Sung Jae Park

(+82)10-5361-0240 teri305@snu.ac.kr

Education

Seoul National University: **Mar. 2017 – Present**

Department of Mechanical Engineering (Double Major in Mathematics), **Accumulative GPA : 4.24/4.3**

Gyeonggi Science Highschool for the Gifted: **Mar. 2014 – Feb. 2017**

Research Interests

I am interested in robot learning for complex, long-horizon robot manipulation, and ultimately aim to develop a general-purpose robot. To achieve this, the specific topics I am interested in are :

- Learning a model with a human-level physical understanding
- Contact-rich dexterous manipulation
- Efficient RL Algorithms

Major Courseworks

- Dynamics / Control Theory
- Introduction to Deep Learning
- Mechatronics
- Numerical Optimization
- Thermodynamics / Heat Transfer
- Probabilistic Graphical Model
- Mathematical Analysis / Abstract Algebra
- Introduction to Robotics
- Mathematical Foundations of Deep Learning
- Data Structure
- Fluid Mechanics
- Solid Mechanics / Mechanics and Design
- Introduction to Topology

Research Experiences

Dynamic Robotics Systems Lab Research Intern | **Jul. 2021 – Aug. 2021, Jan. 2022 – June. 2022**

Advisor: Jaeheung Park from Seoul National University

• Developed vision-based peg-in-hole algorithm for dual robot arm with hole detection using hand-eye camera and YOLO

• Developed motion planning algorithm under constraint with Block Neural Autoregressive Flow for Panda Franka robot arm.

SNU Robotics Lab Undergraduate Thesis Research Intern | **Mar. 2022 – Dec. 2022**

Advisor: Frank C. Park from Seoul National University

• Developed cross-embodiment RL with object-centric planning.

Cognitive Learning for Vision and Robotics Lab Research Intern | **Jul. 2022 – Present**

Advisor: Joseph J. Lim from Korea Advanced Institute of Science and Technology (KAIST)

• Developing an efficient reinforcement learning algorithm based on task-oriented state criticalness.

Honors and Awards

Silver Prize (Math/Computation Field), Samsung Humantech Paper Award **Feb. 2015**

Gangwon Future Highflier Scholarship **Jan. 2018 – Present**

International Design Contest Robocon 2018 2nd place **Aug. 2018**
Full-funded scholarship for academic excellence **Mar. 2018 – Dec. 2019, Mar.2021**
Presidential Science Scholarship **Mar. 2021 – Present**

Skills

Language: C++, Python, Java
Libraries/Frameworks: Pytorch, ROS, YOLO, SMACH
Modeling: SolidWorks

Teaching Experience

Undergraduate Tutoring | Physics 1,2 **Mar. 2018 – Dec. 2018, Mar. 2021 – Dec.2021**

Undergraduate Tutoring | Linear Algebra 1 **Mar. 2021 – Jun.2021**

Teaching Assistant | Introduction to Robotics **Mar. 2022 – Jun. 2022**

English Proficiency

GRE: Verbal Reasoning 160/170, Quantitative Reasoning 170/170, Analytical Writing 4.0/6.0

TOEFL: 112/120 (Reading 29/30, Listening 30/30, Speaking 26/30, Writing 27/30)