

Hyeshim Kim

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Home: https://codeshim.github.io/hyeshimkim_website/

Scholar: [Google Scholar](#)

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Research Interests

Generative 3D Scene Synthesis, 3D Reconstruction, Telepresence

Education

2025–Present Ph.D., Computer Graphics, KAIST

Lifelike Avatar & Agent Laboratory (LAVA Lab), Advisor: Sung-Hee Lee

2023–2025 M.A., Computer Graphics, KAIST

Lifelike Avatar & Agent Laboratory (LAVA Lab), Advisor: Sung-Hee Lee

2014–2020 B.A., Interaction Design, Korea National University of Arts

Publications

* Authors contributed equally.

Conferences

- [1] **Hyeshim Kim**, Taehei Kim*, Jihun Shin*, Hyeonjin Kim, and Sung-Hee Lee. “TranSpace: Progressive Anchoring for Metric-Consistent Scene Synthesis.” ACM Multimedia (2026). DOI: [10.1145/3767308.3836316](#)
- [2] Taehei Kim, **Hyeshim Kim**, Jihun Shin, Hyeonjin Kim, and Sung-Hee Lee. “Neighborhood: Dynamic Spatial Alignment for Traversable Telepresence Across Remote Spaces.” ACM Symposium on User Interface Software and Technology (2026).

Journals

- [1] Taehei Kim, Jihun Shin, **Hyeshim Kim**, Hyuckjin Jang, Jiho Kang, and Sung-Hee Lee. “Voronoi Rooms: Dynamic Visibility Modulation of Overlapping Spaces for Telepresence.” ACM Transactions on Graphics 45, no. 2 (2025): 1-15. DOI: [10.1145/3777900](#)
- [2] Jiho Kang, Taehei Kim, **Hyeshim Kim**, and Sung-Hee Lee. “Real-time translation of upper-body gestures to virtual avatars in dissimilar telepresence environments.” IEEE Transactions on Visualization and Computer Graphics (2025). DOI: [10.1109/TVCG.2025.3577156](#)

- [3] Taehei Kim, **Hyeshim Kim**, Jeongmi Lee, and Sung-Hee Lee. “Evaluating user perception toward physics-adapted avatar in remote heterogeneous spaces.” *Computers & Graphics* 128 (2025): 104185. DOI: [10.1016/j.cag.2025.104185](https://doi.org/10.1016/j.cag.2025.104185)

Theses and Dissertations

- [1] **Hyeshim Kim**. “Generating Transition Space between Overlapping Scenes in XR Telepresence.” M.A. Thesis (2025). Korea Advanced Institute of Science and Technology (KAIST).

Demos

- [1] Taehei Kim, Jihun Shin, **Hyeshim Kim**, Hyuckjin Jang, Jiho Kang, and Sung-Hee Lee. “Visibility Modulation of Aligned Spaces for Multi-User Telepresence.” In *2024 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct)*, pp. 626-627. IEEE, 2024. **Best Demo Honorable Mention Award**. DOI: [10.1109/ISMAR-Adjunct64951.2024.00182](https://doi.org/10.1109/ISMAR-Adjunct64951.2024.00182)

Patents

- [1] Mixed reality telepresence system for dynamically adjusting visibility in shared space among multiple users. Patent Applications (Pending): Korea (10-2024-0199888, Filed: 2024), Japan (2025-175004, Filed: 2025), USA (19/359,316, Filed: 2025).
- [2] Device and Control Method for Automatic Generation of Korean Landscape Paintings. Korea (1026815870000, Filed: 2022, Granted: 2024; 1027103510000, Filed: 2022, Granted: 2024).

Industry Experience

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|-----------|---|
| 2025 | <p>ParameterRoom – Lead Developer</p> <p>Led development of VR application, launched on Meta Quest Store (Early Access). Responsible for full development cycle including system architecture, implementation, and deployment.</p> |
| 2023 | <p>LAVA Lab, KAIST – Research Intern</p> <p>Conducted research on avatar-mediated telepresence and MR systems.</p> <p><i>MOVIN – SIGGRAPH 2023 Demo Production</i> (2023): Contributed to SIGGRAPH 2023 Unity Demo for AI-powered real-time motion capture startup. Responsible for 3D scene creation.</p> |
| 2021–2022 | <p>Science Show Co., Ltd. – Contents Developer</p> <p><i>METASCIENCE LIVE MUSEUM</i> (2022): Developed interactive 3D spatial content for meta-verse platform using Unity Engine.</p> <p><i>THE SHOW A.I.</i> (2022): Conducted ML/CV research for AI-assisted art exhibition. Built a custom dataset of traditional Korean landscape paintings, trained a conditional generative model that transforms user line drawings into paintings with the drawn strokes defining mountain ridges. Filed 2 patents.</p> <p><i>DINOQUA</i> (2021): Produced media art videos in Unreal Engine and developed VR simulation for immersive media art exhibition.</p> |

Technical Skills

Programming	C/C++, C#, Python, PyTorch
Graphics Engines	Unity, Unreal Engine, Meta Quest Development
Design Tools	Adobe Photoshop, Illustrator, InDesign, After Effects

Honours and Awards

2024	Best Demo Honorable Mention Award, IEEE ISMAR, Seattle
2020	Grand Prize, Ministry of Science and ICT (XR Challenge Competition)