

SEMIN JIN

Design Computing Researcher | AI for Spatial Design & Human-AI Interaction

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I am a design computing researcher trained in interior architecture. I develop AI methods and interactive systems for human-aware spatial design, visual design exploration, and design decision support. My work combines generative models, computer vision, and anthropometric simulation with empirical evaluation.

My first-authored and collaborative research includes studies with users of varied design experience, interviews with practicing experts, and physical evaluations of spatial layouts. Through interaction logs, surveys, interviews, design-process analysis, and motion capture, I investigate how people use AI design tools and how generated environments support human activities.

EDUCATION

Sep 2024 - Aug 2026	Doctor of Philosophy in Interior Architecture Design Hanyang University, Seoul Advisor: Prof. Kyung Hoon Hyun Doctoral Dissertation: <i>Anthropometric Simulation and Human Pose Evaluation for Generative Spatial Design</i> .
Mar 2022 - Aug 2024	Master of Science in Interior Architecture Design Hanyang University, Seoul Advisor: Prof. Kyung Hoon Hyun Master's Thesis: <i>Enhancing the Interior Design Process through Data-Driven Aesthetic Assessment Systems</i> .
Mar 2018 - Feb 2022	Bachelor of Arts in Architectural Interior Design Kaywon University of Art & Design, Uiwang Top-up program (2021 - 2022) Preceded by Associate of Arts (A.A.) in Interior Architecture Design, 3-yr (2018 - 2021)

RESEARCH EXPERIENCE

Sep 2026 - Present	Postdoctoral Researcher Design AI Lab · Human-Centered AI Design Institute, Hanyang University Lead research on generative spatial design - anthropometric and biomechanical human simulation, 3D scene generation, and agentic AI for designer-centered workflows.
2022 - 2026	Graduate Researcher Design AI Lab · Human-Centered AI Design Institute, Hanyang University Conducted research on human simulation-driven 3D scene generation and AI-assisted design systems. As a participating researcher, led proposal preparation for a funded NRF Core Research project on integrated generation and evaluation of human-aware 3D spatial layouts; contributed to the research execution. Contributed to a large-scale industry-academia consortium building designer-centered AI generation pipelines grounded in real design workflows (Korea Evaluation Institute of Industrial Technology · Design Tech Program).

PUBLICATIONS

JCR 2025 data (released 2026)

5 SCIE journal articles · 2 additional Scopus-indexed journal articles · 2 ACM CHI papers

Selected JCR rankings: best category; Top % = rank / journal count × 100, rounded to whole percentages.

JOURNAL ARTICLES

- [1] Jin, S., & Hyun, K. H. (2026). Human-operational 3D indoor layout generation with LLM-driven anthropometric simulation. *Automation in Construction*, 184, 106846.
SCIE **IF 12.6** **JCR Top 1%** (Engineering, Civil; 2/193) **First author**
- [2] Jin, S., & Hyun, K. H. (2026). Blending designer insights with predicted crowd-based color compatibility in interior color design. *Color Research and Application*.
SCIE **IF 2.0** **First author**
- [3] Seo, J., Jin, S., Choi, K., Hyun, K. H., & Joung, J. (2026). An explainable AI-based approach for identifying interior design style principles. *Advanced Engineering Informatics*, 69, 103879.
SCIE **IF 11.5** **JCR Top 2%** (Engineering, Multidisciplinary; 4/178) **Co-author**
- [4] Lee, S. W.†, Choi, J.†, Yun, Y.†, Jin, S., Jang, Y., Hwang, G., Park, S. W., Ban, S., & Hyun, K. H. (2026). How Agent-Driven Creative Trace Mining Reshapes Design Behavior in a Deployment Study of Intent-Aligned Multimodal Design. *International Journal of Human-Computer Interaction*. Advance online publication.
SCIE / SSCI **IF 6.1** **JCR Top 8%** (Ergonomics; 2/24) **Co-author**
- [5] Jin, S.†, Choi, J.†, & Hyun, K. H. (2025). CMLsearch: Semantic visual search and simulation through segmented colour, material, and lighting in interior image. *Journal of Computational Design and Engineering*, 12(1), 179-299.
SCIE **IF 6.8** **JCR Top 6%** (Engineering, Multidisciplinary; 11/178) **First author†**
- [6] Jin, S., & Hyun, K. H. (2024). Enhancing the interior design process with crowdsourced furnishing pairing recommendations. *Archives of Design Research*, 37(2), 79-101.
SCOPUS **KSDS BEST PAPER 2024** **First author**
- [7] Jo, T. H., Choi, J., Jin, S., Lee, S. W., Jang, Y., Park, S. W., Ban, S., & Hyun, K. H. (2026). Workflow-Net: Toward Understanding Designer Workflows in Generative AI-Driven Systems through Comparing Node-and Prompt-Based Interfaces. *Archives of Design Research*, 39(2), 7-34.
SCOPUS **Co-author**

CONFERENCE PROCEEDINGS

- [8] Jin, S.†, Kim, D.†, Ryu, J., & Hyun, K. H. (2026, April). Behavior-Aware Anthropometric Scene Generation for Human-Usable 3D Layouts. In *Proc. ACM CHI Conference on Human Factors in Computing Systems (CHI '26)*, Barcelona, Spain.
BK TOP-TIER CONF. **First author†**
- [9] Lee, S. W., Jo, T. H., Jin, S., Choi, J., Yun, K., Bromberg, S., Ban, S., & Hyun, K. H. (2024). The impact of sketch-guided vs. prompt-guided 3D generative AIs on the design exploration process. In *Proc. ACM CHI Conference on Human Factors in Computing Systems (CHI '24)*, Honolulu, HI, USA.
BK TOP-TIER CONF. **Co-author**

† Equal contribution.

