement First East Brooklyn High School, NYC</li> </ul>	
<b>Yonsei University</b> , South Korea <i>Teaching Assistant</i>	<b>March 2019 – June 2020</b>
<ul style="list-style-type: none"> <li>• Engineering-Information Processing (Spring 2020)</li> <li>• Computer Lab Manager (Spring 2019)</li> </ul>	

## PUBLICATIONS

- (*In Progress*) Chung, J., Huang, S. and Lian, J. (2025) "Low-Cost, Open-Source Building Energy Management Platform for Scalable Deployment in Small and Medium Commercial Buildings" *Journal of Building Performance Simulation*
- (*In Progress*) Chung, J., Hong, T., Malik, J. and Shelden, D. (2025) "Enhanced Library of Occupant Behavior Models and gb-obXML Schema Editor for Interoperability between Building Information Modeling and Building Energy Modeling" *Building Simulation*
- Ma, N., Lu, Y., Arsano, Y., Brown, N., Chung, J., et al. (2025) "Towards high-performance buildings for thermal resilience and health" *Energy and Buildings*, 116367, <https://doi.org/10.1016/j.enbuild.2025.116367>
- Chung, J., Hong, T., Malik, J. and Shelden, D. (2025) "Enhancing Occupant Behavior Representation for Interoperability between Building Information Modeling and Building Energy Modeling" *Building Simulation*, 18(7), 1-24, <https://doi.org/10.1007/s12273-025-1313-z>
- Chung, J., Neo, K., Khan, M., Cruz, E., Zheng, Z., Munasinghe, T., and Wei, J. C. (2025) "Exploring Flooded Fraction Prediction through Machine Learning Models Focusing on Medical Infrastructure in the Southeast U.S. Coastal Areas" *Proceedings of the IEEE BigComp 2025*, <https://ntrs.nasa.gov/citations/20250000362>
- Chung, J. and Shelden, D. (2024) "A Framework of ifcJSON-based Digital Twin Platform for Monitoring Building Environment using BIM, IoT, and Semantic Web Technologies" *Proceedings of the 20th International Society for Computing in Civil and Building Engineering*, Montreal, Canada, 26 Aug, [https://doi.org/10.1007/978-3-031-84208-5\\_4](https://doi.org/10.1007/978-3-031-84208-5_4)

