Geonkuk Kim

servingrobotmaster.github.io | linkedin.com/in/geonkukkim | ggk0929@gmail.com | +82 10-9354-8472

Research Interest

My research focuses on **vision-language-action (VLA)** and **dexterous manipulation**. I am broadly motivated by the challenge of enabling robots to connect **multimodal understanding (vision & language)** to **fine-grained action generation** for robust, generalizable manipulation in unstructured environments. Recently, I have been particularly interested in leveraging **VLM/VLA-based robot learning** and **affordance-centric representations** to learn dexterous skills from diverse data (e.g., large-scale video), and integrating learning-based policies with **control** and **reinforcement learning** for reliable deployment on real robots.

Education

Korea University, Seoul, Korea *Mar. 2024 – Feb. 2026*
M.S. in Mechanical Engineering
Co-advisor: Prof. Shinsuk Park (Korea University); Dr. Juyoun Park (KIST)

Seoul National University of Science and Technology, Seoul, Korea *Mar. 2018 – Feb. 2024*
B.S. in Mechanical and Automotive Engineering

Gimhae Bunseong High School, Gimhae, Gyeongsangnam-do, Korea *Mar. 2015 – Feb. 2018*
Science-Focused Track

Experiences

- **Student Researcher**, Korea Institute of Science and Technology, Korea *Feb. 2024 – Dec. 2025*
  Context-aware Affordance Learning for Robotic Manipulation
- **Research Intern**, Korea Institute of Science and Technology, Korea *Sep. 2023 – Feb. 2024*
  Development of Visual Affordance Model for Harvesting Apple Tasks
- **Research Student**, Seoul National University of Science and Technology, Korea *Jun. 2022 – Jun. 2023*
  Development of Manipulator Control System Using VR devices
- **Military Service**, The 8th Corps, Republic of Korea Army *Mar. 2020 – Sep. 2021*
  Served as a Personnel Administration Clerk: Responsible for managing personnel affairs for a unit of 400 personnel.

International Conferences & Journal

- **Geonkuk Kim**, Tae-Min Choi, Shinsuk Park, and Juyoun Park*, *"CAG: Context Conditional 2D Affordance Generation"*, IEEE International Conference on Image Processing (ICIP 2025), Alaska, United States (Sep. 2025)
- **Geonkuk Kim**, Tae-Min Choi, and Juyoun Park*, *"VC-2AG: Verb-Conditional 2D Affordance Generation for Robotic Manipulation"*, The 12th International Conference on Robot Intelligence Technology and Applications (RiTA 2024), Ulsan, Korea (Dec. 2024)
- **Geonkuk Kim** and Juyoun Park*, "Visual Affordance Model for Apple Harvesting based on Hybrid Egocentric Dataset Collection," Late breaking result poster, The 2024 IEEE International Conference on Robotics and Automation (ICRA 2024), May, 2024.

Domestic Conferences (Korean)

- Jinsoo Jeong†, Byeongho Lee†, **Geonkuk Kim** and Juyoun Park*, *"Splitted VAE for Dexterous Robotic Hand Manipulation"*, The 21th Korea Robotics Society Annual Conference (KRoC 2026).
- **Geonkuk Kim** and Juyoun Park*, *"VLM(Visual-Language Model) Technology in Robot Manipulation"*, Institute of Control, Robotics and Systems, Daejeon, Korea (Feb., 2024.)
- **Geonkuk Kim** and Juyoun Park*, "Building a Dataset and Fine-Tuning for an Affordance Model based on Video Data for Harvesting Robots," The 19th Korea Robotics Society Annual Conference (KRoC 2024).

Awards And Honors

- **KIST Future Foundation–KT&G Scholarship Foundation Scholar**, Korea (Dec. 2025)
- **Campus Patent Universiade** – Samsung Electro Mechanics CEO Award, Korea (Nov. 2023)
- **Campus Patent Universiade** – LG Display CEO Award, Korea (Nov. 2022)
- **Campus Patent Universiade** – Korea Invention Promotion Association President's Award, Korea (Nov. 2021)

Patents

- J. Park, **G. Kim**, D.H. Hwang, *"A Method for Autonomous Robot Manipulation via 3D Affordance Inference from 2D Images"*, Patent pending (KR 10-2025-0191813, US), Dec. 2025.

Projects

- **MOTIE Research Project**: Performing the artificial human task of continuous growth of embodied intelligence through the accumulation and sharing of interactive experiences (Jan. 2025 – Dec. 2025)
- **Side Research Project**: Robot motion control using multi-function sensors, Korea Institute of Science and Technology, Korea/ Robot motion control using the Yolo model (Sep. 2024 – Dec. 2024)
- **MOTIE Research Project**: Development of Robot Hand Tactile Intelligence Technology Based on Tactile Data Learning for Non-Rigid and Diverse Object Manipulation, Korea Institute of Science and Technology, Korea/ (Mar. 2024 – Dec. 2025)

Skills And Techniques

- **Technical/Operations:** Robotics (ROS2), Manufacturing (2D/3D CAD), Simulation (Isaacsim), Hardware (Franka emika, G1 Unitree)
- **AI-Robotics & Programming:** Vision AI, Python, VLM, VLA, Dexterous Manipulation
- **Advantages:** Excellent team collaboration and goal-oriented approach

Extracurricular Activities

- **Young Intellectual Property Leaders (YIPL)** : Organized by The National Academy of Engineering of Korea & Korea Invention Promotion Association (Nov. 2021 – Present)
- **Invention and Development Research Club** : Weekly idea meetings, volunteering in science fields, participation in national idea competitions, participation in on-campus idea and prototype contests (Mar. 2018 – 2024)