Alvin Jinsung Choi

+82-10-8343-3403 | alvinjinsung@gmail.com | GitHub | LinkedIn
Nationality: United States of America / Republic of Korea (Dual Citizenship)

Education

Korea Advanced Institute of Science and Technology (KAIST) Mar. 2024 – Present
M.S. in School of Electrical Engineering
- Research topic: 3D Computer Vision, 3D Scene Understanding, Embodied AI
- Advisor: Prof. Hyun Myung
- GPA: 4.15 / 4.3

Korea Advanced Institute of Science and Technology (KAIST) Mar. 2017 – Feb. 2024
B.S. in School of Electrical Engineering
- GPA: 3.56 / 4.3

Publications

NeuDonatello: Uncertainty-Aware SDF Learning for High-Fidelity Neural Surface Reconstruction
Alvin Jinsung Choi*, Wanhee Kim, Taeyun Kim, Dasol Hong, Wooju Lee, Hyun Myung†*
AAAI Conference on Artificial Intelligence (AAAI), 2026 (Under review)

CLUE: Adaptively Prioritized Contextual Cues by Leveraging a Unified Semantic Map for Effective Zero-Shot Object-Goal Navigation
Taeyun Kim, ***Alvin Jinsung Choi****, Dasol Hong, Hyun Myung†*
IEEE International Conference on Robotics and Automation (ICRA), 2026 (Under review)

ActiveGrounder: 3D Visual Grounding with Object-Hull-Guided Active Observation
Dasol Hong, Juhye Park*, Taeyun Kim, Jeewon Kim, Jei Kong, Wanhee Kim,* ***Alvin Jinsung Choi****, Wooju Lee, Hyun Myung†*
IEEE-RAS International Conference on Humanoid Robots (Humanoids) Workshop on Bridging Humanoid Robotics and Foundation Models: Embodied Intelligence and AI Integration, 2025

GSDB: A Lightweight Database for Gaussian Splatting Map-based Visual Localization Leveraging Edge-aware and Quality-guided View Filtering
Sungjae Shin, Wanhee Kim, ***Alvin Jinsung Choi****, Hyun Myung†*
International Conference on Control, Automation and Systems (ICCAS), 2025

Projects

Robot Experience | *3D Reconstruction, NeRF, Neural Surface Reconstruction* Mar. 2024 – Present
- Developed a 3D neural surface reconstruction framework from posed RGB images by leveraging uncertainty
- Reconstructed real-world environments and integrated them into a robot learning framework to enable hyper-realistic training

Neural SLAM | *3D Gaussian Splatting, Multi-robot, SLAM* Mar. 2024 – Present
- Designed a multi-robot SLAM framework utilizing 3D Gaussian Splatting for map representation in dynamic environments

Research Experience

Undergraduate Research Intern, URL KAIST (Prof. Hyun Myung) Mar. 2023 – Feb. 2024
Korea Advanced Institute of Science and Technology (KAIST)
- Studied basics of robotics, 3D computer vision, 3D reconstruction, ROS, SLAM, etc.
- Tested baseline algorithms for neural SLAM and 3D neural reconstruction frameworks

Undergraduate Research Intern, NICA KAIST (Prof. Young-Gyu Yoon) Jun. 2022 – Dec. 2022
Korea Advanced Institute of Science and Technology (KAIST)
- Studied basics of computer vision and deep learning
- Studied denoising methods for neuron-cell detection using deep learning

Honors, Awards, & Scholarships

CMU Vision-Language-Autonomy Challenge (4th place) | *Awards*

- 4th place on CMU VLA Challenge for IROS Workshop on AI Meets Autonomy: Vision, Language, and Autonomous Systems, 2025 (Advanced to real-world evaluation)
- Developed a model capable of taking in natural language queries or commands about a scene and generate the appropriate navigation-based response through reasoning about semantic and spatial relationships

CES 2023 KAIST Hall Student Coordinator | *Honors* Sep. 2022 – Jan. 2023

- Coordinated and managed the KAIST exhibition hall at CES 2023, overseeing operations and visitor engagement

LG Global Challenger | *Awards* Jun. 2019 – Sep. 2019

- Artificial Organ Customizing Project using Digital Twin
- Conducted interviews and site visits at 5 leading international institutes in 4 countries, focusing on research in systems biology and computational methods for biomedical technology

Academic Services

Reviewer | *ICRA* 2026
Reviewer | *RA-L* 2025
Student Volunteer | *CoRL* 2025

Teaching

Teaching Assistant Sep. 2025 – Present
EE Career Development II
Teaching Assistant Mar. 2025 – Jun. 2025
Electronics Design Lab. Communication System Design Using MATLAB and SIMULINK
Teaching Assistant Sep. 2024 – Dec. 2024
Introduction to Electronics Design Lab.

Extracurricular Activity

Hanwha-KAIST Mentorship Program Mentor | *Mentoring* Mar. 2023 – Feb. 2024
KISS Summer School Buddy, KAIST | *International Activity* Jun. 2019 – Aug. 2019
LG Global School Mentor | *Mentoring* Mar. 2019 – Dec. 2019
Samsung Dream Class Mentor | *Mentoring* Mar. 2019 – Dec. 2019
KAIST Cambodia Volunteer Team | *Volunteering* Sep. 2018 – Feb. 2019
KAIST Baseketball Team, Doolly | *University Club* Mar. 2017 – Feb. 2020
Official Student Ambassador of KAIST, Kainuri | *University Organization* Mar. 2017 – Feb. 2019

Leadership Experience

Counseling Assistant Sep. 2024 – Present
School of Electrical Engineering, KAIST
Military Service, Republic of Korea Army Aug. 2020 – Feb. 2022
Information and Communications

Technical Skills

Languages: Python, C/C++, MATLAB
Frameworks: PyTorch, Habitat-Sim, ROS, Gazebo
Tools & Platforms: Git, Docker, VS Code, PyCharm
Libraries: NumPy, Matplotlib, OpenCV

Language Skills

Korean: Native Speaker
English: Fluent (TOEFL 112, OPIC Advanced Low)