

Jongmin Lee

3D Computer Vision Researcher

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SUMMARY

I am a Postdoctoral Researcher at KAIST (Kim Jaechul Graduate School of AI) in Seoul, working with Prof. Seungryong Kim. I received my Integrated M.S./Ph.D. in Computer Science and Engineering from Seoul National University under the supervision of Prof. Sungjoo Yoo, with a dissertation on integrating dense matching into Structure-from-Motion. As a 3D vision researcher, my work spans image matching, visual localization, 3D reconstruction, and depth estimation. I am currently expanding my research toward 3D/4D generation, including 3D scene generation and world models.

RESEARCH EXPERIENCE

KAIST, Kim Jaechul Graduate School of AI Mar 2026 – Present
Postdoctoral Researcher, CVLAB (Prof. Seungryong Kim) Seoul, Korea

- Research on 3D/4D reconstruction and generation.
- Autoregressive 4D generation, geometry-supervised video generation, 3D scene generation, world models.

Naver Labs Korea Jul 2025 – Dec 2025
Collaborating Researcher, Spatial AI Team Seongnam, Korea

- 3D reconstruction and depth completion for panoramic images.

Seoul National University, CMALAB Mar 2021 – Feb 2026
Ph.D. Researcher (Prof. Sungjoo Yoo) Seoul, Korea

- Integrated dense matching into Structure-from-Motion for more accurate correspondences, camera poses, and 3D points: Dense-SfM (CVPR 2025) and MV-RoMa (CVPR 2026 Highlight).
- Research on keypoint description, visual localization, and 3D reconstruction (CVPRW 2023).

Naver Labs Jan 2023 – Aug 2023
Research Intern, Spatial AI Team (supervisor: Jerome Revaud) Seongnam, Korea

- Model-free, one-shot object pose estimation (MFOS, AAAI 2024, first author).
- Scene-agnostic coordinate regression for visual localization (SACReg, CVPRW 2024).

Seoul National University, CMALAB Jun 2020 – Feb 2021
Undergraduate Research Intern Seoul, Korea

- Monocular depth estimation.

PUBLICATIONS

L3G-World: Real-Time Infinite World Generation with Latent 3D Gaussian Memory Preprint 2026
Jinhyeok Choi*, JongBin Lee*, **Jongmin Lee**, Minkyong Jeon, Jiyoung Kim, Kaeun Han, Yoonjin Yoon, Seungryong Kim
[arXiv] [Project]
Keywords: World model, 3D Gaussian splatting, Long-horizon video generation, Real-time generation

Tetris3D: 3D Scene Generation With Objects That Fit Together Preprint 2026
Jaeyeong Kim, Jinhyuk Jang, **Jongmin Lee**, Kyehong Park, Seungryong Kim
[arXiv] [Project]
Keywords: 3D Scene generation, Single-image 3D reconstruction, Physical plausibility

MVTrack4Gen: Multi-View Point Tracking as Geometric Supervision for 4D Video Generation Preprint 2026
JongBin Lee, Jaewoo Jung, **Jongmin Lee**, Tongmin Kim, Hyunsung Kim, Takuya Narihira, Kazumi Fukuda, Jahyeok Koo, Jisang Han, Yuki Mitsufuji, Seungryong Kim
[arXiv] [Project]
Keywords: 4D Video generation, Multi-view point tracking

MORPHOS: Autoregressive 4D Generation with Temporal Structured Latents Preprint 2026
Minkyung Kwon*, Jinhyeok Choi*, Youngjin Shin, Jaeyeong Kim, **Jongmin Lee**, Seungryong Kim
[arXiv] [Project]
Keywords: 4D Generation, Autoregressive generation

MV-RoMa: From Pairwise Matching into Multi-View Track Reconstruction CVPR 2026 ★ Highlight
Jongmin Lee*, Seungyeop Kang*, Sungjoo Yoo
[arXiv] [Project]
Keywords: Multi-view dense matching, Track reconstruction, Structure-from-Motion

Dense-SfM: Structure from Motion with Dense Consistent Matching

Jongmin Lee, Sungjoo Yoo

Keywords: Structure-from-Motion, Dense matching, Gaussian Splatting, Track refinement

CVPR 2025

[arXiv] [Project]

MFOS: Model-Free & One-Shot Object Pose Estimation

Jongmin Lee, Yohann Cabon, Romain Brégier, Sungjoo Yoo, Jerome Revaud

Keywords: 6D object pose estimation, Visual localization

AAAI 2024

[arXiv]

SACReg: Scene-Agnostic Coordinate Regression for Visual Localization

Jerome Revaud, Yohann Cabon, Romain Brégier, Jongmin Lee, Philippe Weinzaepfel

Keywords: Visual localization, Scene coordinate regression

CVPRW 2024

[arXiv]

Multi-Scale Local Implicit Keypoint Descriptor for Keypoint Matching

Jongmin Lee, Eunhyeok Park, Sungjoo Yoo

Keywords: Keypoint matching, Visual localization

CVPRW 2023

[Paper]

* Equal contribution

EDUCATION

Seoul National University

Ph.D. in Computer Science & Engineering (Integrated M.S./Ph.D. program)

Advisor: Prof. Sungjoo Yoo · Dissertation on integrating dense matching into Structure-from-Motion

Mar 2021 – Feb 2026

GPA 3.74 / 4.30

Seoul National University

B.S. in Computer Science & Engineering

Mar 2016 – Feb 2021

GPA 3.82 / 4.30

SKILLS

Research areas	Image matching, Structure-from-Motion, Visual localization, SLAM, Depth estimation, Object pose estimation, 3D/4D Reconstruction, 3D/4D Generation
Programming	Python (advanced), C/C++
Frameworks & tools	PyTorch (advanced), Docker, Git, LaTeX
Languages	Korean (native), English (fluent)

SERVICE & OTHER EXPERIENCE

Reviewer, AAAI 2027, IJCV 2026, IROS 2025

2025 – Present

Teaching Assistant, Hardware System Design, Seoul National University

2021 – 2023

System Administrator, Bacchus (CSE department sysadmin group), Seoul National University

2018 – 2021