Jumin Lee

Ph.D. Candidate

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Research Interest

My research lies at the intersection of 3D vision and computer vision, with a particular interest in generating 3D scenes using diffusion models. This work aims to generate realistic 3D scenes, which can be utilized in various applications such as autonomous driving and virtual simulations. Building on my current work, I aim to develop models that not only generate 3D scenes with temporal consistency but also function as world models.

Education

KAIST(Korea Advanced Institute of Science and Technology)   *Daejeon, S.Korea*
Ph.D in School of Computing   *Mar. 2024 - Current*

- Advisor: Sung-Eui Yoon

KAIST(Korea Advanced Institute of Science and Technology)   *Daejeon, S.Korea*
M.S. in Artificial Intelligence   *Mar. 2022 - Mar. 2024*

- Advisor: Sung-Eui Yoon
- GPA: 4.04/4.3

Sung Kyun Kwan University   *Suwon, S.Korea*
B.S. in Applied Artificial Intelligence and Mechanical Engineering   *Mar. 2017 - Mar. 2022*

- GPA: 4.02/4.5

Publication

Regularizing Dynamic Radiance Fields with Kinematic Fields

Woobin Im, Geonho Cha, Sebin Lee, **Jumin Lee**, Juhyeong Seon, Dongyoon Wee, and Sung-Eui Yoon

- European Conference on Computer Vision(ECCV), 2024.

Extending Segment Anything Model into Auditory and Temporal Dimensions for Audio-Visual Segmentation

Juhyeong Seon, Woobin Im, Sebin Lee, **Jumin Lee**, and Sung-Eui Yoon

- International Conference on Image Processing(ICIP), 2024.

SemCity: Semantic Scene Generation with Triplane Diffusion

Jumin Lee*, Sebin Lee*, Changho Jo, Woobin Im, Juhyeong Seon, and Sung-Eui Yoon

- Computer Vision and Pattern Recognition(CVPR), 2024.
- 140 stars on `https://github.com/zoomin-lee/SemCity`

Diffusion Probabilistic Models for Scene-Scale 3D Categorical Data   *Oral Paper*

Jumin Lee, Woobin Im, Sebin Lee, and Sung-Eui Yoon

- Image Processing and Image Understanding(IPIU), 2023.
- 156 stars on `https://github.com/zoomin-lee/scene-scale-diffusion`

Work Experience

Computer Vision and Artificial Intelligence Lab, AICT   *Suwon, S.Korea*
Intern   *Oct. 2020 Dec. 2020*

• Research 3D Object Detection with Stereo Vision.

Awards

2024   **Winner**, National Research Foundation of Korea Ph.D. Fellowship
2023   **Grand Prize**, The Korea Institute of Broadcast and Media Engineers, IPIU
2020   **Encouragement Prize**, Director, Institute of AICT
2019   **Grand Prize**, Autonomous Vehicle Competition, Sungkyunkwan University