Seung Hyun Cha

Associate Professor, Graduate School of Culture Technology, KAIST

Associate Professor (Tenured, Sep 2021 – Present)
Graduate School of Culture Technology, KAIST

- **Director** (Sep 2021 – Present), Future Space Lab, KAIST
- **Director** (Jul 2026 – Present), FACT Research Center (Future Architecture Convergence Technology), CTRI, KAIST

AFFILIATE APPOINTMENTS

Affiliate Professor (Dec 2021 – Present), Department of Civil and Environmental Engineering, KAIST

Affiliate Professor (Sep 2022 – Present), Graduate School of Metaverse, KAIST

Affiliate Professor (May 2026 – Present), Department of AI and Future Studies, KAIST

Affiliate Professor (May 2026 – Present), Department of AX, KAIST

Affiliate Professor (Aug 2025 – Present), New York University

Member of YKAST(한국차세대과학기술한림원), Young Korean Academy of Science and Technology (Dec 2022 – present)

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LAB WEBSITE

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LAB INTRODUCTION VIDEO

youtu.be/4Fk_6BVnf_o

75	99	42
JOURNAL ARTICLES	CONFERENCE PAPERS	RESEARCH PROJECTS
3,021	**30**	**46**
CITATIONS	H-INDEX	I10-INDEX

Google Scholar, November 2026

SELECTED EXTERNAL SERVICE

- **Editorial Board Member**, Scientific Reports [SCIE, Q1, Top 15%], Springer Nature, 2024–
- **Associate Editor**, Journal of Computational Design and Engineering [SCIE, Q1, Top 5%], Oxford Univ. Press, 2022–
- **Associate Editor**, Architectural Science Review [A&HCI, Q1, Top 3%], Taylor & Francis, 2026–
- **센터장**, AI도시연구센터, 한국도시설계학회, 2026–

01 Research interests

Future Cities | Human-Space Interaction | AI & Data-driven Architecture | VR/AR/Digital Twin

Architecture for Future Mobility (Robot, Autonomous Driving, Drones, UAM)

02 Academic qualifications

University of Cambridge · Cambridge, UK — November 2015

PhD in Architecture

'Dissertation title: Stochastic Space-use Prediction in light of Spatial Choice Behaviour: Modelling Space Preference of Work-related Activities'

Stanford University · Stanford, CA — June 2011

MS in Sustainable Design and Construction

Korea University · Seoul, Korea — August 2009

BEng in Architectural Engineering

03 Research and academic experience

Hanyang University · Department of Interior Architecture Design — September 2018 – August 2021

Assistant Professor — Seoul, Korea

The Hong Kong Polytechnic University · Department of Building Services Engineering — November 2015 – August 2018

Assistant Professor — Hong Kong

Nanyang Technological University · Nanyang Centre for Underground Space — March 2015 – July 2015

Research Associate — Singapore

City University of Hong Kong · Department of Architecture and Civil Engineering — December 2013 – August 2014

Graduate teaching assistant — Hong Kong

Stanford University · P5BL Lab, Department of Civil and Environmental Engineering — September 2010 - January 2011

Research assistant — Stanford, CA

Stanford University · Department of Sustainability and Energy Management — December 2009 – June 2010

Research assistant — Stanford, CA

04 Refereed journals

62 international · 13 domestic

INTERNATIONAL

62 Song, Y., Jang, J., Han, G., Lee, J., and **Cha, S.** (Corresponding author), "A Computational Framework for Integrating Activity-Based Space Utilization Optimization and Office Layout Generation," Journal of Computational Design and Engineering, Oxford University Press, qwag103, 2026 [SCIE, Q1, 6.2%].

61 Ma, J., Chung, D., Seol, H., Ryu, Y., and **Cha, S.** (Corresponding author), "Students' responses to lighting CCT and wall color: A cross-cultural immersive virtual reality study," Building and Environment, Elsevier, 308, 115536, 2027 [SCIE, Q1, 4.01%].

60 Seol, H., Yang, J., Jang, J., Choi, D., Han, G. (Corresponding author), and **Cha, S.**, "Development of a Physical Security Risk Matrix Integrating Heterogeneous Sensor Data and Spatiotemporal Context: Expert-Derived Parameters and Scenario-Based Validation," Architectural Research, Architectural Institute of Korea, 28(1), 28, 2026 [KCI].

59 Cho, K., Kang, J., Han, G., and **Cha, S.**(Corresponding author), "Personalizing Spatial Configuration and User Responses in Virtual Reality Workspaces," Architectural Science Review, Taylor & Francis, 1-14, 2026 [A&HCI, Q1, 0.55%].

58 **Cha, S.**, "Guest editorial: Revolutionizing workplace efficiency with VR/AR, IoT and AI: future office innovations," Journal of Corporate Real Estate, Emerald, in press, 2026 [ESCI].

57 Cho, K., Lee, S., and **Cha, S.**(Corresponding author), "Implications of User-Controlled Architectural Design on Spatial Experience in Virtual Reality Workspaces," Journal of Corporate Real Estate, Emerald, 1-25, 2026, doi:10.1108/JCRE-12-2025-0080 [ESCI].

56 Jang, J. and **Cha, S.**(Corresponding author), "Context-integrated complex activity recognition with sector-level location encoding in residential environments," Advanced Engineering Informatics, Elsevier, 76, 105043, 2026 [SCIE, Q1, 2.0%].

55 Jung, K., Cho, K., Choi, H., Bae, S., Chun, S., and **Cha, S.**(Corresponding author), "Virtual Reality Transition to Underground: Human Responses across Sequential Spatial Transitions," Scientific Reports, Springer Nature, 16(1), 23245, 2026 [SCIE, Q1, 18%].

54 Han, G., Rhee, J., Park, A., Lee, K., and **Cha, S.**(Corresponding author), "Individual route choice and decision responses in fire evacuation scenarios using immersive virtual simulations," Developments in the Built Environment, Elsevier, 26, 100907, 2026 [SCIE, Q1, 3.2%].

53 Cho, K., Han, G., Shin, J., and **Cha, S.**(Corresponding author), "The Role of Design Personalization in Enhancing Knowledge Workers' Experience in Virtual Reality Workspaces," Virtual Reality, Springer Nature, 30(1), 42, 2026 [SCIE, Q1, 11.2%].

52 Chun, S., Jung, K., Won, H., and **Cha, S.**(Corresponding author), "Impact of Physical Environmental Factors on Mental Health in the Hospital: A Comprehensive Review," Indoor and Built Environment, Sage, 35(2), 163-192, 2026 [SCIE, Q2, 35.3%].

51 Koo, C., Chun, S., Han, S., **Cha, S.**(Corresponding author), Lee, M., and Hong, T., "Gaps between observed and perceived indoor environmental quality: An integrated assessment in multiple university library spaces," Journal of Librarianship and Information Science, Sage, 58(3), 1583-1598, 2026 [SSCI, Q2, 35.8%].

50 Luo, Y., Hasanzadeh, S., Seo, J., and **Cha, S.**, "Unraveling neural patterns across situational awareness levels on hazard recognition behaviors: a fNIRS study," Advanced Engineering Informatics, Elsevier, 68, Part A, 103628, 2025 [SCIE, Q1, 2.0%].

49 Lee, J., Kim, Y., Shin, E., Choo, S., and **Cha, S.**(Corresponding author), "An AI-assisted Approach for Creating and Archiving Interior Design References using 360-degree Panoramic Images," Architectural Science Review, Taylor & Francis, 68(6), 506-518, 2025 [A&HCI, Q1, 0.55%].

48 Luo, Y., Abbas, A., Seo, J., Ahn, S., and **Cha, S.**, "Understanding Hazard Recognition Behaviors through Situational Awareness Assessment in Virtual Construction Environments," Journal of Management in Engineering, ASCE, 41(4), 04025017, 2025 [SCIE, Q1, 4.0%].

47 Shi, M., Seo, J., **Cha, S.**, Xiao, B., and Chi, H., "Generative AI-powered architectural exterior conceptual design based on the design intent," Journal of Computational Design and Engineering, Oxford University Press, 11(5), 125-142, 2024 [SCIE, Q1, 11.5%].

