Jungho **Lee**

PH.D Candidate

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RESEARCH INTERESTS

3D Vision

- Neural View Synthesis
- 3D Scene Reconstruction

Human Motion Analysis

- Human Avatar Generation
- Skeleton-based Action Recognition

Mathematical Machine Learning Tool

- Neural Ordinary Differential Equations

EDUCATION

Yonsei University | College of Engineering — *Seoul, South Korea*

Interated M.S./Ph.D in Electrical and Electronic Engineering — *Sep. 2021 - Aug. 2026 (Expected)*

- Image and Video Pattern Recognition Lab.
- Advisor: Prof. Sangyoun Lee

Yonsei University | College of Engineering — *Seoul, South Korea*

B.S. in Electrical & Electronic Engineering — *Mar. 2015 - Aug. 2021*

- 2-Year Military Service (2017-2019)

RESEARCH EXPERIENCE

NAVER Cloud — *Seongnam, South Korea*

Research Intern — *Aug. 2024 - Feb. 2025*

- 3D Scene Representation from Defocused Images
- 3D Human Avater Generation
- Mentor: Ho-Deok Jang

PUBLICATIONS

First-Author Papers

SwiftVGGT: A Scalable Visual Geometry Grounded Transformer for Large-Scale Scenes *2026*

Jungho Lee, Minhyeok Lee, Sunghun Yang, Minseok Kang, Sangyoun Lee

*Proceedings of the IEEE/CVF Computer Vision and Pattern Recognition (**CVPR**) Findings*

CoMoGaussian: Continuous Motion-Aware Gaussian Splatting from Motion-Blurred Images *2025*

Jungho Lee, Donghyeong Kim, Dogyoon Lee, Suhwan Cho, Minhyeok Lee, Wonjoon Lee, Taeoh Kim, Dongyoon Wee, Sangyoun Lee

*Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV**)*

CoCoGaussian: Leveraging Circle of Confusion for Gaussian Splatting from Defocused Images *2025*

Jungho Lee, Suhwan Cho, Taeoh Kim, Ho-Deok Jang, Minhyeok Lee, Geonho Cha, Dongyoon Wee, Dogyoon Lee, Sangyoun Lee

*Proceedings of the IEEE/CVF Computer Vision and Pattern Recognition (**CVPR**)*

SMURF: Continuous Dynamics for Motion-Deblurring Radiance Fields *2025*

Jungho Lee, Dogyoon Lee, Minhyeok Lee, Donghyeong Kim, Sangyoun Lee

*2nd Workshop on Neural Fields Beyond Conventional Cameras (**CVPRW**)*

Hierarchically Decomposed Graph Convolutional Networks for Skeleton-Based Action Recognition *2023*

Jungho Lee, Minhyeok Lee, Dogyoon Lee, Sangyoun Lee

*Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV**)*

Leveraging Spatio-Temporal Dependency for Skeleton-Based Action Recognition *2023*
Jungho Lee, Minhyeok Lee, Suhwan Cho, Sungmin Woo, Sungjun Jang, Sangyoun Lee
*Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV**)*

Conference Proceedings

MoRGS: Efficient Per-Gaussian Motion Reasoning for Streamable Dynamic 3D Scenes *2026*
Wonjoon Lee, Sungmin Woo, Donghyeong Kim, **Jungho Lee**, Sangheon Park, Sangyoun Lee
*Proceedings of the IEEE/CVF Computer Vision and Pattern Recognition (**CVPR**)*

SwiftVGGT: A Scalable Visual Geometry Grounded Transformer for Large-Scale Scenes *2026*
Jungho Lee, Minhyeok Lee, Sunghun Yang, Minseok Kang, Sangyoun Lee
*Proceedings of the IEEE/CVF Computer Vision and Pattern Recognition (**CVPR**) Findings*

MonoCLUE: Object-Aware Clustering Enhances Monocular 3D Object Detection *2026*
Sunghun Yang, Minhyeok Lee, **Jungho Lee**, Sangyoun Lee
*The Association for the Advancement of Artificial Intelligence (**AAAI**)*

GenCLIP: Generalizing CLIP Prompts for Zero-Shot Anomaly Detection *2025*
Donghyeong Kim, Chaewon Park, Suhwan Cho, Hyeonjeong Lim, Minseok Kang, **Jungho Lee**, Sangyoun Lee
*The 3rd Workshop in Vision-based InduStrial InspectiON (**ICCVW**)*

