

# Kyoungyeon Choi

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## Research Interests

- Robotics, Robotic Manipulation, and Legged Robotics
- Dynamics and Control

## Education

### Seoul National University (SNU)

B.S. IN MECHANICAL ENGINEERING

Seoul, S.Korea

Mar. 2015 - Feb. 2021

- Cumulative GPA: 4.11/4.3 (Major: 4.19/4.3, Upper: 4.21/4.3)
- Two years of absence to fulfill military duty (Aug. 2017 - Jul. 2019)

### ETH Zürich

EXCHANGE STUDENT IN MECHANICAL ENGINEERING

Zürich, Switzerland

Aug. 2019 - Feb. 2020

- Global Leadership Program, College of Engineering SNU

## Research Experience

### Research Intern

VISION AND LEARNING LABORATORY, SNU

Seoul, S.Korea

Oct. 2021 - Present

- Advisor: Gunhee Kim Prof.Dr.
- Working on 3D point-cloud semantic segmentation.

### Robotics Machine Learning Engineer

NAVER LABS

Seoul, S.Korea

Apr. 2021 - Oct. 2021

- Paper: Learning Dynamic Manipulation Skills from Haptic-Play (Submission in progress)
- Presented at 2nd NAVER LABS Europe International Workshop on AI for Robotics
- Proposed a skill learning approach to solve highly dynamic manipulation tasks from offline play data.
- Extracted primitive skills by learning the state conditional latent skill distribution, state transition dynamics and skill decoder network.
- Allowed the dual arm (MIT mini cheetah leg) to perform model-based planning in the learned skill-space using Model Predictive Path Integral and Model-based Offline RL

### Bachelor's Thesis Research

ROBOTICS LABORATORY, SNU

Seoul, S.Korea

Mar. 2020 - Dec. 2020

- Advisor: Frank Chongwoo Park Prof.Dr.
- Thesis: Learning 6-dof grasping from partial point cloud embedding
- Developed a grasping policy that selects a successful 6-dof grasp pose from a VAE grasp generator

### Semester Project

ROBOTIC SYSTEMS LAB, ETH ZÜRICH

Zürich, Switzerland

Aug. 2019 - Jan. 2020

- Advisor: Marco Hutter Prof.Dr.
- Project paper: Recovery controller for ANYmal on various terrains
- Project webpage: <https://bestever-choi.github.io/ANYmal-recovery/>
- Developed recovery controller for the quadruped robot ANYmal, enabling ANYmal to recover and stand up on sloped terrains

### Research Intern

PHOTONICS DEVICE PHYSICS LABORATORY, YONESI UNIVERSITY

Seoul, S.Korea

Dec. 2016 - Feb. 2017

- Advisor: Kyunghwan Oh Prof.Dr.
- Research Paper: Two-mode Fiber with a Reduced Mode Overlap for Uncoupled Mode-division Multiplexing in C+L Band
- Designed a fiber optic cable that reduces mode overlap in LP01 and LP11 modes

## Publications

- Taeyoon Lee\*, Donghyun Sung\*, **Kyoungyeon Choi**, Choongin Lee, and Changwoo Park, Keunjun Choi, "Learning Dynamic Manipulation Skills from Haptic-Play", (In progress).
- Seongjin Hong, **Kyoungyeon Choi**, Yong Soo Lee, and Kyunghwan Oh, "Two-mode Fiber with a Reduced Mode Overlap for Uncoupled Mode-division Multiplexing in C+L Band", Current Optics and Photonics, Vol. 2, Issue. 3, June 25, 2018.

## Extracurricular Activity

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### Sigma Intelligence

MEMBER, SNU

- A robotics group focused on designing robots and electronics devices
- Developed footsteps warning device using piezoelectric sensor with ROS

Seoul, S.Korea

Jul. 2016 - Aug. 2017

### Teaching and Mentorship

TEACHER

- Taught and mentored middle/high school students Math and Physics for 4 years

Seoul, S.Korea

Mar. 2015 - Aug. 2019

## Honors & Awards

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### Kwanak President Scholarship

SNU ALUMNI ASSOCIATION

- Awarded for academic excellence
- Full-tuition, 7 semester

Seoul, S.Korea

Sep. 2015 - Present

### Global Leadership Program Scholarship

COLLEGE OF ENGINEERING, SNU

- Exchange semester at ETH Zürich

Seoul, S.Korea

Aug. 2019

### National Mathematics Competition

GLOBAL ASSOCIATION FOR GIFTED AND TALENTED

- The first prize

Seoul, S.Korea

Nov. 2013

## Skills

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**Programming** Python, Matlab, Tensorflow, C, C++, ROS, LaTeX

**3D CAD** SolidWorks

**Robot Simulation** Raisim gym, Mujoco gym, PyRep

**Physics Simulation** COMSOL Multiphysics

## Other Experience

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### Seoul Metro Corporation

SOCIAL SERVICE AGENT

- Alternative military service
- Designed a CAD model for military purpose

Seoul, S.Korea

Aug. 2017 - Jul. 2019