- Chung, J.**, Karliceck, B., and Shelden, D. (2024) "Towards Real-Time Occupant Behavior Monitoring System: A Preliminary Study on Integrating BIM, IoT Sensors, and BAS" *Proceedings of ASCE International Conference on Computing in Civil Engineering 2024*, Pittsburg, USA, 29 Jul.
- Chung, J.**, Shahmansouri, N., Stoddart, J., Goldstein, R., and Locke, J. (2024) "Sustainability through Optimal Design of Buildings for Natural Ventilation using Updated Comfort and Occupancy Models" *Proceedings of SimBuild Conference 2024*, 11, pp. 849-860, Denver, USA, 30 May, [https://publications.ibpsa.org/conference/paper/?id=simbuild2024\\_2172](https://publications.ibpsa.org/conference/paper/?id=simbuild2024_2172)
- Wei, J., Gerasimov, I., Munasinghe, T., **Chung, J.**, Cruz, E., Neo, K., Yu, Y. Z., Zheng, Z., and Khan, M. (2024) "Advancing Open Science in Atmospheric Research: Integrating Data Usability and Machine Learning" In *Asia Oceania Geosciences Society (AOGS) 2024 21th Annual Meeting*, <https://ntrs.nasa.gov/citations/20240007793>
- Chung, J.**, Hong, T., Karlicek, R., Santos, H., Shelden, D., and Sparks, D. (2024) "Distributed Semantics to Support Built Environment Digital Twins" In *NSF Workshop on Sustainable Computing for Sustainability 2024*, Alexandria, USA, 17 Apr.
- Chung, J.**, Tsamis, A., and Shelden, D. (2023) "A framework for monitoring and identifying indoor air pollutants based on BIM with IoT sensors" *Proceedings of Computer-Aided Architectural Design. INTERCONNECTIONS: Co-computing beyond boundaries: 20th International Conference, CAAD Futures 2023*, pp. 518-531, Delft, Netherlands, 5 Jul., [https://doi.org/10.1007/978-3-031-37189-9\\_34](https://doi.org/10.1007/978-3-031-37189-9_34)
- Chung, J.**, Jacoby-Cooper, G., Rook, K., Henrique, S., Shelden, D., Kendall, E., and McGuinness, D. (2023) "Towards an Indoor Environmental Quality Management Ontology" *Proceedings of First International Workshop on Semantic Web on Constrained Things @ ESWC-23 (SWoCoT-23)*, pp. 16-26, Hersonissos, Greece, 28 May, <https://hdl.handle.net/20.500.13015/6674>
- Chung, J.**, Lee, G., and Kim, J. (2021) " Framework for Technical Specifications of 3D Concrete Printers" *Automation in Construction*, 127, 103732, <https://doi.org/10.1016/j.autcon.2021.103732>
- (Submitted) Woo, J., **Chung, J.**, and Koo, H. (2021) " A Study on the Pedestrian Route Choices and Accessibility in the Retail Areas after Acute COVID-19: Focused on the Peak Commercial Activity's Hours in the Mangwon District" *Journal of the Urban Design Institute of Korea*
- Chung, J.**, Lee, G., Kim, J. and Choi, J. (2020) "A Comparative Analysis of the Classification System for Three-Dimensional Concrete Printers" *Korean Journal of Construction Engineering and Management*, 21(2), 3-14, <https://doi.org/10.6106/KJCEM.2020.21.2.003>
- Chung, J.**, Lee, G., and Kim, J. (2020) "A Systematic Review of the Geographic and Chronological Distributions of 3D Concrete Printers from 1997 to 2020", *Proceedings of the 37th International Symposium on Automation and Robotics in Construction (ISARC)*, pp. 84-19, Kitakyushu, Japan, 27-28 Oct., <https://doi.org/10.22260/ISARC2020/0014>
- Lee, G., Cho, J., Song, T., Roh, H., Jung, J., **Chung, J.**, Yong, G., and Jeong, D. (2020) "Construction Field Management Using a Popular Text Messenger" *Proceedings of the 18th International Conference on Computing in Civil and Building Engineering*, pp. 971-979, [https://doi.org/10.1007/978-3-030-51295-8\\_67](https://doi.org/10.1007/978-3-030-51295-8_67)
- Chung, J.**, Lee, G., and Kim, J. (2018), "Performance Evaluation Criteria for Building 3D Printing Focused on Concrete Properties", *Proceedings of the 2018 Annual Conference of the Korea Institute of Construction Engineering and Management*, pp. 27-29, South Korea, 9 Nov.

## PATENTS

- (Submitted) Chung, J.**, Stoddart, J., Locke, J., Goldstein, R., and Shahmansouri, N. (2024) "Automated Generation and Analysis of Natural Ventilation Performance Using Tile-based Building Geometry", USA
- (Submitted) Chung, J.**, Stoddart, J., Locke, J., Goldstein, R., and Shahmansouri, N. (2024) "Automated Comparative Analysis of Alternative Comfort and Occupancy Models in Building Energy Analysis", USA
- Kim, J., Lee, G., Lee, D., Lee, J., **Chung, J.** (2020), "3D printer for construction with continuous printing on the go and 3D printing system comprising it", Application Serial No. KR20200101482A, South Korea, <https://patents.google.com/patent/KR20200101482A/ko9> Nov.

## ARTICLE

- Chung, J.** (2024) "Want To Be More Comfortable Indoors? Let Your Building Help" *Every Day Matters*: RPI Blog, [Link]
- Lee, G., **Chung, J.**, and Kim, J. (2021) "On What Basis Should We Buy a 3D Concrete Printer?" *Building Construction*, 21(4), 31-34, [Link]

