

JoungBin Lee

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Research Interests

My research focuses on **generative modeling for world model**, with an emphasis on **controllable and geometry-aware generation**. I am particularly interested in diffusion-based image and video generation that preserves 3D structure, temporal consistency, and user-specified controls.

- Diffusion-based image and video generation with controllable attributes
- Geometry-aware and camera-controllable video synthesis using 3D/4D representations
- Generative modeling for data augmentation and downstream visual tasks

Education

M.S./Ph.D. Integrated Course in Artificial Intelligence March 2025 – Present
Korea Advanced Institute of Science and Technology (KAIST)

B.S. in Data Science March 2023 – February 2025
Korea University
GPA: 3.9 / 4.5

B.S. in Artificial Intelligence March 2021 – February 2023
University of Seoul
GPA: 4.2 / 4.5

Experience

Sony AI Tokyo, Japan
Research Intern November 2026 – February 2027 (Expected)
Advisor: Yuki Mitsufuji
Mentors: Takuya Narihira, Kazumi Fukuda

Sony AI Remote
Remote Research Collaboration 2025 – Present
Advisor: Yuki Mitsufuji
Mentors: Takuya Narihira, Kazumi Fukuda
Papers: 3DScenePrompt (ICLR 2026), Vid-CamEdit (AAAI 2026), MVTrack4Gen (arXiv 2026)

Publications

* Equal Contribution, † Corresponding Author

International Conference

[C6] Seoul World Model: Grounding World Simulation Models in a Real-World Metropolis

Junyoung Seo*, Hyunwook Choi*, Minkyung Kwon, Jinhyeok Choi, Siyoon Jin, Gayoung Lee, Junho Kim, **JoungBin Lee**, Geonmo Gu, Dongyoon Han, Sangdoo Yun, Seungryong Kim, Jin-Hwa Kim
European Conference on Computer Vision (ECCV), 2026 (**Oral Presentation**)

Workshop on F2S: Toward Reliable, Controllable and Trustworthy Long-Horizon Video Generation at ICML (ICMLW), 2026 (**Oral Presentation**) [Paper](#) | [Project Page](#) | [Code](#)

[C5] Attribute-Preserving Pseudo-Labeling for Diffusion-Based Face Swapping

Jiwon Kang, Yeji Choi, JoungBin Lee, Wooseok Jang, Jinhyeok Choi, Taekun Kang, Yongjae Park, Myungin Kim, Seungryong Kim[†]

IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2026)

[Paper](#) | [Project Page](#) | [Code](#)

[C4] 3D Scene Prompting for Scene-Consistent Camera-Controllable Video Generation

JoungBin Lee^{*}, Jaewoo Jung^{*}, Jisang Han^{*}, Takuya Narihira, Kazumi Fukuda, Junyoung Seo, Sunghwan Hong, Yuki Mitsufuji[†], Seungryong Kim[†]

International Conference on Learning Representations (ICLR 2026)

[Paper](#) | [Project Page](#) | [Code](#)

[C3] CHIMERA: Controllable High-quality Image-Mask Extraction for Reliable Diffusion-Based Anomaly Synthesis

JoungBin Lee^{*}, Hyunkoo Lee^{*}, Jini Yang^{*}, Chaehyun Kim, Jung Yi, Seok Hwangbo, Hyeoncheol Lee, Minho Chun, Eunjo Jeong, Seungryong Kim[†]

AAAI Conference on Artificial Intelligence (AAAI 2026)

[Paper](#) | [Project Page](#) | [Code](#)

[C2] Vid-CamEdit: Video Camera Trajectory Editing with Generative Rendering from Estimated Geometry

Junyoung Seo^{*}, Jisang Han^{*}, Jaewoo Jung^{*}, Siyoon Jin, JoungBin Lee, Takuya Narihira, Kazumi Fukuda, Takashi Shibuya, Donghoon Ahn, Shoukang Hu, Seungryong Kim[†], Yuki Mitsufuji[†]

AAAI Conference on Artificial Intelligence (AAAI 2026)

[Paper](#) | [Project Page](#) | [Code](#)

[C1] GaussianTalker: Real-Time High-Fidelity Talking Head Synthesis with Audio-Driven 3D Gaussian Splatting

Kyusun Cho^{*}, JoungBin Lee^{*}, Heeji Yoon^{*}, Yeobin Hong, Jaehoon Ko, Sangjun Ahn, Seungryong Kim[†]

ACM Multimedia (ACM MM 2024)

[Paper](#) | [Project Page](#) | [Code](#)

Workshop & Findings

[F1] Pose-diVE: Pose-Diversified Augmentation for Person Re-Identification

Inès Hyeonsu Kim, Woojeong Jin, Soowon Son, Junyoung Seo, Seokju Cho, JeongYeol Baek, Byeongwon Lee, JoungBin Lee, Seungryong Kim[†]

Findings on Computer Vision and Pattern Recognition 2026 (CVPR 2026 Findings)

[Paper](#) | [Project Page](#) | [Code](#)

[W2] WorldCam: Interactive Autoregressive 3D Gaming Worlds with Camera Pose as a Unifying Geometric Representation

Jisu Nam, Yicong Hong, Chun-Hao Paul Huang, Feng Liu, JoungBin Lee, Jiyoung Kim, Siyoon Jin, Yunsung Lee, Jaeyoon Jung, Suhwan Choi, Seungryong Kim, Yang Zhou

Workshop on Video World Model: Interaction, Memory, and Efficiency at CVPR (CVPRW), 2026

[Paper](#) | [Project Page](#) | [Code](#)

[W1] Talk3D: High-Fidelity Talking Portrait Synthesis via Personalized 3D Generative Prior

Jaehon Ko, Kyusun Cho, JoungBin Lee, Heeji Yoon, Sangmin Lee, Sangjun Ahn, Seungryong Kim

Workshop on Generative AI for Audio-Visual Content Creation (Gen4AVC), ICCVW 2025

[Paper](#) | [Project Page](#) | [Code](#)

Preprint

[P1] MVTrack4Gen: Multi-View Point Tracking as Geometric Supervision for 4D Video Generation

JoungBin Lee, Jaewoo Jung, Jongmin Lee, Tongmin Kim, Hyunsung Kim, Takuya Narihira, Kazumi Fukuda, Jahyeok Koo, Jisang Han, Yuki Mitsufuji, Seungryong Kim
arXiv (2026)

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[P2] Lip Forcing: Few-Step Autoregressive Diffusion for Real-time Lip Synchronization

Paul Hyunbin Cho, Jinhyuk Jang, SeokYoung Lee, **Joungbin Lee**, Siyoon Jin, Heeseong Shin, Jung Yi, Yunjin Park, Chulmin Park, Seungryong Kim
arXiv (2026)

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Reviewer

Honors & Awards

- Excellence Award, Graduate School of Chemical Safety Management, University of Seoul (2021)
- Silver Award, iNTton Datathon, Korea University SW Convergence Foundation (2023)

Leadership & Service

- Vice President, AI Department Student Council, University of Seoul (2021)
- Vice Representative, AI Department Student Council, University of Seoul (2021)