Sangjun Noh

Ph.D. Candidate

+82 10 4070 8147

South Korea

sangjun7@gm.gist.ac.kr

https://github.com/dinnno

Google Scholar

SUMMARY

As a Robotics AI researcher, I specialize in scaling robotic manipulation through sim-to-real methodologies. I have extensive experience leveraging large-scale physics simulators, web-scale datasets, and foundation models to develop robust manipulation skills. Currently, my research focuses on learning robot intelligence from diverse human demonstrations, such as teleoperation and internet videos, aiming to achieve human-level manipulation capabilities.

SKILLS

Languages: Korean (Native), English

Programming: Python (PyTorch), C++, C

EDUCATION

Sep. 2022 – Present

Gwangju Institute of Science and Technology (GIST) — **Advisor: Prof. Kyoobin Lee**

Ph.D. Course, School of Integrated Technology (Robotics Intelligence Program)

Sep. 2020 – Aug. 2022

Gwangju Institute of Science and Technology (GIST) — **Advisor: Prof. Kyoobin Lee**

M.S., School of Integrated Technology (Robotics Intelligence Program)

Thesis: Learning-based 3D Point Cloud Analysis and Applications for Robotic Manipulation in the Real World

Mar. 2015 – Aug. 2019

Dankook University — **Advisor: Prof. Gwanghyeon Baek**

B.S., Mechanical Engineering

PUBLICATIONS

Google Scholar: https://scholar.google.com/citations?hl=ko&user=tqylaI8AAAAJ

Under Review

3D Flow Diffusion Policy: Visuomotor Policy Learning via Generating Flow in 3D Space

Sangjun Noh, Dongwoo Nam, Kangmin Kim, Geonhyup Lee, Yeonguk Yu, Raeyoung Kang, and Kyoobin Lee

Under Review

ManipForce: Force-Guided Policy Learning with Frequency-Aware Representation for Contact-Rich Manipulation

Geonhyup Lee, Youngjin Lee, Kangmin Kim, Seongju Lee, **Sangjun Noh**, Seunghyeok Back, and Kyoobin Lee

Under Review

BiGraspFormer: End-to-End Bimanual Grasp Transformer

Kangmin Kim, Seunghyeok Back, Geonhyup Lee, Sangbeom Lee, **Sangjun Noh**, and Kyoobin Lee

Under Review

Enhancing Multi-Resolution Face Recognition via Cross-Resolution Feature Similarity Knowledge Distillation

Sungho Shin, Yeonguk Yu, **Sangjun Noh**, Junseok Lee, and Kyoobin Lee

International Conference

GraspSAM: When Segment Anything Model *meets* Grasp Detection

IEEE International Conference on Robotics and Automation (ICRA) 2025

Sangjun Noh, Jongwon Kim, Dongwoo Nam, Seunghyeok Back, **Raeyoung** Kang, and Kyoobin Lee

38.67% acceptance / Poster

[Paper] [Homepage] [Code]

International Conference

Domain-Specific Block Selection and Paired-View Pseudo-Labeling for Online Test-Time Adaptation

IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2024

Yeonguk Yu, Sungho Shin, Seunghyeok Back, Minhwan Ko, **Sangjun Noh**, and Kyoobin Lee

23.6% acceptance / Poster

[Paper] [Code]

International Conference

PolyFit: A Peg-in-hole Assembly Framework for Unseen Polygon Shapes via Sim-to-real Adaptation
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2024
Geonhyup Lee*, Joosoon Lee*, **Sangjun Noh**, Minhwan Ko, Kangmin Kim, and Kyoobin Lee
[Paper]

International Conference

Unseen Object Amodal Instance Segmentation via Hierarchical Occlusion Modeling
IEEE International Conference on Robotics and Automation (ICRA) 2022
Seunghyeok Back, Joosoon Lee, Taewon Kim, **Sangjun Noh**, Raeyoung Kang, Seongho Bak, and Kyoobin Lee
[Paper] [Homepage] [Code] [Video]

