

Seunghwan Jang

M.S. Student, School of Electrical Engineering, KAIST

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Education

Korea Advanced Institute of Science and Technology (KAIST)

M.S. Student, Department of Electrical & Electronic Engineering

Daejeon, Korea
Sep. 2024 – Present

- Advisor: Prof. SooJean Han

Kyung Hee University

B.S. in Computer Science & Engineering

Yongin, Korea
Mar. 2019 – Aug. 2024

- Advisor: Prof. Hui Yong Kim
- GPA: 4.02 / 4.3 | Summa Cum Laude; **Ranked 1st/97** (College of Software Convergence)

Publications / Preprints

- [1] **Seunghwan Jang** and SooJean Han, “Stratified Hazard Sampling: Minimal-Variance Event Scheduling for CTMC/DTMC Discrete Diffusion and Flow Models,” *arXiv preprint*, Jan. 2026.
- [2] **Seunghwan Jang**[†], Jeongyong Yang^{*}, and SooJean Han, “SafeFlowMatcher: Safe and Fast Planning using Flow Matching with Control Barrier Functions,” *arXiv preprint*, Oct. 2025. (accepted at ICLR 2026) [OpenReview]
- [3] **Seunghwan Jang** and SooJean Han, “Comparison of Compression Codec Algorithms to Image Datasets in 3D Gaussian Splatting Models,” *Workshop on Image Processing and Image Understanding (IPIU)*, Poster, Feb. 2025. (in Korean)

(* Equal contribution; † Corresponding author)

Research Experience

Autonomous Control for Stochastic Systems Lab, KAIST

M.S. Student (Advisor: Prof. SooJean Han)

Daejeon, Korea
Sep. 2024 – Present

- **Safe generative motion planning:** developed *SafeFlowMatcher*, combining flow-matching trajectory generation with Control Barrier Function (CBF-QP) safety filtering for constraint-satisfying planning.
- **3DGS-based perception systems:** building a 3D Gaussian Splatting pipeline for situational awareness / visual sensor networks (AFOSR), emphasizing deployment constraints (latency and bandwidth).

Visual Media Lab, Kyung Hee University

Research Student (Advisor: Prof. Hui Yong Kim)

Yongin, Korea
Aug. 2022 – Aug. 2024

- Built and evaluated MPEG FCM/FCVCM pipelines combining conventional codecs (VVC, HEVC) with neural compression, focusing on rate-accuracy trade-offs and reproducible experiments.
- 3 first-author domestic publications; 10 MPEG FCM/FCVCM standardization contributions; 1 Korean patent.

Electronics and Telecommunications Research Institute (ETRI)

Research Intern

Daejeon, Korea
Jul. 2023 – Aug. 2023

- Supported MPEG standardization efforts by conducting validation experiments and analyzing performance data for FCM/FCVCM.

Projects

Fast, Accurate, and Efficient Situational Awareness using Visual Sensor Networks

Jun. 2025 – Present

Air Force Office of Scientific Research (AFOSR), United States

- Developing a 3D Gaussian Splatting-based visual sensor networks system.

Honors & Awards

Graduated first in class (College of Software Convergence), Kyung Hee University (1st/97)

Aug. 2024

Superiority Scholarship, Kyung Hee University

Feb. 2024

Superiority Scholarship (Half tuition), Kyung Hee University

Aug. 2019

Skills

Programming: Python, C/C++

Robotics/Simulation: MuJoCo, Gym

Machine Learning: PyTorch

Tools: Git, Linux, Docker

Peer Review Experience

IEEE Robotics and Automation Letters (RA-L)

Languages

Korean: Native

English: Professional working proficiency

Japanese: Limited working proficiency