

# Seokjun Kwon

M.S STUDENT · SEJONG UNIVERSITY

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## Education

### Sejong University

M.S IN DEPARTMENT OF AI ROBOTICS

- Advisor: Prof. Yukyung Choi

Seoul, South Korea

Mar.2024 -

### Sejong University

B.S IN DEPARTMENT OF INTELLIGENT MECHATRONICS ENGINEERING

- Honors: Cum Laude (Overall GPA: 3.94/4.5, Major GPA: 4.24/4.5)
- Undergrad advisor: Prof. Yukyung Choi

Seoul, South Korea

Mar.2018 - Feb.2024

## Work

### NAVER LABS Corp.

ROBOT VISION & LEARNING TEAM INTERN

- Advisor: Sunwook Choi

Seongnam, South Korea

Apr.2025 - Sep.2025

## Publications

### [J2] ContraText-DETR: Boosting Industrial Scene Text Detection Based on Contrastive Learning and Synthetic Low-Contrast Text

Jul, 2025

YUNSEO JEONG, **SEOKJUN KWON**, JEONGMIN SHIN, AND YUKYUNG CHOI

- IEEE Sensors Journal
- Impact Factor: 4.5 (SCIE, Q1)

### [C3] Boosting Cross-spectral Unsupervised Domain Adaptation for Thermal Semantic Segmentation

May, 2025

**SEOKJUN KWON\***, JEONGMIN SHIN\*, NAMIL KIM, SOONMIN HWANG, AND YUKYUNG CHOI

- International Conference on Robotics and Automation (ICRA)
- Acceptance Rate: 38.7%

### [C2] A Two-Stage Framework for Small Character Detection in the Manufacturing Industry

Nov, 2024

YUNSEO JEONG\*, **SEOKJUN KWON\***, JEONGMIN SHIN AND YUKYUNG CHOI

- International Conference on Control, Automation and Systems (ICCAS)

### [J1] UMHE: Unsupervised Multispectral Homography Estimation

Apr, 2024

JEONGMIN SHIN, JIWON KIM, **SEOKJUN KWON**, NAMIL KIM, SOONMIN HWANG, AND YUKYUNG CHOI

- IEEE Sensors Journal
- Impact Factor: 4.3 (SCIE, Q1)

### [C1] Unsupervised Domain Adaptation with Mutual Learning for Semantic Segmentation for Thermal Images

Feb, 2023

**SEOKJUN KWON**, JEONGMIN SHIN, DAECHAN HAN, AND YUKYUNG CHOI

- Image Processing and Image Understanding (IPIU)
- Bronze Prize, **Best Paper Award**

## Research Experience

## Research on Autonomous eVTOL Core Convergence Technology for Urban Air Mobility (UAM).

Sejong Univ

FUNDED BY THE MINISTRY OF SCIENCE AND ICT (MSIT)

Jul. 2024 - Current

- Developed an open-vocabulary object detection algorithm for autonomous eVTOL driving and landing.

## Development of an AI-Based High Resolution Low Power Smart Camera and Machine Vision Integrated Solution for Defect Detection in Manufacturing

Sejong Univ

FUNDED BY MINISTRY OF TRADE, INDUSTRY AND ENERGY (MOTIE)

Apr. 2023 - Current

- Developed a real-time small character detection algorithm for machine vision camera. [C2]

## ICT Challenge and Advanced Network of HRD

Sejong Univ

FUNDED BY THE MINISTRY OF SCIENCE AND ICT (MSIT)

Jul. 2022 - Current

- Developed a model for estimating the homography matrix between RGB and Thermal Images. [J1]

## Development of AI Camera Technology to Support Battlefield Environmental Awareness and Weapon System Performance

Sejong Univ

FUNDED BY THE MINISTRY OF SCIENCE AND ICT (MSIT)

Mar. 2022 - Feb. 2023

- Developed a domain adaptation algorithm for a thermal sensor-based semantic segmentation task. [C3, C1]

## Awards

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MSIT 1ST AUTONOMOUS DRIVING AI CHALLENGE

Nov, 2024

### • 3rd Prize

- Developed object detection and instance segmentation algorithms for autonomous driving car.

THE 35TH WORKSHOP ON IMAGE PROCESSING AND IMAGE UNDERSTANDING (IPIU)

Feb, 2023

- Bronze Prize, **Best Paper Award**

SEJONG AI CHALLENGE

Nov, 2022

### • 3rd Prize

- Python Track

## Patents

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METHOD AND APPARATUS FOR TEXT DETECTION IN INDUSTRIAL ENVIRONMENTS USING A DEEP LEARNING MODEL

May, 2025

- Korea patent (applied) No. 10-2025-0069631

MULTI-SOURCE DOMAIN LEARNING METHOD AND APPARATUS FOR OBJECT DETECTION

May, 2025

- Korea patent (applied) No. 10-2025-0064651

MULTISPECTRAL HOMOGRAPHY ESTIMATION METHOD AND APPARATUS

Jan, 2025

- Korea patent (registered) No. 10-751399

METHOD FOR DETECTING DEFECTS IN MANUFACTURING INDUSTRIAL PRODUCTS AND APPARATUS

Sep, 2024

- Korea patent (applied) No. 10-2024-0118908

CROSS SPECTRAL UNSUPERVISED DOMAIN ADAPTATION METHOD AND APPARATUS

Aug, 2024

- Korea patent (applied) No. 10-2024-0113714

## Teaching Experience

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### Deep Learning System

Spring, 2024

INSTRUCTOR: PROF. YUKYUNG CHOI

- Role: Head Teaching Assistant

**Artificial Intelligence***Fall, 2023*

INSTRUCTOR: PROF. YUKYUNG CHOI

- Role: Teaching Assistant

**Machine Learning***Spring, 2023*

INSTRUCTOR: PROF. YUKYUNG CHOI

- Role: Teaching Assistant