International Journal

GraspClutter6D: A Large-Scale Dataset for Robotic Grasping and Perception in Clutter
IEEE Robotics and Automation Letters (RA-L)
Seunghyeok Back, Joosoon Lee, Kangmin Kim, Heeseon Rho, Geonhyup Lee, Raeyoung Kang, Sangbeom Lee, **Sangjun Noh**, and Kyoobin Lee
[Paper] [Homepage] [Code]

International Journal

Learning to Place Unseen Objects Stably Using a Large-Scale Simulation
IEEE Robotics and Automation Letters (RA-L)
Sangjun Noh*, Raeyoung Kang*, Taewon Kim*, Seunghyeok Back, Seongho Bak, and Kyoobin Lee
Gold Prize, 29th Samsung Humantech Paper Award (Top 0.7%)
[Paper] [Homepage] [Code]

International Journal

Probability Propagation for Faster and Efficient Point Cloud Segmentation Using a Neural Network
Pattern Recognition Letters (PR-L)
Hogeon Seo*, **Sangjun Noh***, Sungho Shin*, and Kyoobin Lee
[Paper]

International Conference

Fusing RGB and Depth with Self-Attention for Unseen Object Segmentation
International Conference on Control, Automation and Systems (ICCAS) 2021
Joosoon Lee*, Seunghyeok Back*, Taewon Kim, Sungho Shin, **Sangjun Noh**, Raeyoung Kang, Jongwon Kim, and Kyoobin Lee
[Paper]

International Conference

Automatic Detection and Identification of Fasteners with Simple Visual Calibration Using Synthetic Data
IEEE International Conference on Emerging Technologies and Factory Automation (ETFA) 2020
Sangjun Noh*, Seunghyeok Back*, Raeyoung Kang, Sungho Shin, and Kyoobin Lee
[Paper]

PROJECTS

Project Lead — **Skin-Integrated Tactile Robotic Hand for Human-Level Manipulation** — **(Apr. 2024 – Present)**

Project Member
AI & Software Lead
— **Humanoid Robots That Feel, Communicate, and Learn** — **(Jan. 2025 – Present)**

Project Member
AI & Software Lead
— **Core Technology Development of Open Simulator for SDx** — **(Apr. 2024 – Present)**

Project Lead — **Shared Autonomy via Deep RL for Unstructured Assembly** — **(Apr. 2020 – Dec. 2023)**

- Integrated end-to-end system for language-conditioned grasp & handover. [Video]
- Full system demo for assembly assistance. [Video]

Project Member — **Cloud Robot Intelligence Sharing Framework** — **(Apr. 2020 – Dec. 2022)**

- Developed incremental learning for 3D point cloud perception in multi-robot settings.

PATENT-US, JP

2025 — **APPARATUS AND METHOD IDENTIFYING THE SIZE OF THE TARGET OBJECT** — **No. 12,380,586**
Sangjun Noh, Seunghyeok Back, Raeyoung Kang, Sungho Shin, and Kyoobin Lee

2024 **DEEP LEARNING MODEL REAL-TIME ADAPTATION METHOD AND SYSTEM BASED ON BLOCK SELECTION AND TEACHER MODEL** **No. 19/003,696**
Yeonguk Yu, Sungho Shin, Seunghyeok Back, Minhwan Ko, **Sangjun Noh**, and Kyoobin Lee

2024 **STABLE PLANE ESTIMATION METHOD AND SYSTEM FOR PLACING OBJECTS IN A STABLE POSTURE** **No. 19/022,983**
Sangjun Noh, Raeyoung Kang, Taewon Kim, Seunghyeok Back, Seongho Bak, and Kyoobin Lee

2022 **HIERARCHICAL OCCLUSION MODULE AND UNSEEN OBJECT AMODAL INSTANCE SEGMENTATION SYSTEM AND METHOD USING THE SAME (JP)** **No. 7479070**
Seunghyeok Back, Joosoon Lee, Taewon Kim, **Sangjun Noh**, Raeyoung Kang, Seongho Bak, and Kyoobin Lee