46 Lee, J., Yoo, Y., and **Cha, S.** (Corresponding author), "Generative Early Architectural Visualizations: Incorporating Architect's Style-trained Models," Journal of Computational Design and Engineering, Oxford University Press, 11(5), 40-59, 2024 [SCIE, Q1, 11.5%].

45 Lee, J., Jeong, H., Kim, Y. and **Cha, S.** (Corresponding author), "Creating Spatial Visualizations using Fine-tuned Interior Design Style Models Informed by User Preferences," Advanced Engineering Informatics, Elsevier, 62, Part B, 102686, 2024 [SCIE, Q1, 2.0%].

44 Cho, K., and **Cha, S.**, Immersive Computing: Perspectives on Spatial Design Strategies for Individual Virtual Reality Workspace Platforms, Archives of Design Research, 37(3), 105-117, 2024 [Scopus].

43 Hong, S., Jang, E., Cho, J., Lee, J., Rhee, J., Lee, H., Lee, M., **Cha, S.**, Koo, C., Baik, O., and Heo, Y., A living lab to develop smart home services for the residential welfare of older adults, Technology in Society, Elsevier, 77, 102577, 2024 [SSCI, Q1, 0.5%].

42 Lee, J., **Cha, S.**, Hong, T., and Koo, C., Empirical investigation of occupant-centric thermal comfort in hotel guestrooms, Renewable and Sustainable Energy Reviews, Elsevier, 189, Part B, 114046, 2024 [SCIE, Q1, 3.3%].

41 Hwang, K., Kim, I., Kim, J., and **Cha, S.**, Client-engaged Collaborative Pre-Design Framework for Modular Housing, Automation in Construction, Elsevier, 156, 105123 2023 [SCIE, Q1, 1.1%].

40 Luo, Y., Ahn, S., Abbas, A., Seo, J., **Cha, S.** and Kim, J., "Investigating the Impact of Scenario and Interaction Fidelity on Training Experience When Designing Immersive Virtual Reality-based Construction Safety Training," Developments in the Built Environment, Elsevier, 16, 100223, 2023 [SCIE, Q1, 3.2%].

39 Ma, J., Erdogmus, E., and Cha, S (Corresponding author), "Integration of a choice modeling approach with immersive virtual environments for accurate space utilization prediction," Journal of Building Engineering, Elsevier, 76, 107126, 2023 [SCIE, Q1, 9.0%].

38 Lee, J., Cho, K., Choi, H., Choi, S., Kim, S. and **Cha, S.** (Corresponding author), “High-level implementable methods for automated building code compliance checking,” Developments in the Built Environment, Elsevier, 15, 100174, 2023 [SCIE, Q1, 3.2%].

37 Rhee, J., Schermer, B., and **Cha, S.** (Corresponding author), “Effects of indoor vegetation density on human well-being for a healthy built environment,” Developments in the Built Environment, Elsevier, 14, 100172, 2023 [SCIE, Q1, 3.2%].

36 **Cha, S.**, Ma, J., Seo, J., Kim, J., and Han, S., “Empirical comparison of spatial experience between photo-based IVE and real space,” Architectural Science Review, Taylor & Francis, 66(1), 1-16, 2023 [A&HCI, Q1, 0.55%].

35 Rhee, J., Ma, J., Seo, J., and **Cha, S.** (Corresponding author), “Review of Applications and User Perceptions of Smart Home Technology for Health and Environmental Monitoring,” Journal of Computational Design and Engineering, Oxford University Press, 9(3), 857–889, 2022 [SCIE, Q1, 9.44%].

34 Ma, J., Lee, J. and **Cha, S.** (Corresponding author), "Effects of lighting CCT and illuminance on visual perception and task performance in immersive virtual environments," Building and Environment, Elsevier, 209, 108678, 2022 [SCIE, Q1, 4.01%]

33 Gassar, A., and **Cha, S.** (Corresponding author), " Feasibility assessment of adopting distributed solar photovoltaics and phase change materials in multifamily residential buildings,” Sustainable Production and Consumption, Elsevier, 29, 507-528, 2022 [SSCI, Q1, 23.6%].

32 Jo, T., Ma, J. and **Cha, S.** (Corresponding author), "Elderly Perception on the Internet of things-based Integrated Smart-Home System," Sensors, MDPI, 21(4), 1284, 2021 [SCIE, Q1, 21.09%].

31 Gassar, A., and **Cha, S.** (Corresponding author), "Review of geographic information systems-based rooftop solar photovoltaic potential estimation approaches at urban scales,” Applied Energy, Elsevier, 291, 116817, 2021 [SCIE, Q1, 3.85%].

30 Ma, J. and **Cha, S.** (Corresponding author), "A user-specific activity pattern generation framework for evidence-based ABW planning," Building and Environment, Elsevier, 189, 107519, 2021 [SCIE, Q1, 4.01%]

29 Jang, J., Ahn, S., **Cha, S.**, Cho, K., Koo, C. and Kim, T., “Toward Productivity in Future Construction: Mapping Knowledge and Finding Insights for Achieving Successful Offsite Construction Projects,” Journal of Computational Design and Engineering, Oxford University Press, 8(1), 1-14, 2021 [SCIE, Q1, 9.44%].

28 Gassar, A., Koo, C., Kim, T. and **Cha, S.** (Corresponding author), " Performance Optimization Studies on Heating, Cooling and Lighting Energy Systems of Buildings during the Design Stage: A Review,” Sustainability, MDPI, 13, 9815, 2021 [SCIE, Q2, 45.07%].

27 Ma, J. and **Cha, S.** (Corresponding author), “A human data-driven interaction estimation using IoT sensors for workplace design,” Automation in Construction, Elsevier, 119, 103352, 2020 [SCIE, Q1, 1.09%].

26 **Cha, S.**, Zhang, S., and Kim, T., “Effects of Interior Color Schemes on Emotion, Task Performance, and Heart Rate in Immersive Virtual Environments,” Journal of Interior Design, Wiley, 45(4), 51-65, 2020 [A&HCI, Q1, 8.24%].

25 Gassar, A., and **Cha, S.** (Corresponding author), "Energy prediction techniques for large-scale buildings towards a sustainable built environment: A review,” Energy and Buildings, Elsevier, 224, 110238, 2020 [SCI, Q1, 6.2%].

24 Li, W., Koo, C., Hong, T., Oh, J., **Cha, S.** and Wang, S., "A novel operation approach for the energy efficiency improvement of the HVAC system in office spaces through real-time big data analytics," Renewable and Sustainable Energy Reviews, Elsevier, 127, 109885, 2020 [SCIE, Q1, 1.14%].

23 **Cha, S.** and Kim, T., “The role of space attributes in space-choice behaviour and satisfaction in an academic library,” Journal of Librarianship and Information Science, Sage, 52(2), 399-409, 2020 [SSCI, Q3, 54.71%].

22 Abbas, A., Choi, M., Seo, J., **Cha, S.**, and Li, H., "Effectiveness of Immersive Virtual Reality-based Communication for Construction Projects," KSCE Journal of Civil Engineering, KSCE, 23(12), 4972-4983, 2019 [SCIE, Q3, 68.98%].

21 **Cha, S.**, Koo, C., Kim, T., and Hong, T., "Spatial perception of ceiling height and type variation in immersive virtual environments,” Building and Environment, Elsevier, 163, 106285, 2019 [SCI, Q1, 4.01%].

20 Kim, T. and **Cha, S.** (Corresponding author), “Empirical validation of the spatial-choice modeling approach to user simulation,” Architectural Science Review, Taylor & Francis, 62(4), 313-322, 2019 [A&HCI, Q1, 0.55%].

19 Chen, H., **Cha, S.**, and Kim, T., “A framework for group activity detection and recognition using smartphone sensors and beacons,” Building and Environment, Elsevier, 158, 205-216, 2019 [SCI, Q1, 4.01%].

18 Zhang, S., Lu, L., Dong, C., and **Cha, S.**, “Performance evaluation of a double-pipe heat exchanger fitted with self-rotating twisted tapes,” Applied Thermal Engineering, Elsevier, 158, 113770, 2019 [SCIE, Q1, 9.17%].

