Min-Sung Yoon

Ph.D. candidate **Email:** minsung.yoon@kaist.ac.kr
SGVR Lab @ School of Computing, **URL:** https://minsungyoon.github.io/
Korea Advanced Institute of Science and Technology (KAIST)

Research Interests:

I am particularly interested in increasing the autonomy of robots in various ways: 👩‍💻➡🤖➕🧠. My research interest spans the following keywords: Reinforcement learning, Deep learning, Robotics, Motion generation, Task and Motion planning, Control, Navigation, Graphics, etc.

Awards & Honors:

- **Outstanding Planning Paper Award, ICRA, 2023**
  - Paper: Learning-based Initialization of Trajectory Optimization for Path-following Problems of Redundant Manipulators
  (About 1.1% acceptance rate, 15 awards out of 1,341 papers)
- **Outstanding Navigation Paper Finalist Award, ICRA, 2022**
  - Paper: Confidence-Based Robot Navigation Under Sensor Occlusion with Deep Reinforcement Learning
  (About 2.6% acceptance rate, 39 awards out of 1,498 papers)
- **Best Design Award for Comprehensive Information and Communication Design (Graduation Project), ICE Department in Inha Univ., 2018**
  - Title: Platooning with Autonomous Driving
- **National Excellence Scholarship in Science and Engineering (이공계 국가우수 장학생), Ministry of Science and ICT (과학기술정보통신부), 2017**
- **Dean's List, College of IT Engineering in Inha Univ., 2016 Fall**
- **Dean's List, College of IT Engineering in Inha Univ., 2016 Spring**

Education:

- **KAIST, Ph.D., Computer Science** **2022 ~ current**
  - Scalable Graphics, Vision, & Robotics Lab (SGVR Lab)
  - Adviser: Sung-Eui Yoon
- **KAIST, M.S., Computer Science** **2020 ~ 2022**
  - Scalable Graphics, Vision, & Robotics Lab (SGVR Lab),
  - Adviser: Sung-Eui Yoon
  - Total GPA: 4.0/4.3 (credits: 34)
- **Inha Univ., B.S., Information & Communication Engineering (ICE)** **2015 ~ 2019**
  - Major GPA: 4.49/4.5 (credits: 80), Total GPA: 4.34/4.5 (credits: 130)

Publications:

- **Learning-based Initialization of Trajectory Optimization for Path-following Problems of Redundant Manipulators** [Project page]
  - **Minsung Yoon**, Mincheul Kang, Daehyung Park, and Sung-Eui Yoon
  - IEEE International Conference on Robotics and Automation (ICRA) 2023
  - **Outstanding Planning Paper Award** (about 1.1% rate, 15 awards out of 1,341 papers)

- **Towards Safe Remote Manipulation: User Command Adjustment based on Risk Prediction for Dynamic Obstacles** [Project page]
  - Mincheul Kang, **Minsung Yoon**, and Sung-Eui Yoon
  - IEEE International Conference on Robotics and Automation (ICRA) 2023

- **Confidence-Based Robot Navigation Under Sensor Occlusion with Deep Reinforcement Learning** [Project page]
  - Hyeongyeol Ryu, **Minsung Yoon**, Daehyung Park, and Sung-Eui Yoon
  - IEEE International Conference on Robotics and Automation (ICRA) 2022
  - **Outstanding Navigation Paper Finalist Award** (about 2.6% rate, 39 awards out of 1,498 papers)

- **Fast and Robust Trajectory Generation for Cartesian Path-following Problems of Redundant Manipulators**
  - **Minsung Yoon**, Mincheul Kang, Daehyung Park, and Sung-Eui Yoon
  - Machine Learning for Human-Robot Interaction (HRI) Workshop at IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN) 2022

- **Deep Neural Network-based Fast Motion Planning Framework for Quadrupedal Robot** [Workshop video]
  - Jinhyeok Jang, Heechan Shin, **Minsung Yoon**, Seungwoo Hong, Hae-Won Park, and Sung-Eui Yoon
  - Machine Learning for Motion Planning (MLMP) Workshop at ICRA 2021

- **Robust Robot Navigation against External Disturbance using Deep Reinforcement Learning** [Project page]
  - Hyeongyeol Ryu, **Minsung Yoon**, Daehyung Park, and Sung-Eui Yoon
  - Korea Robotics Society Annual Conference (KRoC), 2021

- **Bias tree expansion using reinforcement learning for efficient motion planning** [Project page]
  - **Minsung Yoon**, Daehyung Park, and Sung-Eui Yoon
  - Korea Robotics Society Annual Conference (KRoC), 2021

Media Coverages:

- **KAIST's Research Highlights on the 2023 KAIST Annual R&D Report** [Link]
- **KAIST's Research news** [Link]
- **CS Department's news** [Link]
- **Research Highlights of the Department of Computing Science (CS) at KAIST** [Link]

Research Activities & Experiences:

- **Teaching Assistant**
  - CS470: Introduction to Artificial Intelligence, Spring 2023
  - CS470: Introduction to Artificial Intelligence, Fall 2022

- Gave **an invited talk** at Flagship Conference / Journal Session of KRoC 2023. [Link]

Patents:

- TBU

Projects:

- TBU

Skills:

- **Programming Language**: C, C++, Python, MATLAB
- **Programming Library**: ROS 1, ROS 2, PyTorch, Tensorflow, Keras, RL frameworks (e.g., OpenAI Gym, OpenAI spinningup), Moveit, OMPL (Open Motion Planning Library)
- **Simulator & Physics Engine**: Gazebo, Mujoco, Raisim, IsaacGym, IsaacSim, DART
- **Experienced Robot Platform**: Mobile manipulator (i.e., Fetch robot), Quadruped robot (i.e., Go1 robot), Mobile robot (i.e., Jackal robot)

Patents:

Projects:

- 한화
- 스타랩2
- 안기연 로봇
- 중견
- 스타랩1
- 이대, BRL
- 휴보
- 드론
- ADD 사족
- 현대로보틱스
- LIG, Detection on Radar signal
- Pose estimation on medical data: diagnosing the presence of a 이석증 disease

SILVIA KIEL

CURRICULUM VITAE CV TEMPLATE

Email: silvia.kiel@email.com
Phone: 555-555-5555
Location: New York, NY

COVER LETTER

Silvia Kiel
Graduate student, Bachelor of Arts in English Literature, New York University
135 East 12th Street, New York, NY 10003
baenglishlit@nyu.edu * 212-555-1212

13 June 2024
The Chairperson
Eagle Rock Academy
456 Main Street, New York, NY 10001

Application for "Teacher Assistant" position in summer 2024.

Dear Professor,

I am writing to express my interest in the Teacher Assistant position at [School]. As a recent graduate of [University] with a Bachelor's degree in Education and a strong passion for working with children, I am confident in my ability to make a positive impact in the classroom.

Throughout my studies and various internships, I have developed strong skills in lesson planning, classroom management, and student support. I have a firm understanding of best practices in education and am committed to creating a positive and inclusive learning environment for all students.

I am excited about the opportunity to join the team at [School] and believe that my skills and experience make me an excellent fit for this role. Thank you for considering my application. I look forward to discussing the position further and how I can contribute to the success of the students and faculty at [School].

Sincerely,

Silvia Kiel.