HONORS  
& AWARDS

- |   |                                    |
|---|------------------------------------|
| <b>Faculty Graduate Recognition Award for Excellent Academic Achievement</b><br><i>Rensselaer Polytechnic Institute, New York</i>                     | <b>May 2025</b>                    |
| <b>DB Dream Master Scholarship Award</b> for two semesters<br><i>DB Kim-Jun-Ki Cultural Foundation, South Korea</i>                                   | <b>May 2024</b>                    |
| <b>IBPSA-USA SimBuild Conference Student Scholarship Award</b><br><i>IBPSA-USA SimBuild Conference 2024, United States</i>                            | <b>March 2024</b>                  |
| <b>Graduate Research Symposium (Podium Presentations)</b> , The 3 <sup>rd</sup> Prize<br><i>Rensselaer Polytechnic Institute, New York</i>            | <b>June 2022</b>                   |
| <b>Research Assistantship Award</b> for 2021-2025 academic year<br><i>Rensselaer Polytechnic Institute, New York</i>                                  | <b>August 2021</b>                 |
| <b>The 17th Outstanding Thesis Competition</b> , Honorable Mention<br><i>Architectural Institute of Korea, South Korea</i>                            | <b>April 2021</b>                  |
| <b>2019 Yonsei Startup Lab Contest (\$2,700)</b> , Best Startup Award<br><i>Yonsei University, South Korea</i>  | <b>July 2019</b>                   |
| <b>2018 KICEM Annual Conference</b> , Excellent Paper Award<br><i>Korea Institute of Construction Engineering and Management, South Korea</i>         | <b>November 2018</b>               |
| <b>Academic Scholarships</b> for four semesters<br><i>Yonsei University, South Korea</i>  | <b>March 2016 – September 2018</b> |
| <b>The 12<sup>th</sup> Architectural Engineering Competition</b> , Excellent Award<br><i>The Korean Structural Engineers Association, South Korea</i> | <b>September 2016</b>              |
| <b>Volunteer Full-Scholarship</b> for two semesters<br><i>DB Kim-Jun-Ki Cultural Foundation, South Korea</i>  | <b>March &amp; September 2016</b>  |
| <b>The 3<sup>rd</sup> Chung Ju-young Startup Competition (\$4,500)</b> , Excellent Startup Award<br><i>The Asan Nanum Foundation, South Korea</i>     | <b>August 2014</b>                 |
| <b>The 18<sup>th</sup> National Boxing Competition for Non-Athlete</b> , The 1 <sup>st</sup> Prize<br><i>Korea Boxing Institution, South Korea</i>    | <b>August 2012</b>                 |
| <b>Chief Superintendent's Award for Leadership</b><br><i>Seoul Metropolitan Office of Education, South Korea</i>                                      | <b>May 2011</b>                    |

PRESENTATIONS & INVITED TALKS	<b>Plant Pixel</b> <i>OBM International, United States</i>	August 2023 – December 2023
	<b>Development of Digital Platform and Digital Twin based on Management Technology for Smart Construction</b> <i>Korea Agency for Infrastructure Technology Advancement (KAIA) [Link]</i>	February 2021 – July 2021
	<b>XR Flagship Project (Construction part)</b> <i>Ministry of Science and ICT &amp; National IT Industry Promotion Agency, Korea [Link]</i>	June 2021 – Jul 2021
	<b>Development of Innovative Design, Material and Equipment for 3D Printing Small Buildings/Freeform Members</b> <i>Korea Agency for Infrastructure Technology Advancement (KAIA) [Link]</i>	March 2018 – February 2021
	<b>Digital Twin: Multidisciplinary Co-Simulation Ecosystem</b> <i>GRIDD Lunch &amp; Learn, Ecole de technologie supérieure, University of Québec</i>	December 3, 2024
	<b>A framework of BIM &amp; IoT-based Building Infrastructure for Monitoring Indoor Air Quality and Occupant Behavior</b> <i>Research Showcase — Reunion &amp; Homecoming 2024, RPI [Poster]</i>	September 27, 2023
	<b>IFC Simplification and Granular Component Demo &amp; IFC-LD / SHACL Implementation Developments</b> <i>General Assembly of Implementers, buildingSMART International [Oral]</i>	August 29, 2024
	<b>How Programming is Used in Architecture &amp; Building Technology?</b> <i>Computer Science Career Panel, El Camino High School</i>	April 11, 2024
	<b>A Daily Flooding Risk Assessment Map for Medical Infrastructures Using Machine Learning Algorithms</b> <i>AGU23 Fall Meeting [Poster]</i>	January 22, 2024
	<b>A framework of BIM &amp; IoT-based Building Infrastructure for Monitoring Indoor Air Quality and Occupant Behavior</b> <i>Research Showcase — Reunion &amp; Homecoming 2023, RPI [Poster]</i>	October 13, 2023
	<b>Sustainability through Optimal Design of Buildings for NV and Post-Occupancy Using Updated Comfort Models</b> <i>Research Connections — Summer Intern Series, Autodesk [Oral]</i>	August 17, 2023
	<b>Daily Flooding Risk Assessment Map for Medical Infrastructures using Machine Learning Algorithm</b> <i>AmeriGEO Week 2023 'Data Driven Solutions for a Sustainable Planet' [Poster]</i>	August 8, 2023
	<b>Towards an Indoor Environmental Quality Management Ontology</b> <i>2023 8<sup>th</sup> Annual Graduate Research Symposium, RPI [Oral]</i>	May 12, 2023
	<b>A framework for monitoring and identifying indoor air pollutants based on BIM with IoT sensors</b> <i>2023 8<sup>th</sup> Annual Graduate Research Symposium, RPI [Poster]</i>	May 12, 2023
	<b>Air Quality Monitoring System based on BIM &amp; IoT</b> <i>EBESS Industry Workshop 'Well-being &amp; Sustainability in the Built Environment', RPI [Poster]</i>	November 2, 2022
	<b>Air Quality Monitoring System based on BIM &amp; IoT</b> <i>2022 7<sup>th</sup> Annual Graduate Research Symposium, RPI [Poster, Oral – 3<sup>rd</sup> Place]</i>	May 13, 2022
	<b>A Systematic Review of 3D Concrete Printers from 1997 to 2020</b> <i>37th International Symposium on Automation and Robotics in Construction (ISARC) [Oral]</i>	October 28, 2022