17 Baek, S., and **Cha, S.** (Corresponding author), “The trilateration-based BLE Beacon system for analyzing user-identified space usage of New Ways of Working offices,” Building and Environment, Elsevier, 149, 264-274, 2019 [SCI, Q1, 4.01%].

16 Li, W., Koo, C., **Cha, S.**, Lai, J., and Lee, J., “A conceptual framework for the real-time monitoring and diagnostic system for the optimal operation of smart building: A case study in Hotel ICON of Hong Kong,” Energy Procedia, Elsevier, 158, 3107-3112, 2019 [Scopus, Q1, 23.08%].

15 Koo, C., Li, W., **Cha, S.** (Corresponding author), Zhang, S., "A novel estimation approach for the solar radiation potential with its complex spatial pattern via machine-learning techniques," Renewable Energy, Elsevier, 133, 575-592, 2019 [SCIE, Q1, 13.60%].

14 Zhang, S., Lu, L., Dong, C., and **Cha, S.**, “Thermal characteristics of perforated self-rotating twisted tapes in a double-pipe heat exchanger,” Applied Thermal Engineering, Elsevier, 162, 114296, 2019 [SCIE, Q1, 9.17%].

13 Li, W., Koo, C., **Cha, S.**, Hong, T., and Oh, J., "A novel real-time method for HVAC system operation to improve indoor environmental quality in meeting rooms," Building and Environment, Elsevier, 144, 365-385, 2018 [SCI, Q1, 4.01%].

12 **Cha, S.**, Seo J., Baek, S., and Koo, C., "Towards a well-planned, activity-based work environment: Automated recognition of office activities using accelerometers," Building and Environment, Elsevier, 144, 86-93, 2018 [SCI, Q1, 4.01%].

11 **Cha, S.**, Steemers, K., and Kim, T., "Modeling space preferences for accurate occupancy prediction during the design phase," Automation in Construction, Elsevier, 93, 135-147, 2018 [SCIE, Q1, 1.09%].

10 Oh, J., Koo, C., Hong, T. and **Cha, S.**, "An integrated model for estimating the techno-economic performance of the distributed solar generation system on building façades: Focused on energy demand and supply," Applied Energy, Elsevier, 228, 1071-1090, 2018 [SCI, Q1, 3.85%].

9 Kim, J., **Cha, S.** (Corresponding author), Koo, C. and Tang, S., "The effects of indoor plants and artificial windows in an underground environment," Building and Environment, Elsevier, 138, 53-62, 2018 [SCI, Q1, 4.01%].

8 Kim, T., **Cha, S.** and Kim, Y., "Space choice, rejection, and satisfaction in university campus," Indoor and Built Environment, Sage, 27 (2), 233-243, 2018 [SCIE, Q2, 42.12%]

7 **Cha, S.**, Steemers, K., and Kim, T., "Modelling building users' space preferences for group work: A discrete choice experiment," Architectural Science Review, Taylor & Francis, 60(6), 460-471, 2017 [A&HCI, Q1, 0.55%].

6 Koo, C., Jin, R., Li, B., **Cha, S.**, and Wanatowski, D., "Case-based reasoning approach to estimating the strength of sustainable Concrete," Computers and Concrete. Techno-press, 20 (6), 645-654, 2017 [SCIE, Q1, 20.07%].

5 Kim, T., **Cha, S.** and Kim, Y., "A framework for evaluating user involvement methods in architectural, engineering, and construction projects," Architectural Science Review, Taylor & Francis, 59(2), 136-147, 2016 [A&HCI, Q1, 0.55%].

4 Kim, T., Kim, Y. **Cha, S.** (Corresponding author) and Fischer, M., "Automated updating of space design requirements connecting user activities and space types," Automation in Construction, Elsevier, 50, 102-110, 2015 [SCIE, Q1, 1.09%].

3 **Cha, S.** and Kim, T., "What matters for students' use of physical library space?," Journal of Academic Librarianship, Elsevier, 41(3), 274-279, 2015 [SSCI , Q3, 61.76%].

2 **Cha, S.** and Kim, T., "A conceptual framework of an agent-based space-use prediction simulation system," Journal of Construction Engineering and Project Management, Korea Institute of Construction Engineering and Management, 5(4), 12-15, 2015.

1 **Cha, S.** and Kim, T., "A conceptual framework for developing indoor spatial choice model," International Journal of Engineering and Technology, IACSIT Press, 6(5), 386-391, 2014.

DOMESTIC

13 Kang, J., Ryu, Y., Ji, J., Eum, Y., and **Cha, S.** (Corresponding author), “연령 관련 길찾기 특성을 고려한 대화형 내비게이션의 적응형 정보제시 프레임워크,” Journal of the Korean Institute of Spatial Design, 2026 [KCI].

12 Seol, H., Choi, H., Kang, J., and **Cha, S.** (Corresponding author), “디지털 3D 공간의 조명 설계 의사결정 지원을 위한 객체-광원 기여 관계 기반 질의 가능한 씬 표현,” Journal of the Korean Institute of Spatial Design, 21(7), 785-798, 2026 [KCI].

11 Bae, S., Bae, S., Kim, H., and **Cha, S.** (Corresponding author), “학교 유휴교실 기반 XR 박물관 프레임워크: 문화접근성 격차 완화를 위한 구축 전략,” Journal of Digital Contents Society, 2026 [KCI].

10 Kim, D., Eum, Y., Yoon, B., Lee, H., Kim, S., Lim, Y., Baeck, M., Kim, M., Jung, D., Jeong, S., **Cha, S.**, Kim, S., and Woo, W., “메타객체 생성/관리 및 실시간 제스처 반응형 멀티모달 피드백을 위한 지능형 XR 플랫폼,” Journal of KIISE, 53(6), 476-488, 2026 [KCI].

9 Han, G., Song, Y., Han, J., and **Cha, S.** (Corresponding author), “로봇 친화형 건축 환경의 인간-로봇 공존 성능평가를 위한 서비스수준(LOS) 지표 개발,” Journal of the Architectural Institute of Korea, 42(5), 71-82, 2026 [KCI, SCOPUS].

8 Song, Y., Jang, J. and **Cha, S.** (Corresponding author), “공간 사용률 기반 오피스 실 생성 자동화 방법론 개발,” Journal of KIBIM, 14(3), 1-10, 2024 [KCI].

7 Chun, S. and **Cha, S.** (Corresponding author), “효율적인 건축디자인을 위한 가상현실을 활용한 공간경험연구,” Journal of KIBIM, 14(1), 1-10, 2024 [KCI].

6 Chun, S. and **Cha, S.** (Corresponding author), “메타버스의 경험과 기술을 활용한 건축설계 프로세스의 적용가능성에 관한 연구,” Journal of KIBIM, Korean Institute of Building Information Modeling, 13(2), 16-28, 2023 [KCI].

5 Rhee, J. and **Cha, S.** (Corresponding author), “메타버스에서 나타나는 주거의 의미, 유형 및 특성 연구,” LHI Journal, 13(4), 91-103, 2022.

4 Cho, K., Eum, Y., Choi, H., Lee, S., and **Cha, S.** (Corresponding author), “가상 업무 공간의 디자인 현황 분석 및 향후 디자인 방법에 관한 제언 - 12개의 현행 사례의 비교분석을 중심으로 - ,” Journal of KIBIM, 12(4), 80-92, 2022 [KCI].

3 Rhee, J. and **Cha, S.** (Corresponding author), “사례연구를 통한 메타버스 건축디자인에 대한 고찰,” Journal of the Architectural Institute of Korea, 38(7), 69-80, 2022 [KCI, SCOPUS].

2 Rhee, J. and **Cha, S.** (Corresponding author), “노인을 위한 스마트 홈 시스템 장기 모니터링 실증 연구,” Journal of KIBIM, Korean Institute of Building Information Modeling, 11(3), 75-90, 2021 [KCI].

1 Ma, J. and **Cha, S.** (Corresponding author), “NWW 오피스 계획을 위한 BLE비컨 기반 공간사용정보 추정,” Korean Journal of Computational Design and Engineering, 25(3), 227–235, 2020 [KCI].

