Sungwon Hwang

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I am a third-year Ph.D student at KAIST Graduate School of Artificial Intelligence under supervision of Dr. Jaegul Choo. My research interest lies in 3D reconstruction and generation via neural inverse rendering methods such as NeRF or 3D Gaussian Splatting.

Education

Korea Advanced Institute of Science and Technology *Seongnam, Korea*
Ph.D Candidate | The Graduate School of Artificial Intelligence *Feb. 2022 - present*
- Advisor: Dr. Jaegul Choo

Korea Advanced Institute of Science and Technology *Daejeon, Korea*
M.Sc. | The Robotics Program, School of Electrical Engineering *Feb. 2020 - Feb. 2022*
- Advisor: Dr. Hyun Myung

Korea Advanced Institute of Science and Technology *Daejeon, Korea*
B.Eng. | Department of Mechanical Engineering *Aug. 2014 - Feb. 2020*

Publications

C: Conference / J: Journal / P: preprint / *: equal contribution

[P02] *Effective Rank Analysis and Regularization for Enhanced 3D Gaussian Splatting*
Junha Hyung, Susung Hong, **Sungwon Hwang**, Jaeseong Lee, Jaegul Choo, Jin-Hwa Kim
arXiv, Under Review.

[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*.

[P01] *Text2Control3D: Controllable 3D Avatar Generation in Neural Radiance Fields using Geometry-Guided Text-to-Image Diffusion Model*
Sungwon Hwang, Junha Hyung, Jaegul Choo
arXiv. *2023*.

[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*.

Awards, & Grants

Awards

2020 **Student Best Paper Award**, Int'l Conf. on Control, Automation and Systems (ICCAS)