

Changhyun Choi

📍 Seoul National University ✉ windust7@snu.ac.kr ☎ +82 10 7535 1196 🔗 <https://windust7.github.io>

Research Interest

- Artificial Intelligence
- Robotics
- Foundation Model
- Generative AI

Education

- MS** **Seoul National University**, Interdisciplinary Program in Artificial Intelligence Sep 2023 –
• Coursework: Reinforcement Learning, Machine Learning, Generative AI, Optimization
- BS** **Yonsei University**, Mechanical Engineering Mar 2017 – Aug 2023
• GPA: 4.03/4.30 (Cum Laude, ranking 7th out of 141 students)

Publications

Performance Plateaus in Inference-Time Scaling for Text-to-Image Diffusion Without External Models

Workshop on Methods and Opportunities at Small Scale at ICML 2025

Changhyun Choi, Sungha Kim, H. Jin Kim

[arXiv link](#) 🔗

Efficient Utilization of Single-Call Best-of-N in Text-to-Image Diffusion Models

Korea Computer Congress 2025

Changhyun Choi, H. Jin Kim

Temporal Action Representation Learning for Aerial Maneuvering and Resource-Aware Decision-Making

1st Workshop on Leveraging Implicit Methods for Aerial Autonomy at RSS 2025

Hoseong Jung, Sungil Son, Daesol Cho, Jonghae Park, **Changhyun Choi**, H. Jin Kim

A Survey on Collision Avoidance Algorithms for Multi-robot Systems

International Journal of Control, Automation, and Systems 2025

Dahyun Oh, Yongjae Lim, Hoseong Jung, Jeongtae Huh, Jusuk Lee, **Changhyun Choi**, H. Jin Kim, Jungwon Park

Noise Generation using Noise-Selecting GFlowNet for Preference Alignment of Diffusion Models

Korea Software Congress 2024

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Survey on Generative Flow Network

Korea Software Congress 2024

Changhyun Choi, H. Jin Kim

Projects

ARNOLD challenge

Jun 2025

- 6th Embodied AI Workshop (EAI) at CVPR 2025
- We made **LLM-guided planning-interpreting-verifying pipeline** to solve language-instruction manipulation tasks and ranked 4th place at ARNOLD challenge

Manned-Unmanned Aircraft Collaboration

Mar 2025 –

- ADD (Agency for Defence Development)
- We are currently targeting to achieve **efficient collaboration** between human pilots and unmanned aircraft using various AI methodologies

Parameter Tuning for Transferring Base Vehicle Driving Characteristics to Derivative Vehicles

Sep 2024 – Sep 2025

- Hyundai Motor Group
- I used **MAML(Model Agnostic Meta-Learning)** to effectively transfer the driving characteristics of a base vehicle to its derivative models


AI Virtual Aircraft Air-to-Air Combat

Mar 2024 – Mar 2025

- KAI (Korea Aerospace Industries)
- I implemented a turn-circle initialization framework for **curriculum learning** of unmanned aircraft agent

Swarm Unmanned Surface Vehicle (USV) Defense Mission

Sep 2023 – Nov 2024

- ADD (Agency for Defence Development)
- I used **DACOOP-A** to develop a mission where multiple friendly unmanned surface vehicles intercept and eliminate incoming enemy forces at sea before they reach their designated destination.
- [related news link \(Korean\)](#) 

Honors & Awards

2022 Fall – 2023 Spring	National Science and Technology Scholarship full scholarship for undergraduate course
2022 Fall	Honors, Yonsei University Top 10% in the College of Engineering
2022 Spring	High Honors, Yonsei University Top 3% in the College of Engineering
2021 Fall	Yonsei AI & IoT & Mobility club competition Awarded, Team leader of SBTM (Yonsei Autonomous Driving Club)
2021 Fall	Jilli Scholarship (Merit-based Scholarship), Yonsei University
2020 Fall	Pangyo autonomous driving delivery competition 2nd place, Team member of SBTM (Yonsei Autonomous Driving Club)
2020 Fall	Jilli Scholarship (Merit-based Scholarship), Yonsei University
2020 Fall	Highest Honors, Yonsei University Top 1% in the College of Engineering
2020 Spring	Jilli Scholarship (Merit-based Scholarship), Yonsei University
2020 Spring	Honors, Yonsei University Top 10% in the College of Engineering
2017 Fall	Honors, Yonsei University Top 10% in the College of Engineering
2017 Spring	Honors, Yonsei University Top 10% in the College of Engineering

Leadership and Military Service

SBTM

Jan 2021 – Aug 2023

- Yonsei Autonomous Driving Club
- 2022 president

KCTC (Korea Combat Training Center)

Feb 2018 – Oct 2019

- I completed my military service at the Korea Combat Training Center (KCTC), serving as part of an opposing force to help train the Republic of Korea Army in realistic combat scenarios