05 Books and book chapters

BOOKS

– 『미래 건축 설계 총론: 데이터, 인공지능, 새로운 이용 주체』, 시공문화사, 2026

BOOK CHAPTERS

- “메타버스에서 나는 어떤 집에 살까, 메타버스와 건축디자인,” 포스트 메타버스, 포르체, 2021

06 Refereed conferences

51 international · 48 domestic

INTERNATIONAL

51 Yang, J., Jang, J., Seol, H., Kwon, D., Choi, D., Cheon, H., Han, G., and **Cha, S.**, “A Standard-Interworking Framework for Context-Aware Risk Assessment in Urban Physical Security”, 2026 IEEE 36th International Telecommunication Networks and Applications Conference (ITNAC), Melbourne, Australia, 25-27 November 2026.

50 Ji, J., and **Cha, S.**, “Diagnosing Walking Resistance in Age-Friendly Seoul with GeoAI”, The 15th International Symposium on Architectural Interchanges in Asia (ISAIA), Daejeon, Korea, 19-22 October 2026.

49 Ryu, N., Choi, H., Lee, S., and **Cha, S.**, “Generating Shopper Feedback for Pop-Up Store Planning”, The 15th International Symposium on Architectural Interchanges in Asia (ISAIA), Daejeon, Korea, 19-22 October 2026.

48 Yang, J., and **Cha, S.**, “Smart Building-Mediated Mobility Hub (SBMMH): A Coordination Framework”, The 15th International Symposium on Architectural Interchanges in Asia (ISAIA), Daejeon, Korea, 19-22 October 2026.

47 Lee, S., Ryu, N., Kang, J., and **Cha, S.**, “Levels of Detail in BIM-based Egocentric Spatial Perception for Generative Agent Wayfinding”, The International Conference of Sociedad Iberoamericana de Gráfica Digital (SIGraDi), Santiago, Chile, 18-20 November, 2026.

46 Choo, S., Kim, Y., and **Cha, S.**, “Interaction as an Adaptive Design Variable in AI-Mediated XR Environments”, The International Conference of Sociedad Iberoamericana de Gráfica Digital (SIGraDi), Santiago, Chile, 18-20 November, 2026.

45 Ji, J., Choi, H., and **Cha, S.**, “Revealing Hidden Walking Burdens: A GeoAI-Based Micro-Scale Spatial Resistance Framework for Age-Friendly Urban Communities”, The International Conference of Sociedad Iberoamericana de Gráfica Digital (SIGraDi), Santiago, Chile, 18-20 November, 2026.

44 Kim, Y., Choo, S., Eum, Y., Jeon, D., and **Cha, S.**, “Designing an Augmented Reality-Based Explanation Interface for Understanding Multi-Device Automation Changes in Smart Homes”, The International Conference of Sociedad Iberoamericana de Gráfica Digital (SIGraDi), Santiago, Chile, 18-20 November, 2026.

43 Cho, K., Kang, J., Eum, Y., and **Cha, S.**, “How Unreal Should a Workspace Be? A Conceptual Framework for Unrealistic Spatial Design in Virtual Reality Workspaces”, The 5th Transdisciplinary Workplace Research Conference, Zurich, Switzerland, 2-5 September 2026.

42 Jeon, D., Eum, Y., Kim, Y., and **Cha, S.**, “Designing Reality-to-Virtual Transitions: Conceptualizing Cognitive Mechanisms Beyond Visual Form”, Design Computing and Cognition'26, Paris, France, 8–10 July 2026.

41 Chung,D., Bae, S., Han, G., and **Cha,S.**, “The Effect of Artwork Size on Visitor Attention in Museum Curatorial Arrangement”, Design Computing and Cognition'26, Paris, France, 8–10 July 2026.

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07 Non-refereed publications

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- Lee, J. and **Cha. S.**, “벽면녹화 기법 및 적용 사례소개,” Korean Institute of Architectural Sustainable Environment and Building Systems, 15(2), 2021
- Ma, J. and **Cha. S.**, “Research Trend of Space Use Data Estimation for Applying NWW Office Planning,” Korea Institute of Building Information Modelling (KIBIM), 9(2), 16-22, 2019
- Baek, S. and **Cha, S.**, “Research Trends in measuring occupant behavior towards for the application of activity-based working environment,” Construction Engineering and Management, Korea Institute of Construction Engineering and Management (KICEM), 18(6), 53-55, 2017.
- **Cha, S.** and Kim, T., “Global Research Trends in Prediction of Occupancy schedules for Building Simulations,” Construction Engineering and Management, Korea Institute of Construction Engineering and Management (KICEM), 15(5), 52-54, 2014.

08 Patents

- Bae, S., Eum, Y., Jang, J., Kim, Y., and Jeon, D., "System and Method for Providing Emotion-Based Adaptive Spatial Content," Korean Patent Application No. 10-2025-0143692 (Applied 2025).
- Kim, Y., Lee, H., Noh, S., **Cha, S.**, Choi, H., and Cho, K., "Virtual Underground Space Navigation Environment System," Korean Patent No. 10-2823126 (Registered: June 17, 2025).

09 Exhibitions

- Kim, K. and **Cha, S.**, “Seasonal Atrium,” 2020 International Invitation Exhibition, Korean Institute of Interior Design, Nexus Seoul Gallery, 7 November, 2020.

10 Research projects (Ongoing)

5 projects

- 공간과 행동, **PI**, 대우재단, 2027-28 (KRW20,000,000).
- 미래 공간 혁신을 위한 AI 기반 반응-전환형 공간 기술 개발 연구, **PI**, National Research Foundation, 2025-28 (KRW300,000,000).
- 로봇 친화형 건축물 설계·시공 및 운영·관리 핵심기술 개발, **Co-I**, Korea Agency for Infrastructure Technology Advancement, 2025-29 (KRW18,000,000,000).
- 가상명상환경에서 주의모델 기반 공간 디자인 최적화 알고리즘 개발, **PI**, 카이스트 명상과학연구소, 2025-27 (KRW50,000,000).
- 다중감각 가상현실 기반 시공 전 공간 평가 시스템 개발, **PI**, National Research Foundation, 2023-28 (KRW600,000,000).

11 Researchers' Grants (Ongoing)

14 grants

- Embodied Agent-based Building Simulation을 위한 안경형 센서 기반 일인칭 행동 데이터 임베딩 시스템 개발, National Research Foundation, 2026-28 (KRW50,000,000).
- BIM 기반 멀티모달 에이전트 프레임워크를 활용한 오피스 평면 리디자인 자동화 기술 개발, National Research Foundation, 2026-28 (KRW50,000,000).
- UAM-지상 모빌리티 환승을 위한 시공간 동기화 기반 지능형 운영 프레임워크 연구, National Research Foundation, 2026-27 (KRW12,000,000).
- 가상현실 내 진입 주도성에 따른 공간 탐색 전략 분석, National Research Foundation, 2026-27 (KRW12,000,000).
- 생성형 AI 기반 조명 디자인에서 텍스트 입력 구조화 방식이 창작 경험과 의도 충실도에 미치는 영향, National Research Foundation, 2026-27 (KRW12,000,000).
- 지식 근로자의 업무 스트레스 완화를 위한 가상현실 기반 공간 디자인 개인화의 효용에 관한 연구, National Research Foundation, 2026-27 (KRW20,000,000).
- AI 기반 차세대 보안 제품 상용화 지원_Type1-2 AI 기반 물리보안 통합관제 시스템 개발, Korea Internet and Security Agency, 2026 (KRW280,000,000).
- 생성형 섹터 단위 공간 분할 및 멀티모달 센서 융합 기반 주거 공간 내 복잡한 인간 활동 인식 연구, National Research Foundation, 2025-27 (KRW50,000,000).
- LoRA 적용 대형 언어 모델 기반 거주자 특성 반영 공간 행동 데이터 생성 연구, National Research Foundation, 2025-27 (KRW50,000,000).

