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Junyoung Seo Ph.D. Student

Intro.

I am a PhD student at KAIST, advised by Prof. Seungryong Kim. My research focuses on leveraging large-scale generative priors to model worlds, humans, and their complex interactions.

I have worked with image and video diffusion models, applying them to 3D object and scene generation, as well as realistic human video generation. Currently, I am focusing on extending these methods to model complex human-human and human-world interactions, exploring how generative priors can capture interaction dynamics.

Internships

Meta | Research Scientist Intern — Mar. 2025 - Sep. 2025
- Project: Arbitrary-Length Human Video Synthesis with Large-Scale DiTs.

Sony AI | Research Scientist Intern — Dec. 2023 - May. 2024
- Project: Scene-Level Novel View Generative Models with Sparse Geometry.

Collab.

NAVER | Research Residency — Oct. 2025 - Feb. 2026
- Project: 3D Generation with Multimodal Large Language Models

Sony AI | Research Collaborator — May. 2024 - Feb. 2025
- Project: Video Generative Models for Camera Trajectory Editing

Queen Mary University of London | Visiting Scholar — May. 2023 - Aug. 2023
- Project: Leveraging Diffusion Generative Priors for Robot Manipulation. Collaborated with Dr. Changjae Oh.

Publications

1. **Junyoung Seo**, Rodrigo Mira, Alexandros Haliassos, Stella Bounareli, Honglie Chen, Linh Tran, Seungryong Kim, Zoe Landgraf, Jie Shen, "Lookahead Anchoring: Preserving Character Identity in Audio-Driven Human Animation",
   Work done during internship at Meta.
   (Under Review) ArXiv, 2025. [Link]

2. Jisang Han, Honggyu An, Jaewoo Jung, Takuya Narihira, **Junyoung Seo**, Kazumi Fukuda, Chaehyun Kim, Sunghwan Hong, Seungryong Kim, Yuki Mitsufuji, "D2USt3R: Enhancing 3D Reconstruction with 4D Pointmaps for Dynamic Scenes",
   Neural Information Processing Systems (**NeurIPS**), 2025. [Link]

3. Kihong Kim*, Yunho Kim*, Seokju Cho, **Junyoung Seo**, Jisu Nam, Kychul Lee, Seungryong Kim, Kwang Hee Lee, "DiffFace: Diffusion-based Face Swapping with Facial Guidance",
   Pattern Recognition (**PR**), 2025. [Link]

4. **Junyoung Seo**, Kazumi Fukuda, Takashi Shibuya, Takuya Narihira, Naoki Murata, Shoukang Hu, Chieh-Hsin Lai, Seungryong Kim, Yuki Mitsufuji, "GenWarp: Single Image to Novel Views with Semantic-Preserving Generative Warping",
   Work done during internship at Sony AI.
   Neural Information Processing Systems (**NeurIPS**), 2024. [Link]

5. **Junyoung Seo**, Susung Hong, Wooseok Jang, Min-Seop Kwak, Hyeonsu Kim, Doyup Lee, Seungryong Kim, "Retrieval-augmented Score Distillation for Text-to-3D Generation",
   International Conference on Machine Learning (**ICML**), 2024. [Link]

6. **Junyoung Seo***, Wooseok Jang*, Min-Seop Kwak*, Jaehoon Ko, Hyeonsu Kim, Junho Kim, Jin-Hwa Kim, Jiyoung Lee, Seungryong Kim, "Let 2D Diffusion Model Know 3D-Consistency for Robust Text-to-3D Generation",
   International Conference on Learning Representations (**ICLR**), 2024. [Link]

7. Gyeongnyeon Kim*, Wooseok Jang*, Gyuseong Lee*, Susung Hong, **Junyoung Seo**, Seungryong Kim, "DAG: Depth-Aware Guidance with Denoising Diffusion Probabilistic Models",
   Pattern Recognition (**PR**), 2024.

7. **Junyoung Seo***, Gyuseong Lee*, Seokju Cho, Jiyoung Lee, Seungryong Kim, "MIDMs: Matching Interleaved Diffusion Models for Exemplar-based Image Translation",
AAAI Conference on Artificial Intelligence (**AAAI**), 2023. [Link]

8. Jiwon Kim*, Yeongjo Min*, Daehwan Kim*, Gyuseong Lee, **Junyoung Seo**, Kwangrok Ryoo, Seungryong Kim, "ConMatch: Semi-Supervised Learning with Confidence-Guided Consistency Regularization",
European Conference on Computer Vision (**ECCV**), 2022.

9. Jiwon Kim*, Kwangrok Ryoo*, **Junyoung Seo***, Gyuseong Lee*, Daehwan Kim, Hansang Cho, Seungryong Kim, "Semi-Supervised Learning of Semantic Correspondence with Pseudo-Labels",
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022.

Education

Korea Advanced Institute of Science and Technology (KAIST) Seoul, Korea
Integrated M.S./Ph.D. in Artificial Intelligence 2024 - 2027 *(expected)*

Korea University Seoul, Korea
Integrated M.S./Ph.D. in Computer Science and Engineering 2022 - 2024
- Transferred to KAIST with supervisor (degree incomplete).

Korea University Seoul, Korea
B.S. in Electrical Engineering 2016 - 2022

Etc.

Academic Service (Reviewer): NeurIPS, ICLR, ICML, CVPR, ICCV, ECCV, AAAI, TPAMI, and WACV.

Military obligation: Republic of Korea Air Force, Feb. 2018 - Jan. 2020.