Find First, Track Next: Decoupling Identification and Propagation in Referring Video Object Segmentation *2025*
Suhwan Cho, Seunghoon Lee, Minhyeok Lee, **Jungho Lee**, Sangyoun Lee
*The 7th Large-Scale Object Segmentation (LSVOS) Workshop (**ICCVW**)*

DepthFlow: Exploiting Depth-Flow Structural Correlations for Unsupervised Video Object Segmentation *2025*
Suhwan Cho, Minhyeok Lee, **Jungho Lee**, Donghyeong Kim, Sangyoun Lee
*The 7th Large-Scale Object Segmentation (LSVOS) Workshop (**ICCVW**)*

TransFlow: Motion Knowledge Transfer from Video Diffusion Models to Video Salient Object Detection *2025*
Suhwan Cho, Minhyeok Lee, **Jungho Lee**, Sunghun Yang, Sangyoun Lee
*The 7th Large-Scale Object Segmentation (LSVOS) Workshop (**ICCVW**)*

CoMoGaussian: Continuous Motion-Aware Gaussian Splatting from Motion-Blurred Images *2025*
Jungho Lee, Donghyeong Kim, Dogyoon Lee, Suhwan Cho, Minhyeok Lee, Wonjoon Lee, Taeoh Kim, Dongyoon Wee, Sangyoun Lee
*Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV**)*

CMTM: Cross-Modal Token Modulation for Unsupervised Video Object Segmentation *2025*
Inseok Jeon, Suhwan Cho, Minhyeok Lee, Seunghoon Lee, Minseok Kang, **Jungho Lee**, Chaewon Park, Donghyeong Kim, Sangyoun Lee
IEEE International Conference on Image Processing (ICIP)

CoCoGaussian: Leveraging Circle of Confusion for Gaussian Splatting from Defocused Images *2025*
Jungho Lee, Suhwan Cho, Taeoh Kim, Ho-Deok Jang, Minhyeok Lee, Geonho Cha, Dongyoon Wee, Dogyoon Lee, Sangyoun Lee
*Proceedings of the IEEE/CVF Computer Vision and Pattern Recognition (**CVPR**)*

Effective SAM Combination for Open-Vocabulary Semantic Segmentation *2025*
Minhyeok Lee, Suhwan Cho, **Jungho Lee**, Sunghun Yang, Heeseung Choi, Ig-Jae Kim, Sangyoun Lee
*Proceedings of the IEEE/CVF Computer Vision and Pattern Recognition (**CVPR**) - **Oral Presentation***

SMURF: Continuous Dynamics for Motion-Deblurring Radiance Fields *2025*
Jungho Lee, Dogyoon Lee, Minhyeok Lee, Donghyeong Kim, Sangyoun Lee
*2nd Workshop on Neural Fields Beyond Conventional Cameras (**CVPRW**)*

Video Diffusion Models are Strong Video Inpainter *2025*
Minhyeok Lee, Suhwan Cho, Chajin Shin, **Jungho Lee**, Sunghun Yang, Sangyoun Lee
*The Association for the Advancement of Artificial Intelligence (**AAAI**)*

Guided Slot Attention for Unsupervised Video Object Segmentation *2024*
Minhyeok Lee, Dogyoon Lee, Suhwan Cho, Chaewon Park, **Jungho Lee**, Sangyoun Lee
*Proceedings of the IEEE/CVF Computer Vision and Pattern Recognition (**CVPR**)*

Hierarchically Decomposed Graph Convolutional Networks for Skeleton-Based Action Recognition *2023*

Jungho Lee, Minhyeok Lee, Dogyoon Lee, Sangyoun Lee

*Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV**)*

Leveraging Spatio-Temporal Dependency for Skeleton-Based Action Recognition *2023*

Jungho Lee, Minhyeok Lee, Suhwan Cho, Sungmin Woo, Sungjun Jang, Sangyoun Lee

*Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV**)*

Detection-Identification Balancing Margin Loss for One-Stage Multi-Object Tracking *2022*

Heansung Lee, Suhwan Cho, Sungjun Jang, **Jungho Lee**, Sangyoun Lee

IEEE International Conference on Image Processing (ICIP)

Journals

Sparse-DeRF: Deblurred Neural Radiance Fields from Sparse View *2025*

Dogyoon Lee, Donghyeong Kim, **Jungho Lee**, Minhyeok Lee, Seunghoon Lee, Sangyoun Lee

*IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**)*

Treating Motion as Option with Output Selection for Unsupervised Video Object Segmentation *2025*

Suhwan Cho, Minhyeok Lee, **Jungho Lee**, Myeongah Cho, Sangyoun Lee

IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)

Multi-Scale Structural Graph Convolutional Network for Skeleton-Based Action Recognition *2024*