- 생성형 알고리즘 기반 가상-현실공간 융합형 건축 설계 최적화 프로세스 제안, National Research Foundation, 2025-28 (KRW300,000,000).
- 반응형 공간 콘텐츠를 통한 인간 중심 공간 디자인 연구, National Research Foundation, 2025-27 (KRW40,000,000).
- 다중이용시설에서 군중행동 및 공간환경을 기반한 군중 밀집 안전에 관한 연구, National Research Foundation, 2024-29 (KRW200,000,000).
- AI 기반 XR 디지털트윈 통합 피난 시뮬레이터 개발, National Research Foundation, 2024-29 (KRW500,000,000).
- 메타버스를 활용한 건축디자이너의 협업을 위한 디자인 프로세스 개발, National Research Foundation, 2022-27 (KRW200,000,000).

12 Research projects (Completed)

44 projects

- LLM을 활용한 고령 친화형 음성 기반 3D 객체 조작 VR 인터페이스 개발, National Research Foundation, 2025-26 (KRW12,000,000).
- 자서적 연속성과 동반 존재감 향상을 위한 XR 기반 기억 시각화 인터페이스의 인터랙션 시퀀스 분석, National Research Foundation, 2025-26 (KRW12,000,000).
- 인간-공간 반응 정량화를 통한 전시공간 디자인 평가 프레임워크, National Research Foundation, 2025-26 (KRW12,000,000).
- 생성형 AI를 활용한 공간 사용률 및 만족도 예측 기반 평면도 자동 생성 연구, National Research Foundation, 2024-26 (KRW50,000,000).
- 데이터 기반 인간 중심 반응형 주거환경 설계, **PI**, Korea Advanced Institute of Science and Technology, 2025-26 (KRW6,800,000).
- AI 스마트빌딩 테스트베드 플랫폼 건축기술 개발, **PI**, Korea Agency for Infrastructure Technology Advancement, 2025-26 (KRW80,000,000).
- 미래오피스공간계획론, **PI**, National Research Foundation, 2024-26 (KRW20,000,000).
- 삼성물산 래미안 미래 상품디자인 비전과 전략 종합 연구, **Co-I**, 삼성물산, 2025-26 (KRW100,000,000).
- 글로벌 문화복지 실현을 위한 가상현실 국제 지식 자산 아카이브 구축에 관한 NCP 활동 제안, **PI**, National Research Foundation, 2025-26 (KRW25,000,000).
- Generative Agent Simulation 기반 국제 표준 건축 설계 네트워크 구축, **PI**, National Research Foundation, 2024-25 (KRW20,000,000).
- 인공지능 기반의 건축설계 자동화 기술 개발, **Co-I**, Korea Agency for Infrastructure Technology Advancement, 2021-25 (KRW279,656,000).
- 초시공간 교류를 위한 AR-AI-인지-건축 융합연구, **Co-I**, National Research Foundation, 2024-28 (KRW1,800,000,000).
- 메타버스 건축 공간 디자인 프레임워크, **PI**, National Research Foundation, 2022-25 (KRW60,000,000).
- 공간 미디어 경험 연구, **PI**, 삼성전자 산학협력과제, 2023-25 (KRW200,000,000)

- 사용자 경험 기반 메타버스 업무 공간 디자인 프레임워크 구축 연구, National Research Foundation, 2023-25 (KRW40,000,000).
- 가상업무경험 향상을 위한 녹시율의 영향 분석, National Research Foundation, 2024-25 (KRW10,000,000).
- 환경에 적응하는 실시간 XR 인터페이스 기술, **Co-I**, Institute for Information and Communications Technology Planning and Evaluation(IITP), 2024-26 (KRW4,700,000,000).
- Iot/VR/AR을 활용한 최적 인텔리전트 공간 디자인 설계, **PI**, Korea Advanced Institute of Science and Technology, 2021-24 (KRW120,000,000).
- 가상/증강현실과 공간디자인 결합을 통한 지하도시 인간 장기거주성 공간설계 기술개발, **PI**, Ministry of Science and ICT, 2022-23 (KRW175,000,000).
- 미래 도시 공간 변화 전망 선행연구, **PI**, LG경영개발원 (LG공간연구소), 2023 (KRW4,000,000).
- LG유플러스 메타버스 가상오피스 UX/UI 기획, LG U+, 2022 (KRW20,000,000).
- 데이터기반 오피스 계획을 위한 IoT센서·인공지능 적용 자동 활동패턴 정보 생성 시스템, **PI**, National Research Foundation, 2020-23 (KRW137,500,000).
- 가상 국립 도서관 구축 및 서비스 운영 방안 연구, **PI**, National Library of Korea, Ministry of Culture, Sports and Tourism, 2022 (KRW92,000,000).
- 창의적 협업을 위한 메타버스 가상 오피스 공간 디자인 연구, **PI**, Creative Challenge Program, 2022 (KRW20,000,000).
- 확장형 리빙랩을 통한 노인 맞춤형 주거복지 통합서비스 개발, **Co-I**, National Research Foundation, 2019-22 (KRW450,000,000).
- 몰입형 가상환경과 초이스 모델링이론 기반 공간선호도 모델링, **PI**, National Research Foundation, 2019-22 (KRW60,000,000).
- 예술분야 생태계 재활성화를 위한 온라인 VR 전시공간 제작 플랫폼, **PI**, Korea Arts Management Service, 2021-22 (KRW49,000,000).
- 사용자 공간 경험 평가를 위한 몰입형 가상 환경 활용 연구, **PI**, Hanyang University, 2021-22 (KRW15,000,000).
- 최적 공간 계획을 위한 인공지능 기반 활동인지 프레임워크 개발, **PI**, Hanyang University 2020-22 (KRW52,000,000).
- 빅데이터 기반 고객 맞춤형 온라인 VR 갤러리 플랫폼 '갤러리브이에어', **PI**, 중소벤처기업부, 2020-21 (KRW48,000,000).
- 건축 디자인 리뷰 단계에서 촉각과 후각을 접목한 가상현실 공간 경험, **PI**, Hanyang University, 2020-21 (KRW15,000,000).
- Smart 오피스를 구현을 위한 IoT 기반 건물 사용자 행동 데이터 측정·예측 시스템 개발, PI, National Research Foundation, 2018-20 (KRW60,000,000).
- HMD 기반 몰입형 가상현실 (Immersive Virtual Environment)을 이용한 엔드 유저 (End-user)의 건축 디자인 참여 가능성 검토, **PI**, Hanyang University, 2018-19 (KRW20,000,000).
- Interdisciplinary and Collaborative Learning through a BIM-based Immersive Virtual Environment in AEC Education, **External Co-I**, University Grants Committee, 2017-19, (HK$ 492,600).

- The Effectiveness of Interactive 3D Virtual Environments for Pre-Experience of Hotel Rooms, **External Co-I**, Hotel ICON R&D, 2017-19, (HK$ 49,749).
- Implementation of Food Waste Collection System for Catering Services, **External Co-I**, Recycling Fund, Hong Kong Productivity Council, 2018 – 2020, (HK$ 2,709,050).
- A Real-Time Monitoring and Diagnostics for energy efficiency and indoor environmental quality in Hotel ICON, **External Co-I**, Hotel ICON R&D, 2018-19, (HK$ 50,000).
- Integration of discrete-choice modeling theory with immersive virtual environments for modeling space preferences toward more accurate space utilization prediction, **PI**, Early Career Scheme (ECS), Research Grants Council (RGC), 2018-20, (HK$466,667).
- Development of Internet of Things (IoT) - based Multi-Function Smart Window by Integrating Solar PV Blind and Active Ventilation System toward Zero Energy Building, **External Co-I**, Ministry of Land, Infrastructure and Transport (South Korea), 2017-18, (KRW 70,000,000).
- Understanding Activity-Based Working: A Framework for Integrating Indoor Positioning System and Automated Office Activity Recognition, **PI**, Internal grant, The Hong Kong Polytechnic University, 2017-19 (HK$105,000).
- An Experimental Investigation of the Energy Saving Potential by Implementing the Real-Time Sensor and Actuator: Focused on the Indoor Environmental Quality and Smart Thermostat, **Co-I**, The Hong Kong Polytechnic University, 2017-18 (HK$105,000).
- Development of an Agent-Based Space-Use Prediction Simulation System, **PI**, Start-Up Grant for New Faculty, The Hong Kong Polytechnic University, 2016-19, (HK$500,000).
- User Preference-based Space-use Probability Generation, **PI**, Internal Grant, The Hong Kong Polytechnic University, 2016-18, (HK$500,000).
- Development of a Learning Package for Students to Appreciate the High-Performance Building Development, **Co-I**, DLTC Fund, The Hong Kong Polytechnic University, 2016-17, (HK$116,000).