UNDER REVIEW

Biomechanical Simulation for Evaluating and Authoring Human-Usable Spatial Designs. Submitted to an SCIE-indexed journal.

Research on human-centered evaluation and refinement of 3D-generated furniture. Submitted to ACM CHI.

TEACHING EXPERIENCE

Fall 2026	Instructor Graduate School of Interior Architecture Design, Hanyang University Course: <i>Design Computing Research</i> · Graduate · English-medium · 3 hours/week Lead project-based teaching that connects design problems with data analysis, AI system development, and evaluation, including RECON Labs-linked work.
Spring 2025, Spring 2026	Teaching Fellow - 4-week module Department of Interior Architecture Design, Hanyang University Course: <i>Furniture Design and Digital Fabrication</i> (English Course) Led a four-week module in each of two spring semesters, covering 3D printing, laser cutting, CNC fabrication, and individual project critiques in a Hyundai Livart-linked course.

AWARDS AND CERTIFICATION

AWARDS

Aug 2026	Outstanding Doctoral Dissertation Award · 박사학위논문 우수상 Hanyang University
Nov 2024	Best Paper Award · 우수논문상 Korean Society of Design Science (KSDS) · 2024 Annual Conference For “Enhancing the Interior Design Process with Crowdsourced Furnishing Pairing Recommendations,” <i>Archives of Design Research</i> , Vol. 37, No. 2.
Nov 2022	Excellence Award · 우수작품상 Korean Institute of Interior Design (KIID) · 30th Anniversary International Invitational Exhibition Work: <i>Return to Flow of Nature</i> .

CERTIFICATIONS

2021	Engineer Colorist · 컬러리스트기사 Korea National Technical Qualification · Human Resources Development Service of Korea
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ACADEMIC SERVICE

Apr 2026	Position Paper - Beyond Semantic Similarity: Open Challenges for Embedding-Based Creative Process Analysis Across AI Design Tools Herding Cats Workshop · ACM CHI 2026, Barcelona, Spain
Oct 2025	Demo Presentation Mind & Motion Workshop · ACM UIST 2025, Busan, Korea
2024 - Present	Reviewer ACM CHI · ACM UIST · ACM Creativity & Cognition (C&C) · <i>Frontiers of Architectural Research</i> · <i>Archives of Design Research</i>

PATENTS AND REGISTERED DESIGN

REGISTERED	인테리어 제품 검색 서비스 제공 방법 및 장치 Patent No. KR 10-2943193, Registered March 19, 2026 · 현경훈, 진세민, 최지인
DESIGN · REGISTERED	화면디자인이 표시된 디스플레이 패널 (다중 에이전트 기반 창의적 디자인 대화 구조화 및 시각화 시스템) Design Registration No. KR 30-1348144, Registered April 23, 2026 · 현경훈, 진세민, 이승원
FILED	3차원 실내 가구 배치 생성을 위한 장치, 및 방법 Application No. KR 10-2026-0044425 · 현경훈, 진세민
FILED	인체측정 데이터 기반 3차원 실내 공간 레이아웃 생성 및 사용성 검증 시스템 및 방법 Application No. KR 10-2026-0040371 · 현경훈, 진세민, 김동혁
FILED	다중 에이전트를 기반으로 창의적 아이디어를 구조화하고 시각화하는 시스템 및 방법 Application No. KR 10-2026-0036677 · 현경훈, 진세민, 이승원
FILED	디자인 아티팩트 기반 이미지 생성 시스템 및 방법 Application No. KR 10-2025-0184966 · 현경훈, 이승원, 최지인, 진세민

EXHIBITIONS

Apr 2026	Designing Layouts from Human Motion 38th International Invitational Exhibition of Spatial Design · Korean Institute of Spatial Design (KISD), Seoul · Kim, D., Jin, S. , & Hyun, K. H.
Nov 2023	Sketch to 3D Generation KIID International Invitation Exhibition, Seoul · Jin, S. , Jo, T. H., & Hyun, K. H.
Nov 2023	Dynamic Office Design for Brand Innovation KIID International Invitation Exhibition, Seoul · Jin, S. , & Hyun, K. H.
Nov 2022	Return to Flow of Nature 30th Anniversary International Invitational Exhibition · Korean Institute of Interior Design (KIID), Seoul · Jin, S. , & Hyun, K. H.