TAE MIN KIM

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EDUCATION

Columbia University New York, NY
Master of Science in Mechanical Engineering Expected Dec 2026
Concentration in Robotics and Control

Sogang University Seoul, KR
BS in Mechanical Engineering and Artificial Intelligence, GPA: 3.77/4.3 Feb 2025
Coursework: Reinforcement Learning, Robust Control

EXPERIENCE

Robotics and Intelligent Mechanisms Lab, Sogang University Seoul, KR
Research Assistant Mar 2024 - Jun 2025

- Utilized teacher–student distillation in IsaacLab with an adjusted Transformer decoder, achieving 5× better blind-grasping performance vs. RL-only models
- Transferred pre-trained policy to a real robot using Dynamixel SDK and ROS2, enabling real-robot operation at 90% of simulation performance
- Enhanced real robot performance by 10% through creating a feedback system with a neural network based-disturbance observer

Brookhurst Garage Seongnam, KR
Hardware Intern Jan 2024 - Mar 2024

- Redesigned drone system in SolidWorks as a hardware design team member, optimizing polyurethane foam placement and reducing vibration by 20%
- Identified unused internal space during drone assembly to install a thermal pad, lowering heat by 8% and ensuring reliable operation of heat-sensitive camera

Reinforcement Learning Lab, Seoul National University Seoul, KR
Research Intern Jul 2023 - Aug 2023

- Improved agent performance by 14% in a deep-search binary maze by designing a new algorithm combined and extended existing DQN approaches

PROJECTS

Robotic Studio Course, Columbia University Sep 2025 - Dec 2025
Robust Walking Robot Design

- Directed the full-stack development of a walking bipedal robot using Raspberry Pi 4 and 8 servo motors, from sketching to 3D design in OnShape
- Developed PPO-based gait training in Genesis simulation, achieving stable gait phasing through reward and configuration optimization, and deployed the trained policy on real robotic hardware

SLM (Small Language Model) Fine-Tuning Hackathon – AWS × AGI Nov 2025
First-Aid Advice AI Agent

- Designed an on-device first-aid service agent leveraging SLMs for real-time, low-latency inference without internet access, targeting emergency scenarios where users require immediate medical guidance instead of relying on cloud-based LLMs
- Fine-tuned the Qwen3-1.7B model leveraging a Hugging Face dataset on AWS Trainium, accomplishing strong task generalization and winning 2nd prize among participating teams

SKILLS

Programming: Python, C, MATLAB, R, MYSQL
Robotics Simulation: PyBullet, MuJoCo, IsaacLab, Genesis
Robots Operation: Dynamixel, ROS2
Python Package: PyTorch, TensorFlow, RSL RL, robomimic, opencv
Design Tools: AutoCad, Inventor, Solidworks, Fusion 360, Onshape
OS: Windows, Linux, macOS