13 Teaching and learning projects

- XR산업전문인력양성, **참여교수**, Korea Institute for Advancement of Technology, 2025-2030 (KRW440,000,000).
- 메타버스대학원, **참여교수**, the Institute for Information communication Technology Planning and evaluation, 2022-2027 (KRW550,000,000).
- 창의 콘텐츠 사이언스 교육연구단 (BK21 Four) [2-7차년], **Co-I**, National Research Foundation, 2020-26 (KRW500,000,000).
- Multi-Intelligent (MI) 공간재생디자인 인재양성팀(BK21 Four)[1-2차년], **참여교수**, National Research Foundation, 2020-27 (KRW2,100,000,000).
- 미래 기후 및 인구 변화 대응형 건물재생디자인 창의인재양성팀 [6-차년] (BK21 Plus), **참여교수**, National Research Foundation, 2018-2020 (KRW2,500,000,000).
- Development of a Learning Package for Students to Appreciate the High-Performance Building Development, **Co-I**, DLTC Fund, The Hong Kong Polytechnic University, 2016-17, (HK$116,000).

14 Invited talks

38 talks

- “도시에 새로운 손님이 온다”, CTSCAPE 2026, KAIST 문화기술대학원, KAIST 학술문화관, 30 Nov 2026
- “AI시대 지속가능한 전문가 되기”, 2026년 새일센터 AI 리터러시 제고교육, 공주여성새로일하기센터, 국립공주대학교, 12, 19 Nov 2026
- “건축에서 융합 연구를 한다는 것”, 건축리더십아카데미(AAL) 18기 특별강연, 대한건축학회, 27 Oct 2026
- “KAIST Research Capabilities and Horizon Europe Collaboration”, 오스트리아 연구혁신청(FFG), Vienna, Austria, 10 Sep 2026
- “유럽 R&D 혁신정책 제도 개론”, 2026년 지역R&D정책 글로벌 벤치마킹 해외연수 사전교육, 국가과학기술인력개발원(KIRD), 대덕테크비즈센터, 27 Aug 2026
- “Data-driven Analysis of Human Behavior and Emotion in Indoor Architectural Space”, 첫수융합포럼, 한국과학기술원, 10 Sep 2025
- “AI Transformation in Fashion & Beauty”, KIFT 2025 – Korea International Fashion Tech Forum, Sungjoo Foundation, 4 Sep 2025
  https://adeko.or.kr/notice/?bmode=view&idx=167442392
- “AI 기반 센싱 데이터를 활용한 건축공간 내 인간 행동 및 반응 분석”, 건축설계위원회, 대한건축학회 춘계학술대회, 25 Apr 2025
- “ABM소개 및 공간계획에 활용가능성”, 한국환경연구원, 25 Feb 2025
- “메타버스 공간 생성 기술 소개”, 건원건축, 28 June 2024
- “공간의 미래”, 지식다락방, 카이스트 과학영재교육원, 11 Mar 2024
  https://www.youtube.com/watch?v=oW-bZpnWWhs
- “Meta-Museum design and experience”, 1st KAIST-NYU Joint workshop on MetaMuseum, 11-12 December 2023
- “미래의 메타버스 공간”, 충남대학교 건축공학과, 7 Dec 2023
- “메타버스 원격 진료 공간 최적 설계 및 플랫폼 개발”, 2023 KU Medicine-KAIST 심포지움, 20 October 2023
- “Future of Metaverse in AEC industry”, The Hong Kong Polytechnic University, 13 October 2023
- “인공지능과 메타버스에 대한 이해”, 도곡중학교 학부모회, 강남서초교육지원청, 12 September 2023
- “메타버스 공간디자인”, 2023 봄학기 메타버스 콜로퀴움, KAIST 메타버스융합대학원, 1 June 2023
- “메타버스 공간디자인”, buildSMART FORUM 2023, 빌딩스마트협회, 11 Apr 2023
  https://www.ikld.kr/news/articleView.html?idxno=272359
- “미래공간으로서 메타버스”, 스마트시티 대학원 특강, 서울대학교, 11 November 2022
- “메타버스 공간디자인”, 건축학부 목요특강, 숭실대학교, 10 November 2022
- “물리공간과 가상공간 디자인”, 이화여자대학교, 9 November 2022
- “Metaverse and architecture”, The 4th ICCEPM International Seminar, 9 November 2022
- “미래공간으로서 메타버스”, 연세대학교, 4 November 2022
- “우리 일상 속 메타버스 공간 디자인”, 아티언스캠프, 대전사이언스페스티벌, 23 October 2022

- “메타버스와 도시 공간”, 융복합연구회, 한국도시설계학회, 23 August 2022.
- “메타버스 시대 건축산업의 미래”, Tech Advanced, 삼성물산, 21 April 2022.
- “Smart home for the elderly”, @TABLE, Graduate School of Science and Technology Policy, KAIST, 17 January 2022.
- “The effectiveness of photo based IVE spatial experience for hotel room tour”, IMPACT 2021, SHTM, the Hong Kong Polytechnic University, 16 December 2021.
- “The Future workplace”, 2021 Fall GSCT Colloquium, KAIST, 30 November 2021.
- “Metaverse and architectural design”, 메타버스에 대한 다양한 시선과 전망, 대전정보문화산업진흥원, 17 November 2021. https://www.youtube.com/watch?v=Rwj17_PioOY&t=177s
- “Virtual architecture and design,” Better City and Smarter Life Forum, KAIST, 17 November 2021.
- “Virtual world and architecture” 가상융합경제 활성화 포럼 기술분과 2차 세미나, 5 October, 2021. https://www.youtube.com/watch?v=qod7OMRv6QQ&t=320s
- “Human-centered space design,” Seoul National University, 24 July, 2020
- “Smart office design: New ways of working,” BuildingSmart Forum, 16 April, 2019. https://www.ikld.kr/news/articleView.html?idxno=203071
- “User-centered design and evaluation,” Korea Unversity, 4 December, 2018
- “홍콩 건설환경 및 메가 프로젝트,” 고려대학교 건설경영최고위과정, 15 May, 2018
- “User experience design and evaluation,” Chosun University, 3 January, 2018.
- “Pre-occupancy Evaluation of Building Design,” Yonsei University, 29 December, 2017

15 Media interviews

- [공간의 미래] 우수질문의 주인공, 질문다락방, 카이스트 과학영재교육원, 2024 https://www.youtube.com/watch?v=t26A1_iRF0c&t=37s
- 공간의 미래, 질문다락방, 카이스트 과학영재교육원, 2024 https://www.youtube.com/watch?v=qiarLbQeSjM
- 한림원의 창 사람들, 봄호, 139 , 32-35, 2023 https://kast.or.kr/kr/space/publication.php?bbs_data=aWR4PTIwOTkxJnN0YXJ0UGFnZT0wJmxpc3RObz0zNjkmdGFibGU9Y3NfYmJzX2RhdGEmY29kZT1tb2smc2VhcmNoX2l0ZW09JnNlYXJjaF9vcmRlcj0=||&bgu=view&cate=
- [트렌드ZIP] 메타버스 속 디자인 직업 | EP.2, DDP Seoul, Seoul Design Foundation, 2022 https://www.youtube.com/watch?v=KqoVndmTykk&t=141s
- 허물어진 물리적 장벽...메타버스 병원 시대 열리나, 메디컬타임즈, 2022 https://m.medicaltimes.com/News/NewsView.html?ID=1144923
- 위치 추적이 가능한 비컨(Beacon) 시스템으로 새로운 사무공간을 계획하다, 한양뉴스, 2019 http://www.newshyu.com/news/articleView.html?idxno=501543