Sungjun Jang, Heansung Lee, Woojin Kim, **Jungho Lee**, Sungmin Woo, Sangyoun Lee

IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)

Preprinted Papers

- **[Submitted to PR]** D. Kim, C. Park, S. Cho, H. Lim, M. Kang, **J. Lee**, S. Lee. GenCLIP: Generalizing CLIP Prompts for Zero-shot Anomaly Detection. *arXiv preprint arXiv:2504.14919*, 2025.
- **[Submitted to PR]** M. Lee, D. Lee, **J. Lee**, S. Cho, S. Lee. Synchronizing Vision and Language: Bidirectional Token-Masking AutoEncoder for Referring Image Segmentation. *arXiv preprint arXiv:2311.17952*, 2025.

PATENTS

Domestic Patent

- [**P3**] Palmprint Recognition Method. KR-Application No.10-2023-0156996, Nov., 2023.
- [**P2**] Skeleton Graph-based Action Recognition Device and Method. KR-Application No.10-2023-0123693, Sep., 2023.
- [**P1**] Video Anomaly Detection Apparatus and Method using Relational Embedding. KR-Application No.10-2022-0156968, Nov., 2022.

PROJECTS

Research on Robust Neural Rendering-Based Large-Scale 3D Ultra-Precision Virtual Space Generation and Spatial Registration for Low-Quality Noisy Data *National Research Foundation of Korea*

Deep Learning Researcher *May. 2024 - Apr. 2027*

- Development of large scene reconstruction by 3D Gaussian Splatting.

Collaborative Perception and Intelligence Framework for Hyper-connected Interaction among Human and Intelligent Things *Korea Electronics Technology Institute*

Deep Learning Researcher *Apr. 2024 - Dec. 2025*

- Development of efficient skeleton-based action recognition model.

Development of Anti-spoofing Model for Face Recognition Based on RGB Camera *Samsung Electronics*

Deep Learning Researcher *Aug. 2023 - Jul. 2024*

- Development of face anti-spoofing model robust to various spoofing attack.

Development of Mobile Palmprint Recognition Algorithm *Samsung Electronics*

Deep Learning Researcher *Aug. 2022 - Jul. 2023*

- Development of one-stage real-time mobile network, which includes keypoint detection and palmprint recognition.
- Development of real-time Android demo application for palmprint recognition.

Deep Learning-Based Initial Identification and Tracking System for Missing Persons in Heterogeneous CCTV Images — *National Research Foundation of Korea*

Deep Learning Researcher — *Oct. 2018 - Dec. 2022*

- Development of real-time multi-object tracking algorithm robust to occluded person.

Development of AI Multi-Object Tracking and Behavior Analysis Technology — *Hanwha Techwin*

Deep Learning Researcher — *Oct. 2020 - Oct. 2021*

- Development of robust feature extractor for the object detection network.

Professional Services

Invited Talks

- *"3D Neural View Synthesis from Degraded Images,"* NAVER AI Lab — *Jul. 2025*
- *"3D Neural View Synthesis from Degraded Images,"* Korean Electronics Technology Institute — *Jul. 2025*
- *"Leveraging Circle of Confusion for 3D Neural View Synthesis,"* Korean Photonics Technology Institute — *May. 2025*

Journal Reviewer

- IEEE Transactions on Graphics (**TOG**) — *2025*
- International Journal of Computer Vision (**IJCV**) — *2024*
- IEEE Transactions on Multimedia (**TMM**) — *2024*
- IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**) — *2023*
- IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**) — *2023*
- IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**) — *2023*

Conference Reviewer

- Association for the Advancement of Artificial Intelligence (**AAAI**) — *2026*
- IEEE/CVF Computer Vision and Pattern Recognition (**CVPR**) - **Outstanding Reviewer (top 5%)** — *2025*
- Conference on Neural Information Processing Systems (**NeurIPS**) — *2024*
- European Conference on Computer Vision (**ECCV**) — *2024*
- IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**) — *2024*

TEACHING EXPERIENCES

Understanding and Using AI — *Yonsei University*

Teaching Assistant — *Spring 2022 - Spring 2025*

Deep Learning Lab. — *Yonsei University*

Teaching Assistant — *Spring 2023*

Digital Locig Circuit — *Yonsei University*

Teaching Assistant — *Fall 2021*

SKILLS

Research and Development Stacks

Main Languages	**Python**, **C/C++**, **MATLAB**, Kotlin
Machine Learning	**PyTorch**, **TensorFlow**, Keras
Computer Vision	**OpenCV**