

# Sungwon Hwang

PH.D CANDIDATE  
KAIST GRADUATE SCHOOL OF ARTIFICIAL INTELLIGENCE

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I am a third-year Ph.D. candidate at the KAIST Graduate School of AI under supervision of Dr. Jaegul Choo.

My key research areas of interest include, but are not limited to:

- **3D generative world modeling via diffusion models**
- **Image-based neural 3D reconstruction and editing models**

## Education

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### Korea Advanced Institute of Science and Technology

PH.D CANDIDATE | THE GRADUATE SCHOOL OF ARTIFICIAL INTELLIGENCE

- Advisor: Dr. Jaegul Choo

Seongnam, Korea

Feb. 2022 - present

### Korea Advanced Institute of Science and Technology

M.SC. | THE ROBOTICS PROGRAM, SCHOOL OF ELECTRICAL ENGINEERING

- Advisor: Dr. Hyun Myung

Daejeon, Korea

Feb. 2020 - Feb. 2022

### Korea Advanced Institute of Science and Technology

B.ENG. | DEPARTMENT OF MECHANICAL ENGINEERING

Daejeon, Korea

Aug. 2014 - Feb. 2020

## Professional Experience

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### NAVER LABS

RESEARCH INTERN

- Advisor: Dr. Suyong Yeon

Spatial AI

July. 2024 - Oct. 2024

## Publications

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C: Conference / J: Journal / P: pre-print / \*: equal contribution

### [C07] *SurFhead: Affine Rig Blending for Geometrically Accurate 2D Gaussian Surfel-based Head Avatars*

Jaeseong Lee\*, Taewoong Kang\*, Marcel Buehler, Min-Jung Kim, **Sungwon Hwang**, Junha Hyung, Hyojin Jang, Jaegul Choo  
The International Conference on Learning Representations (**ICLR**), 2025.

### [C06] *Effective Rank Analysis and Regularization for Enhanced 3D Gaussian Splatting*

Junha Hyung, Susung Hong, **Sungwon Hwang**, Jaeseong Lee, Jaegul Choo, Jin-Hwa Kim  
Neural Information Processing Systems (**NeurIPS**), 2024.

### [C05] *VEGS: View Extrapolation of Urban Scenes in 3D Gaussian Splatting using Learned Priors*

**Sungwon Hwang**\*, Min-Jung Kim\*, Taewoong Kang, Jayeon Kang, Jaegul Choo  
European Conference on Computer Vision (**ECCV**), 2024.

### [C04] *FaceCLIPNeRF: Text-driven 3D Face Manipulation using Deformable Neural Radiance Fields*

**Sungwon Hwang**, Junha Hyung, Daejin Kim, Min-Jung Kim, Jaegul Choo  
IEEE/CVF International Conference on Computer Vision (**ICCV**), 2023.

### [C03] *Local 3D Editing via 3D Distillation of CLIP Knowledge*

Junha Hyung, **Sungwon Hwang**, Daejin Kim, Hyunji Lee, Jaegul Choo  
IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023.

**[C02]** *Equivariance-bridged  $SO(2)$ -Invariant Representation Learning using Graph Convolutional Network*

**Sungwon Hwang**, Hyungtae Lim, Hyun Myung  
The British Machine Vision Conference (**BMVC**). 2021.

**[J01]** *ERASOR: Egocentric Ratio of Psuedo Occupancy-based Dynamic Object Removal for Static 3D Point Cloud Map Building*

Hyungtae Lim, **Sungwon Hwang**, Hyun Myung  
IEEE Robotics and Automation Letters (**RA-L**). 2021.

**[C01]** *Normal Distributions Transform is Enough: Real-time 3D Scan Matching for Pose Correction of Mobile Robot under Large Odometry Uncertainties*

Hyungtae Lim\*, **Sungwon Hwang\***, Sungjae Shin, Hyun Myung  
International Conference on Control, Automation and Systems (**ICCAS**). 2020.