

Dongseok Shim

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Research Interest

Multimodal Generative Models, Diffusion Models, 3D Vision

Education

Seoul National University Mar 2022 - Feb 2025

Ph.D. in Artificial Intelligence GPA: 3.80/4.3

• Advisor: H. Jin Kim

• Dissertation: Synthetic-to-Real Domain Adaptation for Depth Estimation via Deep Generative Models

Seoul National University Mar 2020 - Feb 2022

M.S. in Aerospace Engineering GPA: 3.85/4.3

• Advisor: H. Jin Kim

• Thesis: Unsupervised Depth Estimation using Monocular Sequences via Hierarchical Transformer and Densely Cascaded Network

Seoul National University Mar 2016 - Feb 2020

B.S. in Mechanical Engineering GPA: 3.56/4.3

• Advisor: Kyu-Jin Cho

• Thesis: Respiratory Pattern Estimation for Rehabilitation Robot via Transfer Learning

Experience

Sony Group Corporation Tokyo, Japan

Research Scientist Apr. 2025 - Present

• Develop multimodal audio generation models conditioned on visual cues such as semantic labels, depth, and text

• Develop multimodal human motion generation models that synthesize human motions from text, music, and video

TikTok (ByteDance Inc.) San Jose, California, United States

Ph.D. Research Intern Apr. 2024 - Sep. 2024

• Developed text-to-3D generative models within the AI-Generated Content (AIGC) team

• Integrated Stable Diffusion with Neural Radiance Fields (NeRF) and Gaussian Splatting for text-to-3D generation

• Fine-tuned diffusion models to generate diverse object viewpoints for relightable 3D reconstruction

Selected Publications

¹Shared first authorship

[1] **Dongseok Shim**, Yichun Shi, Kejie Li, H. Jin Kim, and Peng Wang, "MVLIGHT: Relightable text-to-3D Generation via Light-conditioned Multi-view Diffusion", *arXiv preprint*.

[2] **Dongseok Shim** and H. Jin Kim, "SEDiff: Structure Extraction for Domain Adaptive Depth Estimation via Denoising Diffusion Models", in *2024 European Conference on Computer Vision (ECCV)*.

[3] **Dongseok Shim** and H. Jin Kim, "DIVIDE: Learning a Domain-Invariant Geometric Space for Depth Estimation", in *2024 IEEE Robotics and Automation Letters (RA-L)*.

[4] Jeongjun Choi¹, **Dongseok Shim**¹, and H. Jin Kim, "DiffuPose: Monocular 3D Human Pose Estimation via Denoising Diffusion Probabilistic Model", in *2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*.

[5] **Dongseok Shim**¹, Seungjae Lee¹, and H. Jin Kim, "SNeRF: Semantic-aware Neural Radiance Fields for Reinforcement Learning", in *2023 Fortieth International Conference on Machine Learning (ICML)*.

[6] **Dongseok Shim** and H. Jin Kim, "SwinDepth: Unsupervised Depth Estimation using Monocular Sequences via Swin Transformer and Densely Cascaded Network", in *2023 IEEE International Conference on Robotics and Automation (ICRA)*.

[7] Daesol Cho¹, **Dongseok Shim**¹, and H. Jin Kim, "S2P: State-conditioned Image Synthesis for Data Augmentation in Offline Reinforcement Learning", in *2022 Thirty-sixth Conference on Neural Information Processing Systems (NeurIPS)*.

[8] **Dongseok Shim** and H. Jin Kim, "Learning a Geometric Representation for Data-Efficient Depth Estimation via Gradient Field and Contrastive Loss", in *2021 IEEE International Conference on Robotics and Automation (ICRA)*.

Awards

• Best Doctoral Dissertation Award Honorable Mention

Academic Services

• Reviewer: CVPR, ICCV, ECCV, NeurIPS, ICML, ICLR, ICRA, IROS