

# TAE MIN KIM

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## EDUCATION

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

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

## EXPERIENCE

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

- Utilized teacher–student distillation in IsaacLab, achieving 5× better blind grasping performance compared to models trained with reinforcement learning alone
- 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

<b>Brookhurst Garage</b>	Seongnam, KR
<b>Hardware Intern</b>	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

<b>Reinforcement Learning Lab, Seoul National University</b>	Seoul, KR
<b>Research Intern</b>	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

<b>Robotic Studio Course, Columbia University</b>	Sep 2025 - Present
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### Robust Walking Robot Design

- Directed the full-stack development of a walking robot using Raspberry Pi 4 and 8 servo motors, from sketching to 3D design in Fusion 360
- Planned to integrate PPO algorithm for gait training in Genesis/PyBullet simulation and transfer to the physical robot to overcome sim-to-real gap

<b>Machine Learning Competition, Korea Exchange</b>	Jul 2023 - Aug 2023
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### KRX Long–Short Portfolio Prediction

- Collaborated in a team to process 2,000 KRX tickers (1 year, 288 trading days), engineering EWMA volatility and market-cap features, and training Prophet models with holiday-aware forecasts for long–short signals
- Selected top/bottom 200 stocks, refined shorts using short-interest ratios, and achieved top 12% ranking with a ~0.40 Sharpe ratio

## LEADERSHIP

<b>Republic of Korea Army</b>	Daegu, KR
<b>Squad Leader</b>	Jan 2021 - Oct 2021

- Managed a 14-member squad, mediating between members and officers, and ensured effective training and leave schedules with no disruptions in personnel

## SKILLS

**Programming:** Python, C, MATLAB, R, MYSQL

**Robotics Simulation:** PyBullet, MuJoCo, IsaacLab

**Robots Operation:** Dynamixel, ROS2

**Python Package:** PyTorch, TensorFlow, RSL RL, robomimic, opencv

**Design Tools:** AutoCad, Inventor, Solidworks, Fusion 360