



# Taeyoung Kim

ROBOTICS · SLAM ENGINEER

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“Nothing ventured, nothing gained.”

## Summary

This is Taeyoung Kim, who wants to become robotics SLAM / Navigation engineer. My research interests are Sensor fusion and SLAM. I like to take on challenging tasks and I like to grow up with my colleagues around me. That's why I record and share what I did on my Github or Technical Blog. I'm also interested in contributing open-source projects.

## Research Interests

- SLAM / Spatial AI** Focusing on LiDAR(-inertial) SLAM, Robust Localization  
**Sensor fusion** Spatial-temporal calibration for LiDAR, IMU, and Camera etc.

## Education

### Yonsei University @CILAB

Seoul, S.Korea

M.S. IN VEHICLE CONVERGENCE ENGINEERING (ADVISOR: PROF. EUNTAI KIM)

Mar. 2022 - Feb. 2024 (Expected)

- **Total GPA** : 4.05 / 4.3
- **Teaching Assistant** : 2023-1 Research Experience for Undergraduate (REU)
- Focusing on LiDAR (-inertial) SLAM
- Research on LiDAR-IMU extrinsic calibration method

### Kwang Woon University

Seoul, S.Korea

B.S. IN SCHOOL OF ROBOTICS

Mar. 2016 - Feb. 2022

- **Total GPA** : 4.10 / 4.50, **Major GPA** : 4.41 / 4.50
- **Club**: BARAM (Robotics Academic Group) - [2020 Staff] , DAISY (English Conversation Club) - [2019 Spring President]

## Work Experience

### KIST(Korea Institute of Science and Technology) @Robot Vision Lab

Seoul, S.Korea

STUDENT INTERN (ADVISOR : DR. KANGGEON KIM)

Sep. 2020 - Feb. 2021

- Research on Monocular Depth Estimation
- Participated in KIST disinfect robot (AI Disinfection Robot) project - [Video]

## Projects

### Cooperative mapping, environment recognition, and autonomous driving technology for multiple mobile robots operating in large indoor workspaces

KEIT

PARTICIPANT

Apr. 2023 - Dec. 2023

- Development multi robot navigation systems - [Certification]

### Development of Core Technology for Mobile Manipulator for 5G Edge-based Transportation and Manipulation

Ministry of Science and ICT

PARTICIPANT

May. 2022 - Dec. 2022

- Development LiDAR-inertial visual SLAM algorithm for mobile manipulator - [Certification]

### Developing LiDAR-IMU calibration methods for mobile robots

Hyundai NGV

PARTICIPANT

May. 2022 - Feb.2024

- Development LiDAR-IMU extrinsic calibration method focusing on mobile robots - [Certification]

## Publication

### INTERNATIONAL JOURNAL

## “Standard for the Quantification of a Sterilization Effect Using an Artificial Intelligence Disinfection

2021.11 **Robot**”, Heeju Hong, Wonkook Shin, Jieun Oh, Sunwoo Lee, Taeyoung Kim, Woosub Lee, Jongsuk Choi, Seungbeum Suh and Kanggeon Kim, Sensors 21, no. 23: 7776. <https://doi.org/10.3390/s21237776>

Sensors

## INTERNATIONAL CONFERENCE

2021.7 “**Dense Monocular SLAM applied Depth Estimation**”,  
Taeyoung Kim, Omer Faruk Ince, JongBeom Baek, Jun-Sik Kim, KangGeon Kim, - **[Paper]**, **[Video]**

UR 2021  
(Work in progress)

## DOMESTIC CONFERENCE

2023.6 “**Comparative analysis of LiDAR-inertial odometry/SLAM algorithm performance for ground robots**”,  
Taeyoung Kim, Yechan Park, Euntai Kim, - **[Paper]**

ICROS 2023

2021.5 “**Recognition of disinfection targets and generation of semantic map for disinfection robot**”,  
TaeHwan Kim, Taeyoung Kim, GiJae Lee, KangGeon Kim, - **[Paper]**

KROS 2021

# Honors & Awards

## AWARDS

2023.10 **4th Place on LiDAR-inertial track**, ICCV 2023 SLAM Challenge - **[Certification]**, **[Video]**

AirLab, Carnegie  
Mellon Univ.

2020.11 **Dean's List**, for Academic Excellence

KwangWoon Univ.

2020.9 **5th Place on B-track**, Korea Health Datathon 2020

NAVER CLOUD

PLATFORM

2019.10 **Dean's List**, for Academic Excellence

KwangWoon Univ.

## HONORS

2023 **Full tuition Scholarship**,  
2022 for the students who have been based on Recruitment Conditions on Hyundai Motors Group  
2021 **National Science and Engineering Undergraduate Scholarship**,  
2020 for the students who have been recommended by the university (**Full tuition Scholarship**)  
2019-2 **Full tuition Scholarship**, for Top seat last semester

Hyundai NGV

Korea Student Aid

Foundation

KwangWoon Univ.

# Skills

**Programming** C++ / C, Python, Matlab

**DevOps** Git, Docker, ROS2 / ROS

**Languages** Korean, English

# Extracurricular Activity

## Technical Blogs

Github blog

WRITERS

May. 2020 - Present

- You can easily access the blog using **[this link]**.
- Writing some posts about lecture summary, paper review, some tips for developments.
- To share what I have studied with others and to remember it longer.

## Open Source Contribution Academy (2021 - 2022)

Ministry of Science and ICT

2022 MENTOR, 2021 MENTEE

Aug. 2021 - Nov. 2022

- I am in the process of translating a Pytorch tutorial into Korean that I want to contribute to the spread of PyTorch.
- Using Github, I developed the ability to collaborate and contribute to open source.
- The open source repository I've contributed can be found **[tutorials-kr]**.

## CLOVA AI RUSH 2021

NAVER AI Lab, NAVER CLOVA

PARTICIPANT

May. 2021 - Jun.2021

- Only 150 students are allowed to participate in this project.
- I developed my own deep learning model related to multi-label classification.
- I ranked 30th on Project 1-3.

## 2021 Spring Capstone Design

KwangWoon Univ.

### PROJECT

Mar. 2021 - Jun.2021

- I made a wireless charging electric vehicle charging robot.
- I designed the control input algorithm, trained deep learning model, and developed the ROS package.
- The source code related to this project is on my **[Github repository]**.

## Monocular Depth Estimation with ORB-SLAM2

BARAM (Robotics Academic Group)

### PERSONAL TOY PROJECT

Sep. 2020 - Nov. 2020

- I was curious about the performance of the recent depth estimation model.
- I used '**Monocular Depth Estimation with Transfer Learning pretrained MobileNetV2**' model and applied to ORB-SLAM2 also compared with ORB-SLAM2(Monocular mode), ORB-SLAM2(RGB-D mode)
- The source code related to this toy project is on my **[Github repository]**.