

# Jiwon You

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## PROFESSIONAL SUMMARY

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Robotics engineer focused on learning-based manipulation and real-world robot deployment. Experienced in building end-to-end sim-to-real pipelines from scratch, spanning simulation, policy training, demonstration collection, distillation, deployment interface, and hardware experiments to publication.

## EDUCATION

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- **Swiss Federal Institute of Technology Lausanne (EPFL)** Lausanne, Switzerland  
*M.Sc. Mechanical Engineering & Data Science; GPA: 5.6/6* 2024.9 – 2027.2 (expected)
- **ETH Zurich** Zurich, Switzerland  
*Exchange Student (Robotics); GPA: 5.6/6* 2022.9 – 2023.2
- **Seoul National University (SNU)** Seoul, South Korea  
*B.Sc. Mechanical Engineering; GPA: 3.9/4.3; summa cum laude* 2017.3 – 2024.2

## PUBLICATIONS

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- Sim-to-Real Transfer for Manipulation with Zero-Shot Embodiment Augmentation via Mechanical Compliance
  - [Jiwon You, Cheng Pan, Sudong Lee, Josie Hughes] [Under review at *IROS 2026*]

## SELECTED EXPERIENCE

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- **EPFL – Prof. Josie Hughes** Lausanne, Switzerland  
*Research Intern* 2025.7 – 2026.3
  - Built a **sim-to-real manipulation pipeline** from scratch for a UR3 + UMI gripper using IsaacLab, covering simulation, training, and real-robot deployment.
  - Trained RL policies in simulation and distilled them into a vision-based student policy with behavior cloning and visual randomization.
  - Developed a **Python deployment stack**, including multithreaded robot control, Dynamixel communication, and camera streaming.
  - Achieved **zero-shot transfer** on real hardware for object pickup from random targets in a 20 cm × 20 cm workspace without explicit state estimation.
  - **First author** on an **IROS 2026** paper under review.
- **Switzerland Innovation Park Biel/Bienne** Biel/Bienne, Switzerland  
*Robotics / Sim-to-Real Intern* 2026.2 – present
  - Worked on **industrial sim-to-real manipulation** for automated battery disassembly, focusing on contact-rich insertion skills such as screw engagement
  - Systematically improved **training robustness** by streamlining and simplifying observation/reward/curriculum designs for high-precision manipulation.
  - Contributed to **software development and maintenance** of the manipulation pipeline, including code modularization and refactoring for more transparency.
  - Optimized **simulation efficiency** by investigating collision-mesh representations and solver parameters, balancing simulation fidelity and computation time
- **Swiss Battery Technology Center** Biel/Bienne, Switzerland  
*Research Intern* 2025.2 – 2025.7
  - Adapted an LLM-assisted reward-design workflow to fit internal robot learning workflows in IsaacLab.
  - Integrated the framework into reward tuning, curriculum tuning, and PPO hyperparameter optimization for manipulation tasks.
  - Applied the method to a contact-rich unscrewing task and benchmarked it against Ray Tune.
- **EPFL RoboCup Team** Lausanne, Switzerland  
*Manipulation Software Engineer* 2024.9 – 2025.8

- Developed the manipulation stack for a mobile service robot, integrating perception, grasp planning heuristics, and grasp execution for real-world object pickup.
- Built Python/ROS2 interfaces on top of the UFactory xArm SDK and Dynamixel SDK to provide reliable arm and gripper control primitives.
- Integrated vision-based object state estimation into the manipulation pipeline to execute pickup tasks.
- Designed and tuned practical grasp heuristics, including approach strategies, offsets, and object-specific handling, to improve real-world robustness.

- **Zurich Robotics Hackathon 2025**

Zurich, Switzerland

*Autonomous Tic-Tac-Toe Robot (Runner-up)*

2025.5

- Built a fully autonomous robot system that played tic-tac-toe against humans in real life using a LeRobot SO-100 arm.
- Trained and integrated a vision-language-action policy for picking and placing game tokens onto commanded board cells.
- Developed LLM components of the overall system, including game-state perception, language-conditioned play, and LLM-based interaction layers for gameplay reasoning and narration.
- **Result:** Runner-up finish([link](#))

- **EPFL – Prof. Maryam Kamgarpour**

Lausanne, Switzerland

*Research Intern*

2025.9 – 2026.2

- Implemented a preference-based fine-tuning pipeline in simulation, from expert rollout generation and synthetic preference labeling to fine-tuning with DPO-style objectives and evaluation.
- Studied stability trade-offs between pure DPO and mixed BC + DPO losses in control tasks; observed improved returns with the combined objective.

## SKILLS

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- **Robot Learning** – IsaacLab, reinforcement learning workflows, sim-to-real transfer, policy distillation, behavior cloning, domain/visual randomization
- **Robotics Software** – Python, PyTorch, ROS2, OpenCV, Docker, Git, Linux, C++
- **Hardware / Integration** – UR3, xArm, Franka, ROS2, multithreaded deployment interfaces, real-robot experimentation
- **Languages** – English (fluent), Korean (native)