**SKILLS**

**Programming Languages:** Python, C#, JAVA, C++, JavaScript (React.js, Node.js, Three.js, ifc.js, Express.js, Node-RED), TypeScript, P5 Processing, SPARQL, SQL  
**CAD/CAE:** Rhino (+Grasshopper, Ladybug, Honeybee, Butterfly), Revit (+Dynamo, Ladybug, Honeybee, Butterfly), Sketchup, CATIA, AutoCAD, Midas Civil  
**Design tools:** Adobe Photoshop, Illustrator, InDesign, Premiere Pro, Lightroom, Experience Design  
**Machining:** Arduino, Raspberry Pi, 3D printer, Laser Cutter  
**Others:** OpenStudio (+EnergyPlus), Contam, Functional Mockup Unit (+obFMU, EnergyPlusFMU, ContamFMU), Tensorflow (+Keras), Pytorch, SPSS, SHACL, Protégé

**CERTIFICATIONS**

<b>LEED AP BD+C</b> (Credential ID: 11476216-AP-BD+C) <i>U.S. Green Building Council</i>	<b>September 20, 2024</b>
<b>Facility Management Professional</b> (Credential ID: 1193106) <i>International Facility Management Association (IFMA)</i>	<b>June 27, 2024</b>
<b>WELL AP</b> (Credential ID: WELL-AP-0000134489) <i>International WELL Building Institute (IWBI)</i>	<b>February 6, 2023</b>
<b>LEED Green Associate</b> (Credential ID: 11476216-GREEN-ASSOCIATE) <i>U.S. Green Building Council</i>	<b>August 13, 2022</b>
<b>2020 AI Technical Development Workshop (Image/Video Recognition)</b> <i>Korea Electric Power Corporation (KEPCO)</i>	<b>August 7, 2020</b>
<b>The 9<sup>th</sup> Image Recognition Application Workshop</b> <i>Fast Campus (파스트캠퍼스)</i>	<b>October 19, 2019</b>
<b>The 3<sup>rd</sup> Object Detection Application Workshop</b> <i>Fast Campus (파스트캠퍼스)</i>	<b>September 7, 2019</b>
<b>DA BIM Specialist Intermediate Workshop</b> <i>DAGROUP Urban Design &amp; Architecture Co., Ltd</i>	<b>July 14, 2019</b>
<b>2018 BIGDATA X CAMPUS (Python-based Big Data Analysis)</b> <i>Korea Data Agency</i>	<b>June 14, 2018</b>