2022 **HIERARCHICAL OCCLUSION MODULE AND UNSEEN OBJECT AMODAL INSTANCE SEGMENTATION SYSTEM AND METHOD USING THE SAME (US)** **No. 17/951,282**
Seunghyeok Back, Joosoon Lee, Taewon Kim, **Sangjun Noh**, Raeyoung Kang, Seongho Bak, and Kyoobin Lee

PATENT-KOREA

2025 **METHOD, SYSTEM FOR GENERATING A PHAGE MAP BASED ON OBJECT SEGMENTATION AND, LEARNING METHOD, SYSTEM** **No. 2024-0191306**
Sangjun Noh, Jongwon Kim, Dongwoo Nam, Seunghyeok Back, **Raeyoung** Kang, and Kyoobin Lee

2025 **METHOD AND SYSTEM FOR CONTROLLING ROBOT POSE USING FORCE/TORQUE SENSOR-BASED POSE ESTIMATION** **No. 2025-0043239**
Geonhyup Lee, Joosoon Lee, **Sangjun Noh**, Minhwan Ko, Kangmin Kim, and Kyoobin Lee

2024 **STABLE PLANE ESTIMATION METHOD AND SYSTEM FOR PLACING OBJECTS IN A STABLE POSTURE** **No. 2024-0006012**
Sangjun Noh, Raeyoung Kang, Taewon Kim, Seunghyeok Back, Seongho Bak, and Kyoobin Lee

2024 **DEEP LEARNING MODEL REAL-TIME ADAPTATION METHOD AND SYSTEM BASED ON BLOCK SELECTION AND TEACHER MODEL** **No. 2024-0083249**
Yeonguk Yu, Sungho Shin, Seunghyeok Back, Minhwan Ko, **Sangjun Noh**, and Kyoobin Lee

2022 **HIERARCHICAL OCCLUSION MODULE AND UNSEEN OBJECT AMODAL INSTANCE SEGMENTATION SYSTEM AND METHOD USING THE SAME** **No. 10-2853986**
Seunghyeok Back, Joosoon Lee, Taewon Kim, **Sangjun Noh**, Raeyoung Kang, Seongho Bak, and Kyoobin Lee

2021 **OUT-OF-DISTRIBUTION OBJECT DETECTION METHOD AND SYSTEM** **No. 10-2567558**
Sangjun Noh, Jongwon Kim, Dongwoo Nam, Seunghyeok Back, **Raeyoung** Kang, and Kyoobin Lee

2020 **APPARATUS AND METHOD IDENTIFYING THE SIZE OF THE TARGET OBJECT** **No. 10-2464130**
Sangjun Noh, Seunghyeok Back, Raeyoung Kang, Sungho Shin, and Kyoobin Lee

AWARDS AND HONORS

2025 **Outstanding Paper Award** **ICROS-KROS 2025**

2023 **Gold Prize, 29th Samsung Humantech Paper Award** **Samsung Electronics Co., Ltd. ($10,000)**
Best Paper in Mechanical Engineering

2022 **Outstanding Paper Award** **ICROS-KROS 2022**

2022 **Best Robot Vision Paper Award** **Asian Federation of Computer Vision (AFCV), KROC 2022**

TEACHING EXPERIENCE

Jul. 2025 **Teaching Assistant** **GIST**
AI & Robotics Summer School 2025 (Korea Robotics Society)

- Hands on deep learning (Famous models for image classification, detection, segmentation, generation and foundation models)
- NVIDIA **Isaac Sim** for robotic grasping

Jul. 2024 **Teaching Assistant** **GIST**
AI & Robotics Summer School 2024 (Korea Robotics Society)

- Intro to Intro to Robotics AI (VLA)
- NVIDIA **Isaac Sim** for robotic grasping

Jul. 2023 **Teaching Assistant** **GIST**
AI & Robotics Summer School 2023 (Korea Robotics Society)

- Intro to Robotics AI (Sim2Real)
- NVIDIA **Isaac Sim** for robotic grasping

MENTORING EXPERIENCE

Mar. 2021 – Present **Dongwoo Nam** **GIST**
Currently GIST Ph.D.