Jiwon Kang

Last update: July 6, 2026

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Research Interests

My research focuses on generative models, particularly diffusion/flow-based methods and their applications across vision, 3D, and multimodal domains. Specifically:

- Diffusion & Generative AI (Guidance, Sampling, Image Generation)
- Unified Multimodal Models
- 3D Vision (Novel View Synthesis, NeRF, Gaussian Splatting)

Education

M.S. in Artificial Intelligence Mar. 2025 – Feb. 2027 (Expected)

Kim Jaechul Graduate School of AI, KAIST Advisor: Seungryong Kim (CVLAB)

B.S. in Computer Science and Engineering Mar. 2019 – Feb. 2025

Korea University

- GPA: 4.24 / 4.5
- Double Major in Statistics
- Undergraduate Research Intern @ CVLAB (Sep. 2022 – Feb. 2025), Advisor: Seungryong Kim

Experience

Kakao, Seoul Mar. 2026 – May 2026

Research Intern

- Worked on Text-to-Speech research, repurposing Whisper as a continuous tokenizer for autoregressive diffusion-based TTS model.

Publications

*: Equal Contribution, †: Corresponding Author

International Conference

[C4] Transferability Between Understanding and Generation in Unified Multimodal Models Paper | Project Page | Code

Jiwon Kang[*], Heeji Yoon[*], Jaewoo Jung, Jaewon Min, Minkyeong Jeon, Biyeon Hwang, Sangwon Jung, Seungryong Kim[†]

- Investigated how understanding and generation capabilities (e.g., counting) transfer to one another within unified multimodal models.
- Showed that transferability depends on the model architecture, and proposed a practical post-training strategy for unified multimodal models that leverages transferability.

European Conference on Computer Vision (ECCV 2026).

[C3] APPLE: Attribute-Preserving Pseudo-Labeling for Diffusion-Based Face Swapping Paper | Project Page | Code

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

- Prior diffusion-based face swapping methods focused on changing facial identity, failing to preserve facial attributes.
- Proposed a novel pseudo-labeling framework that preserves facial attributes while swapping identities, achieving Pareto-optimal results.

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

[C2] A Noise is Worth Diffusion Guidance Paper | Project Page | Code

Donghoon Ahn[*], ***Jiwon Kang***[*], Sanghyun Lee, Jaewon Min, Wooseok Jang, Minjae Kim, Hyungwon Cho, Sayak Paul, SeonHwa Kim, Eunju Cha[†], Kyong Hwan Jin[†], Seungryong Kim[†]

- Showed that classifier-free guidance can be replaced by refining the initial noise.
- Enabled high-quality generation without a guidance pass, highlighting the importance of the initial noise in diffusion models.

International Conference on Learning Representations (ICLR 2026).

[C1] Where and How to Perturb: On the Design of Perturbation Guidance in Diffusion and Flow Models Paper | Project Page | Code

Donghoon Ahn[*], ***Jiwon Kang***[*], Sanghyun Lee, Minjae Kim, Wooseok Jang, Jaewon Min, Sangwu Lee, Sayak Paul, Seungryong Kim[†]

- Systematically studied perturbation guidance in diffusion and flow models.
- Showed that perturbing different layers/heads in a diffusion model exhibits different effects on the generated samples, which can be systematically combined to improve user-specified attributes via the proposed framework.

Conference on Neural Information Processing Systems (NeurIPS 2025).

Workshop

[W1] Self-Evolving Neural Radiance Fields Paper | Project Page | Code

Jaewoo Jung[*], Jisang Han[*], ***Jiwon Kang***[*], Seongchan Kim, Min-Seop Kwak, Seungryong Kim[†]

- Proposed a self-training framework that lets a NeRF improve itself from few input views via pseudo-label distillation.

ICCV 2025 Workshop on Wild3D: 3D Modeling, Reconstruction, and Generation in the Wild.

Preprints & Under Review

[P1] RAIN-GS: Relaxing Accurate Initialization Constraint for 3D Gaussian Splatting Paper | Project Page | Code

Jaewoo Jung[*], Jisang Han[*], Honggyu An[*], ***Jiwon Kang***[*], Seonghoon Park[*], Seungryong Kim[†]

- Relaxed the accurate point-cloud initialization requirement of 3D Gaussian Splatting, enabling training from sparse or random initialization.

Under Review.

Extracurricular Activities

AIKU (Artificial Intelligence Society of Korea University) Sep. 2022 – Aug. 2023

Co-founder & Vice President of academic research society for undergraduate students