16 University service

- 겸임교수, KAIST G-School, 2024-
- 겸임교수, 스마트시티센터, 한국과학기술원, 2022-
- 참여교수, 포스트메타버스연구센터, 한국과학기술원, 2022-
- 참여교수, 아트앤테크연구센터, 한국과학기술원, 2022-
- 참여교수, 조수미공연연구센터, 한국과학기술원, 2022-
- 위원(선임직), 운영위원회, 문화기술연구소, 한국과학기술원, 2026-28
- 위원, CT 학사위원회, 문화기술대학원, 한국과학기술원, 2026-
- 위원, 학사심의회, 공과대학, 한국과학기술원, 2025-27
- 책임교수, CT 브랜딩(브랜딩 지원 조교 담당), 문화기술대학원, 한국과학기술원, 2025-27
- 위원, CT비전위원회, 문화기술대학원, 한국과학기술원, 2025-
- 위원, 운영위원회, 메타버스융합대학원, 한국과학기술원, 2024-26
- 위촉입학사정관(학사과정 면접평가), 한국과학기술원, 2022-
- 새내기지도교수, 한국과학기술원, 2024-26
- 책임교수, 문화기술부전공, 한국과학기술원, 2022-24
- 위원, 카이스트브랜드위원회, 한국과학기술원, 2022-24
- 위원장, CT브랜딩위원회, 한국과학기술원, 2022-24
- 위원장, 메타버스융합대학원 학사위원회, 한국과학기술원, 2022-
- 위원, 신임교원서치위원회, 문화기술대학원, 한국과학기술원, 2023-25
- 위원, 운영위원회, 인문사회과학연구소, 한국과학기술원, 2021-23
- 위원, 교과과정위원회, 인문사회융합과학대학, 한국과학기술원, 2023-24
- 위원, 학사심의위원회, 인문사회융합과학대학, 한국과학기술원, 2021-23
- 위원, 운영위원회, 미래지하도시연구센터, 한국과학기술원, 2022-23
- Partnership committee member, Hong Kong Polytechnic University, 2015-2018
- New program planning committee member “Building Ecology Engineering”, Hong Kong Polytechnic University, 2017-2018

17 Teaching experience

UNDERGRADUATE

Smart Working Space (https://www.youtube.com/watch?v=gQ0r3KyodVU) | Architectural Modeling I | Digital Design and BIM | FM and Space | FM Research Project | Light, Man, and Environment | Engineering Management

GRADUATE

Metaverse Space Design Research | Virtual Reality and Virtual Worlds | IoT-based Space Design | Low Carbon Building Design | Facility Management Professional Practice | Economics for Facility Management | Indoor Environmental Quality Assessment | Building Carbon Footprint Assessment | Post-Occupancy Evaluation | Digital Architecture | Human-centered Architectural Space Design Research | Convergence of AI, Spatial Design and Technology (aSSIST)

18 Lab members

28 current

Chun, Sookyung, Research Professor, 07/2022 – present.

Cho, Kyunghyun, Ph.D. student, Principal supervisor, 06/2022 – present.

Eum, Yujeung, Ph.D. student, Principal supervisor, 03/2022 – present.

Lee, Seung Hyun, Ph.D. student, Principal supervisor, 04/2022 – present.

Bae, Seon Ah, Ph.D. student, Principal supervisor, 01/2023 – present.

Myung, Jaekwon, Ph.D. student, Principal supervisor, 01/2026 – present.

Kang, Jisoo, MS student, Principal supervisor, 07/2024 – present.

Chung, Dagyeom, MS student, Principal supervisor, 12/2024 – present.

Kim, Artem, MS student, Principal supervisor, 02/2025 – present.

Seol, Hyo Eun, MS student, Principal supervisor, 05/2025 – present.

Ji, Jiaxian, MS student, Principal supervisor, 09/2025 – present.

Han, Jaewon, MS student, Principal supervisor, 09/2025 – present.

Yang, Jiwon, MS student, Principal supervisor, 03/2026 – present.

Cherdchanyapong, Kavin, Ph.D. student, Co-supervisor, 09/2025 – present. (GDI program)

Han, Gisung, Research Professor, 06/2024 –present

Song, Yoan, Ph.D. student, Principal supervisor, 04/2022 – present.

Choi, Hyeokjin, Ph.D. student, Principal supervisor, 06/2022 – present.

Jang, Jae Young, Ph.D. student, Principal supervisor, 01/2023 – present.

Kim, Bomin, Ph.D. student, Principal supervisor, 09/2025 – present.

Shim, Seoyoung, Ph.D. student, Principal supervisor, 09/2026 – present.

Jeon, DaHye, MS student, Principal supervisor, 11/2024 – present.

Kim, Yeongjo, MS student, Principal supervisor, 02/2025 – present.

Choo, Sheriel Shannon, MS student, Principal supervisor, 02/2025 – present.

Ryu, Yeorim, MS student, Principal supervisor, 09/2025 – present.

Ryu, Najeong, MS student, Principal supervisor, 09/2025 – present.

Lee, Yaejin, MS student, Principal supervisor, 01/2026 – present.

Kwon, Dohui, MS student, Principal supervisor, 03/2026 – present.

Zhang, Shuzhen, Ph.D. student, External co-supervisor, 07/2018 – present. (HK PolyU)

19 Alumni

24 alumni

Shin, Jaeyeon, MS student, Principal supervisor, 07/2024 – 08/2026

Chang, Yunseo, MS student, Principal supervisor, 08/2024 – 08/2025

Lee, Junseo, MS student, Principal supervisor, 08/2024 – 02/2025

Jung, Koeun, Research Professor, 02/2024 –08/2024 (Current: Assistant Professor, Chonnam National University)

Abbas, Ali, Post-doc, HK PolyU, Co-supervisor, 12/2021– 08/2023 (Current: Assistant Professor, Université Côte d'Azur)

Rhee, Jee Heon, Post-doc, Principal supervisor, 03/2021– 06/2022 (Current: Assistant Professor, Gachon University)

Ma, Jae Hoon, MS student, Principal supervisor, 03/2019 – 11/2021 (Current: Assistant Professor, Indiana University Bloomington)

Jo, Taehee, MS student, Principal supervisor, 03/2020 – 08/2021

Yun, Junyoung, MS student, Principal supervisor, 09/2020 – 08/2021

Lee, Byunghee, Postdoctoral Fellow, Principal supervisor, 10/2017– 05/2018. (Current: Researcher, LH Institute)

Kim, Jeonghwan, Postdoctoral Fellow, Principal supervisor, 07/2016– 08/2018. (Current: Assistant Professor, Korea National University of Transportation)

Zhang, Shaojie, Ph.D. student, External co-supervisor, 07/2016 – completed.

Wang, Lyubing, MS student, External co-supervisor, 07/2016 – completed.

Kim, Hyun Woo, MS student, Principal supervisor, 03/2023 – 08/2025

Lee, Jung Won, MS student, Principal supervisor, 08/2022 – 06/2024 (Current: Ph.D. student, University of Münster)

Lee, Hanung, MS student, Principal supervisor, 03/2022– 08/2023

Lee, Chan Kyu, Post-doc, Principal supervisor, 06/2021– 04/2022 (Current: Post-doc, Korea Institute of Civil Engineering and Building Technology)

Kim, Kyungeun, MS student, Principal supervisor, 03/2020 – 08/2021

Choi, Heejee, MS student, Principal supervisor,09/2020 – 08/2021

Gassar, Abdo Abdullah Ahmed, Post-doc, Principal supervisor, 03/2020– 03/2021. (Current: Researcher, University of La Rochelle)

Baek, Seunghyo, Postdoctoral Fellow, Principal supervisor, 10/2017– 08/2018. (Current: Assistant Professor, Mokwon University)

Whenzhuo, Li, Ph.D. student, External co-supervisor, 04/2018 – completed.

Ching, Po Chak, MS student, External co-supervisor, 07/2017– completed.

Peng, You, Visiting Ph.D. student, Eindhoven University of Technology, Host supervisor, 08/2016 – 12/2016.

