

Donghyeon Soon

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Education

DGIST (Daegu Gyeongbuk Institute of Science & Technology)
B.S. in Computer & Electronics Engineering

Daegu, South Korea
Feb 2022 – Aug 2026
(expected)

- Focus: Computer Science, Artificial Intelligence, 3D Vision, Robotics
- Coursework: Computer Vision, Machine Learning, Deep Learning, Graphics

Research Interests

- 3D vision and generative modeling for reconstructing, animating, and generating dynamic 3D/4D content.
- Human and animal reconstruction using synthetic data pipelines, parametric models, and image/video-to-3D/4D methods.

Experience

Research Intern

Intelligent Systems and Learning Lab (Advisor: Prof. Daehee Park), DGIST

Daegu, South Korea
Dec 2025 – Present

- Research on scene-aware human motion prediction, focusing on environment-aware future trajectory and pose estimation.

Research Collaborator

The University of Texas at Austin (with Hezhen Hu)

Austin, Texas, USA
(Remote)
Jun 2025 – Present

- Collaborating on 3D/4D reconstruction, human and animal generative modeling, and expressive multi-person motion data.

KIC Tech Frontier Program Participant

UC Berkeley & KIC

Berkeley, California, USA
Jun 2025 – Aug 2025

- Conducted a startup project on real-time 3D human motion estimation and technology commercialization.

Research Intern

Computer Vision Lab (Advisor: Prof. Sunghoon Im), DGIST

Daegu, South Korea
Jan 2025 – Feb 2025

- Explored 3D Gaussian-based editing, focusing on Gaussian deformation and style-transfer techniques.
- Implemented a deformation-aware style-transfer pipeline for local geometry manipulation and appearance transfer in Gaussian Splatting radiance fields.

Research Intern

3D Vision & Robotics Lab (Advisor: Prof. Kyungdon Joo), UNIST

Ulsan, South Korea
Jun 2023 – Dec 2024

- Studied generative AI for animatable 3D reconstruction, Gaussian Splatting, and animal/human parametric modeling.
- Co-authored **DogRecon**, an animatable 3D Gaussian dog reconstruction method published in *IJCV 2025*.
- Contributed to pipeline implementation, module development, manuscript writing, and revision.

Publications & Manuscripts

Preprints / Under Review

Scene-aware Human Motion Prediction

Under review

Donghyeon Soon*, Ji Il Yoon*, Hyeondong Kim, Daehee Park[†]

Under review (title anonymized)

Expressive Multi-Dancer Dataset

Under review

Gyeongsu Cho*, **Donghyeon Soon***, Ji Hwan Park, Siddharth Sagar Nijhawan,
Zhiwen Fan, Lanqing Guo, Kyungdon Joo[†], Tamaki Kojima[†], Hezhen Hu[†], Zhangyang Wang[†]
Under review (title anonymized)

International

AniGauss: Toward Animatable Animal Reconstruction from Single In-the-Wild Images via Topology-Aware Gaussians 2026

Gyeongsu Cho, Changwoo Kang, **Donghyeon Soon**, Hezhen Hu, Kyungdon Joo[†]
CV4Animals Workshop at CVPR 2026

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WildAni4D: Towards 4D Animal Mesh Reconstruction 2026

Gyeongsu Cho, Hezhen Hu, **Donghyeon Soon**, Changwoo Kang, Kyungdon Joo[†]
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2026 Findings

Not Like Transformers: Drop the Beat Representation for Dance Generation with Mamba-Based Diffusion Model Mar 2026

Sangjune Park, Inhyeok Choi, **Donghyeon Soon**, Youngwoo Jeon, Kyungdon Joo[†]
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2026
Also presented at ICCV 2025 Workshop on Gen4AVC

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DogRecon: Canine Prior-Guided Animatable 3D Gaussian Dog Reconstruction From a Single Image 2025

Gyeongsu Cho, Changwoo Kang, **Donghyeon Soon**, Kyungdon Joo[†]
International Journal of Computer Vision (IJCV), 2025
Also presented at IEEE CVPR 2024 Workshop on CV4Animals

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Domestic

Foothold Planning 2026

Taebok Lee*, **Donghyeon Soon***, Kyungdon Joo[†]
ICROS, 2026

Improving Geometric Processing with Plane-aware Perturbation Uncertainty and Inference-time Control for Monocular Depth Estimation 2026

Donghyeon Soon*, Minseok Oh*, Sangchul Lee[†]
Korea Artificial Intelligence Conference, 2026

CC-RAG: Confidence-Controlled Retrieval-Augmented Generation 2026

Donghyeon Soon*, Minseok Oh*, Sangchul Lee[†]
Korea Artificial Intelligence Conference, 2026

Next-Scale Inversion Based Reference-Guided T2I Style Transfer 2026

Minseok Oh*, **Donghyeon Soon***, Sangchul Lee[†]
Korea Artificial Intelligence Conference, 2026 (Outstanding Paper Award)

Grid-based Local Homography Model for Panorama Stitching under Parallax 2026

Donghyeon Soon, Minseok Oh, Taebok Lee
Korea Artificial Intelligence Conference, 2026

Ghost Flare Localization and Removal Via Convex Sparse Template Selection 2026

Minseok Oh*, **Donghyeon Soon***, Sangchul Lee†
Korea Artificial Intelligence Conference, 2026

Enhancing Underwater Object Detection via Conditional Diffusion Model-based Preprocessing and Augmentation 2025

Donghyeon Soon*, Taebok Lee*
*Korea Artificial Intelligence Conference, 2025 (*Outstanding Paper Award*)*

*Equal contribution. †Advisor/corresponding author.

Selected Projects

Scene-aware Human Motion Prediction *Dec 2025 – Present*
DGIST ISL Lab

- Developed a framework for human motion prediction that captures interactions with the surrounding environment.
- Targets improved future trajectory and pose estimation in scene-aware settings.

Expressive Multi-Dancer Dataset 2026
UT Austin & UNIST

- Built a large-scale expressive multi-dancer dataset with automated annotations.
- Includes world-grounded multi-person SMPL-X motion, detailed hand articulation, facial expressions, audio, and structured text descriptions.

AniGauss: Topology-Aware Animatable Animal Reconstruction 2026
UNIST & UT Austin

- Designed a feed-forward single-image animal reconstruction pipeline using canonical view generation and SMAL-topology-aware Gaussians.
- Project page: vision3d-lab.github.io/anigauss 

KIC Tech Frontier Program: Real-Time 3D Human Motion Estimation *Jun 2025 – Aug 2025*
UC Berkeley & KIC

- Conducted a startup-oriented project on real-time 3D human motion estimation.
- Participated in entrepreneurship and technology commercialization activities through the KIC Tech Frontier Program.

Skills

Programming: Python, C++, C, CUDA, Bash

Frameworks & Tools: PyTorch, OpenCV, Git, LaTeX, Gaussian Splatting pipelines

Domains: 3D/4D Vision, Generative Modeling, Diffusion Models, Gaussian Splatting, Human Motion Prediction, Human/Animal Reconstruction, Parametric Models (SMAL, SMPL, SMPL-X), Pose Estimation, Synthetic Data Generation, Robotics