

# Minseo Kwon

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## Research Interests

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Robotics, Task and Motion Planning

## Education

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### *Ewha Womans University, Seoul, Korea*

**M.S., Artificial Intelligence and Software (Computer Science and Engineering)**

*Sept 2024 – Aug 2026*

- Advisor: [Dr. Young. J. Kim](#)
- Current GPA: 4.3/4.3

**B.S., Computer Science and Engineering & Mathematics**

*Mar 2020 – Aug 2024*

- Graduated with Honors: Magna Cum Laude (GPA: 3.82/4.3)

## Publications

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### Conference Papers

[C02] [M. Kwon](#), Y. Kim, and Y. J. Kim, **Fast and Accurate Task Planning using Neuro-Symbolic Language Models and Multi-level Goal Decomposition**, *IEEE International Conference on Robotics and Automation (ICRA)*, 2025. [🔗](#) [📄](#)

[C01] S. Kwon\*, [M. Kwon\\*](#), H. Kim\* and J. Sim, **ToMato: Accelerating ViT via Token Merging**, *The Institute of Electronics and Information Engineers Conference*, 2023. (\* Equal Contribution) [🔗](#) [📄](#)

### Journal Papers

[J02] Many Authors, **A Dataset and Benchmark for Robotic Cloth Unfolding Grasp Selection: The ICRA 2024 Cloth Competition**, *The International Journal of Robotics Research*, 2025, Under Review.

[J01] [M. Kwon](#), and Y. Kim, **Neuro-Symbolic Task Replanning using Large Language Models**, *The Journal of Korea Robotics Society*, 2025. [🔗](#)

## Research Experience

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### *Ewha Womans University, Seoul, Korea*

[Computer Graphics Lab](#), Research Assistant (Advisor: [Dr. Young. J. Kim](#))

*Sept 2024 – Present*

- **Task and Motion Planning**: Working on robotic hierarchical task-and-motion planning for robotic manipulation using multimodal LLM.
- **WBCD Challenge**: Selected as a finalist (5th place) in the Table Service Operations track in [ICRA 2025 WBCD Challenge](#) among 74 teams.

[Computer Graphics Lab](#), Undergraduate Researcher (Advisor: [Dr. Young. J. Kim](#))

*Dec 2022 – Aug 2024*

- **Task Planning**: Developed a neuro-symbolic task planner for large-scale robotic tasks, reducing planning time and improving accuracy in various PDDL domains by generating subgoals with multimodal LLM. [\[C02\]](#) [\[J01\]](#)
- **Cloth Manipulation**: Developed a robotic cloth unfolding pipeline leveraging a point cloud-based edge detection method for grasp pose localization, winning 3rd place at the [ICRA 2024 Cloth Competition](#). [\[H03\]](#) [🔗](#)

## Capstone Design Project (Advisor: [Dr. Jaehyeong Sim](#))

Jan 2023 – Dec 2023

- **Model Compression:** Accomplished a 22.19% reduction in inference latency for Vision Transformer-based models by recursively merging tokens at the early transformer block while preserving over 80% accuracy. [H01, H02] [C01]

## Teaching Experience

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[Altu-Bitu](#), Algorithm Tutoring Program, *Ewha*

Fall 2022

- Conducted lectures on data structures and computer algorithms for 40+ undergraduate students and provided feedback on assignment codes.

## Honors & Awards

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[H03] [3rd Place](#) | Robotic Grasping of Manipulation Competition (Cloth Manipulation Track), ICRA, 2024

[H02] **Silver Prize** | Ewha Engineering Capstone Design Contest, 2023

[H01] **3rd Place** | Undergrad Research Paper Contest, Autumn Annual Conference of IEIE, 2023

## Scholarships & Academic Awards

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[S03] **Graduate Admissions Scholarship (full tuition for 1 year)** | Ewha, 2024 - 2025

[S02] **Dean's List (7 semesters)** | Ewha, Fall 2020 - Spring 2024

[S01] **Undergraduate Admissions Scholarship (full tuition for 4 years)** | Ewha, 2020 - 2023

- Top-ranked entrant among all science and engineering applicants; received full tuition scholarship.

## Skills

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**Programming Languages/Libraries:** C++, C, Java, Python, PyTorch, Matlab

**Robot SW:** ROS, OMPL, MoveIt!, CoppeliaSim, Mujoco, Gazebo, Rviz, Genesis

**Robot HW:** UR5e, Robotiq 3F adaptive gripper

**Languages:** Korean (Native), English (Advanced)

## Other Activities

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**EDOC (Ewha Do Coding), Club President**

Jan 2022 - Dec 2022

- Led the on-campus algorithm club as president, organizing study sessions, inter-club collaborations, and programming competitions.