**ACADEMIC SERVICE**

**Journal Reviewer**

- Automation in Construction
- Building Simulation: An International Journal
- Journal of Building Engineering
- Buildings
- Energies
- Sustainability
- Processes
- Journal of Data Science and Intelligent Systems
- Journal of Civil Engineering and Architecture
- Journal of Civil, Construction and Environmental Engineering

**Academic Conference Reviewer**

- IBPSA-USA SimBuild Conference 2024 / 2026

- IBPSA-Australasia Building Simulation Conference 2025
- International Conference on Modern Management based on Big Data 2025
- International Conference on Artificial Intelligence, Computer, Data Sciences and Applications 2025
- International Conference on Electrical, Computer and Energy Technologies 2025
- International Conference on Electrical, Computer, Communications and Mechatronics Engineering 2024 / 2025
- International Conference on Electrical and Computer Engineering Researches 2024

#### **Invited Juror**

- Architectural Drawing & Representation at GSAPP, Columbia University (Fall 2023)
- 2025 Shape the Future of Building Simulation Competition by IBPSA-USA
- 2025 GEM Fellow Tech Talk Competition at Oak Ridge National Laboratory
- Green Scholars Program Science Fair 2024
- Contra Costa County Science & Engineering Fair 2024
- Alameda County Science & Engineering Fair 2024

#### **Application Reviewer**

- Science en Accion 2024 at Berkeley Lab
- Science Accelerating Girls' Engagement in STEM (SAGE) 2024 at Berkeley Lab
- Quantum, Computing, Mathematics & Physics (QCAMP) 2024 at Berkeley Lab
- Berkeley Lab Director's Apprenticeship Program (BLDAP) 2024

#### **Session Chair**

- IBPSA-USA SimBuild 2024

#### **Committee Member**

- Budget & Sponsorship Chair, Executive Committee Board for FY2026, Oak Ridge Postdoctoral Association
- Member, Research Committee, International Building Performance Simulation Association - USA (IBPSA-USA)
- Provisional Corresponding Member, Technical Committee (T-TAC-TC07.05), American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE)

#### MEDIA APPEARANCES

**Meeting Future Talents with Diverse Dreams:  
2024 DB Dream Master Scholarship Award Ceremony**  
*DB Story Blog, DB Kim-Jun-Ki Cultural Foundation, Korea [Link]*

**June 11, 2024**

**Recently Published by Autodesk Researchers**  
*Autodesk Research Blog [Link]*

**January 18, 2024**

**CASE Doctoral Student To Conduct Fellowship at Berkeley Lab**  
*Every Day Matters, Rensselaer Polytechnic Institute [Link]*

**January 10, 2024**

**Nurturing Blue Dreams at the School of Architecture**  
• *EBS News, South Korea [Link]* Engineers (ASHRAE)

**September 5, 2018**

#### VOLUNTEER EXPERIENCE

**Lawrence Berkeley National Laboratory**, California  
*Application Review Board / Mentor / STEM Activity Supporter*

**January 2024 – August 2024**

**Y-Zone Project in STEM Alliance**, New York  
*Bilingual (Korean/English) Volunteer Translator*

**October 2021 – September 2022**

**Major Mentoring Program** in Yonsei University, Korea  
*Architecture-Major Mentor*

**March 2019 – May 2021**

<b>Architecture School</b> in Junglim Foundation, Korea <i>Architecture Tutor</i>	<b>August 2018 – October 2018</b>
<b>Global Volunteering Program</b> in Dongbu Foundation, Vietnam <i>Student Volunteer</i>	<b>January 2017</b>
<b>Student Volunteer Group</b> in Dongbu Foundation, Korea <i>Volunteer &amp; Scholarship Holder</i>	<b>February 2016 – February 2017</b>
<b>Global Engineering Program</b> in Yonsei University, Indonesia <i>Student Volunteer &amp; Assistant Manager</i>	<b>August 2016</b>
<b>Seoul Junghwa Secondary School</b> , Korea <i>Speech Tutor</i>	<b>September 2012 – December 2012</b>
<b>Seoul Soongduck Primary School</b> , Korea <i>Speech Tutor</i>	<b>March 2012 – July 2013</b>
<b>Kyoto International School</b> , Japan <i>Korean Tutor</i>	<b>August 2012</b>

REFERENCES

Available upon request.