20 Honors and certificates

- 한국차세대한림원 회원, 한국차세대과학기술한림원, 2023-
  https://www.dongascience.com/news.php?idx=57523
- 연구혁신 우수상 인문사회융합과학대학, 한국과학기술원,2022
- Best paper award, Journal of KIBIM, 2021
- 우수기업선정, 예비창업패키지, 중소벤처기업부, 2021
- 신진연구자상(TOP 3%, Awarded to two faculty members out of 80), 한양대학교, 2021
- 11월 이달의 연구자상, 한양대학교, 2020
- 신진연구자상(TOP 3%, Awarded to two faculty members out of 60), 한양대학교, 2020
- 학술봉사상, 한국실내디자인학회, 2019
- Best work award, KIID International exhibition, 2019
- Best paper award, I3CDE, 2019
- Best paper award, KIBIM annual conference, 2019

- Best paper award, KICEM annual conference, 2018
- Dean's award: Outstanding Achievement in Academic Programme Development, 2016
- Introduction to University Teaching, EDC, the Hong Kong Polytechnic University, 2016
- LEED AP O+M (Operation & Maintenance), U.S. Green Building Council, 2010
- Lundgren research awards, University of Cambridge, 2014
- Kettle's Yard travel grant, University of Cambridge, 2014
- Fieldwork research grant, University of Cambridge, 2012-2014
- Erasmus grant, European Commission, 2012-2013
- USGBC Greenbuild scholarship, United States Green Building Council, 2010
- CMAA scholarship, CMAA, North California Chapter, 2010

21 Contribution to professional service

- Associate Editor, Architectural Science Review (A&HCI, Q1, TOP 3%), Taylor & Francis, 2026-
- 위원, 건축정책위원회, 대전광역시, 2026-2028
- 위원, 건축위원회, 대전광역시, 2026-2028
- 건축자문위원, 한국산업단지공단, 2026-2028
- 위원, 공공디자인위원회, 천안시, 2026-2028
- 센터장, AI도시연구센터, 한국도시설계학회, 2026-
- 좌장, 특별세션 「로봇을 맞이하는 도시와 건축」, 2026 한국도시설계학회 추계학술발표대회, 수원, 17 Oct 2026
- Reviewer, The International Conference of Computer-Aided Architectural Design Futures (CAAD Futures 2027), 2026
- 코디네이터, 2026년 지역R&D정책 글로벌 벤치마킹 해외연수, 국가과학기술인력개발원(KIRD), 2026
- AI 과학기술위원회 위원, 한국과학기술한림원, 2025-2027
- Editorial board member, Scientific Reports (SCIE, Q1, Top 15%), Springer Nature, 2024-
- 편집위원, 한국도시설계학회 논문집 편집위원회, 2026-
- 편집위원, 한국주거학회 논문집 편집위원회, 2026-
- 편집위원, 한국실내디자인학회 논문집 편집위원회, 2026-
- 조직위원, CDE2021, 2023, 2026 하계학술대회, 한국CDE학회
- 조직위원, BuildSmart Conference, 빌딩스마트협회, 2022, 2026
- Horizon Europe 대한민국 국가연락관, NRF-KERC, 2025-26
- Guest Editor, Special Issue "Revolutionizing Workplace Efficiency with VR/AR, IoT, and AI: Future Office Innovations," Journal of Corporate Real Estate (ESCI), 2025–2026
- 부편집위원장, 한국주거학회논문집 (KCI), 2024-2025

- 총무이사, 한국생태환경건축학회, 2023-2024
- 평가위원, 조달청(건축계획분야), 2022-2024
- 평가위원, IITP, 2023-
- 편집위원장, Journal of KIBIM (KCI), 2023-24
- Associate Editor, Journal of Computational Design and Engineering (SCIE, Q1, Top 5%) Oxford Univ. Press, 2022-
- Technical committee member, 10th International Conference on Construction Engineering and Project Management (ICCEPM 2024).
- 위원, 인공지능(AI)건축위원회, 대한건축학회, 2022-2024
- 위원, 스마트건축위원회, 대한건축학회, 2022-2024
- 위원, 실내건축위원회, 대한건축학회, 2022-2024
- 위원, 스마트+빌딩 얼라이언스, 국토부, 2022-2024
- 준비위원, 뉴콘텐츠아카데미, 한국콘텐츠진흥원, 2023
- 위원장, 융복합연구위원회, 한국도시설계학회, 2022-
- 위원, 한림원정책연구위원회, 한림원, 2022
- 이사, 한국그린빌딩협의회 홍보위원회, 한국그린빌딩협의회, 2022
- 부편집장, Journal of KIBIM (KCI) , 2021-2022
- 이사, CG&I Society, 한국정보과학회, 2023-
- 위원, 건축환경위원회, 대한건축학회, 2020-2022
- 이사, 한국CDE학회, 2020-
- 부편집장, The BIM 매거진, 빌딩스마트협회, 2020-
- 이사, 한국생태환경건축학회, 2019-2022
- 이사, 한국건축친환경설비학회, 2020-2025
- 부위원장, 스마트 건축위원회, 한국건축시공학회, 2019-2022
- 위원, 스마트건축/건설 특별위원회, 대한건축학회, 2019-2022
- 기술자문위원, 제주국제자유도시개발센터, 2019
- 자격검정출제위원, 건설사업관리사(CMP) , 한국 CM협회, 2019
- Guest Editor, Special issue “Health, Safety and Environment (HSE) in the Building and Construction Industry”, Applied Sciences (SCIE, Q2, IF2.90), 2021-2022
- Review Editor, Frontiers in Psychology (SSCI, Q1, IF3.80), 2021-2023
- Guest Editor, Special issue “Sustainable Urban Environment and Building Energy Efficiency”, Sustainability (SCIE, Q2, IF4.00) , 2021-2022
- Guest Editor, Special issue “Advances in Materials, Technologies and Controls for Sustainable Building”, Energies (SCIE, Q3, IF3.20), 2020-2022

- Technical Theme Chair, 8th International Conference on Construction Engineering and Project Management (ICCEPM 2020).
- Scientific Advisory Board at the 3rd International Conference on the Human Factors in Communication of Design track, 24-28 July, 2019, Washington Hilton, Washington D.C., USA.
- Scientific Advisory Board at the 9th International Conference on Applied Human Factors and Ergonomics (AHFE 2018) for the Human Factors in Communication of Design track, 22 - 26 July, 2018, Orlando, Florida, USA.
- Session Chair of Construction Robotics (IV) / Design session at the 34th International symposium on Automation and Robotics in Construction (ISARC 2017), 28 June 28 - 1 July, Taipei, Taiwan.

JOURNAL REVIEWER

Journal of Engineering Design, Elsevier.
Automation in Construction, Elsevier.
Building and Environment, Elsevier.
Journal of Building Engineering, Elsevier.
Displays, Elsevier.
Renewable & Sustainable Energy Reviews, Elsevier.
Advanced Engineering Informatics, Elsevier.
Developments in the Built Environment, Elsevier.
Journal of Urban Technology, Taylor & Francis.
Journal of Toxicology and Environmental Health, Taylor & Francis.
International Journal of Human-Computer Interaction, Taylor & Francis.
Building Simulation, Springer Nature.
Scientific Reports, Springer Nature.
Computer Animation and Virtual Worlds, Wiley.
IEEE Access, IEEE.
International Journal of Geo-information, MDPI.
Frontiers in Psychology, Frontiers.
한국BIM학회 논문집
한국공간디자인학회 논문집
한국문화공간건축학회 논문집
Frontiers of Architectural Research, Elsevier.
Applied Energy, Elsevier.
Resources, Conservation and Recycling, Elsevier.
Library and Information Science Research, Elsevier.
Sustainable Cities and Society, Elsevier.
Journal of Computational Design and Engineering, Oxford University Press.
Energy and Buildings, Elsevier.
Journal of Cleaner Production, Elsevier.
Architectural Engineering and Design Management, Taylor & Francis.
Architectural Science Review, Taylor & Francis.
Journal of Asian Architecture and Building Engineering, Taylor & Francis.
KSCE Journal of Civil Engineering, Springer Nature.
Journal of Interior Design, Wiley.
Indoor and Built Environment, Sage.
Journal of Management in Engineering, ASCE.
Sensors, MDPI.
한국CDE학회 논문집
한국디자인학회 논문집
한국생태환경건축학회 논문집

22 Contribution to community service

- 비상임이사, 안성문화관광재단, 2026-2028
- 멘토, 청소년과학영재사사, 한림원, 2023, 2025, 2026