SCOTT LEE

205 N. Goodwin Ave., Champaign, IL 61820, USA

◇ +1 217-377-9970   ◇ sl148@illinois.edu

◇ **LinkedIn**   ◇ **Google Scholar**

SUMMARY

- Robotics researcher specializing in **multi-robot algorithms** for solving real-world challenges in warehouse/factory automation.
- Focused on enhancing algorithmic efficiency and enabling rapid adaptation to dynamic and constraint-heavy environments.
- Strong experience in integrating hardware and software for practical, impactful multi-robot system deployments.

EDUCATION

University of Illinois at Urbana-Champaign   *Aug. 2021 - **Dec. 2026 (Expected)***

Ph.D. Candidate in Department of Mechanical Science and Engineering

Advisor: Prof. Nancy M. Amato

- Current GPA: 3.8/4.0

Yonsei University, Seoul, South Korea   *Mar. 2016 - Feb. 2021*

B.S. in Department of Mechanical Engineering

Advisor: Prof. Jongeun Choi

- Granted National Science and Technology Scholarship (Full tuition)
- Overall GPA: 3.92/4.0 (Graduated with Cum Laude)

University of California, Berkeley   *Jan. 2020 - May. 2020*

Exchange Student Program

- Overall GPA: 4.0/4.0

RESEARCH EXPERIENCE

Parasol Lab (webpage)

Ph.D. student (Advisor: Prof. Nancy M. Amato)   *Aug. 2021 - present*

- Applying a multi-robot task and motion planning algorithm to a biology lab automation (Mind in Vitro Project)
- Contributing on open-source planning library, Parasol Planning Library (PPL)

Machine Learning and Control System Lab (webpage)

Undergraduate internship (Advisor: Prof. Jongeun Choi)   *Aug. 2017 - Feb. 2021*

- Developing a multi-task autonomous driving algorithm using reinforcement learning
- Designing a nonlinear controller for Unmanned Aerial Vehicles (UAVs)

PUBLICATIONS

- **Seongwon Lee**, James Motes, Isaac Ngui, Marco Morales, Nancy M. Amato, "Lazy-DaSH: Lazy Approach for Hypergraph based Multi-robot Task and Motion Planning"   ***Under Review***
- **Seongwon Lee**, James Motes, Isaac Ngui, Marco Morales, Nancy M. Amato, "Lazy-DaSH: Lazy Approach for Hypergraph based Task and Motion Planning"   ***ICRA@40 Extended Abstract***
- Isaac Ngui, **Seongwon Lee**, James Motes, Marco Morales, Nancy M. Amato, "A hierarchical Approach to Workstation-based Task Allocation and Motion Planning"   ***IROS 2023 Workshop Paper***
- **Seongwon Lee**, Joohwan Seo, Connor J. Boss, Joonho Lee, Jongeun Choi, "Output Feedback Control Design for Quadrotors Using Recursive Least Square Dynamic Inversion",   ***Elsevier Mechatronics***
- Myunhoe Kim, **Seongwon Lee**, Jaehyun Lim, Jongeun Choi, Seong Gu Kang, "Unexpected Collision Avoidance Driving Strategy Using Deep Reinforcement Learning"   ***IEEE Access***
- Joohwan Seo, **Seongwon Lee**, Joonho Lee, and Jongeun Choi, "Nonaffine helicopter control design and implementation based on a robust explicit nonlinear model predictive control"   ***IEEE Transactions on Control System Technology***

PROJECT EXPERIENCE

Mind in Vitro (MiV) Project (webpage)   *Jan. 2023 - present*

National Science Foundation

- Leading the development of planning algorithm for biology lab automation.

Engineering Open House (webpage)   *Jan. 2023 - present*

University of Illinois, Urbana-Champaign

- Presented a demo on manipulator and mobile robot interactions to middle and high school students.

Robomaster AI Challenge (webpage   *Feb. 2021 - Jun. 2021*

ICRA2019, DJI

- Achieved 3rd place among 32 selected teams worldwide.

BMW Korea Research Competition   *Dec. 2017 - May. 2018 BMW Korea*
- 1st place in showcasing autonomous driving algorithm.

WORK EXPERIENCE

Deep Machine Lab (Startup) (**Webpage**)   Feb. 2021 - Jun. 2021
Machine Learning Researcher (Supervisor: Prof. Hanseok Ko)
- Developing a multimodal human-interactive avatar using gesture generation.

AWARDS AND SCHOLARSHIPS

National Science and Technology Scholarship, Korea Student Aid Foundation   *2016-2020*
Highest Honor, Yonsei University   *Fall 2016*
High Honor, Yonsei University   *Spring 2016, Spring 2017*
Honor, Yonsei University   *Fall 2018*

TEACHING & MENTORING EXPERIENCES

Research Program Mentor Computer Science at UIUC   *Fall 2023, Summer 2024, Spring 2024*
ME 310 Fluid Mechanics   *Fall 2022, Spring 2024, Fall 2024*
TAM 541 Mathematical Methods   *Fall 2023*

TECHNICAL SKILLS

Programming Languages	C++, C, Python, Javascript
Robotics Software	Robot Operating System (ROS), Gazebo, Mujoco, Unreal Engine, Simulink
Hardware	Universal Robot Manipulators, Intel Realsense, Nvidia Jetson, Raspberry Pi, Arduino
Modeling	Autodesk 360, Creo
Graphics	Premiere Pro, Photoshop, Illustrator
General	Ms. Office, Latex

LEADERSHIP EXPERIENCE

- **Military Service for Republic of Korea**
  Platoon leader's secretary   *Mar. 2014 - Dec. 2015*
  - Completed military service as a sergeant.

- **Korean Society Association (KSA) in UIUC**
  Graduate Student President   *Aug. 2023 - July. 2024*
  - Organized social and job fair events for Korean graduate students at UIUC as a graduate student president.

- **Student Council of School of Mechanical Engineering in Yonsei University**
  Student President   *Mar. 2016 - Dec. 2016*
  - Served as a student president of the School of Mechanical Engineering at Yonsei University.

- **Korean Soccer Club in UIUC**
  Captain   *May. 2024 - present*

- **Soccer Club of the School Of Mechanical Engineering at Yonsei University**
  Captain   *Dec. 2017 - May. 2018*