

Giwon Shin

B.S. CE & EE

Yonsei University, 50 Yonsei-ro, Seodaemun-gu, Seoul 03722, Republic of Korea

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Education

Yonsei University

BACHELOR OF SCIENCE IN CIVIL AND ENVIRONMENTAL ENGINEERING

BACHELOR OF SCIENCE IN ELECTRICAL AND ELECTRONIC ENGINEERING

Seoul, South Korea

Mar. 2017 - Aug. 2023

Publications

INTERNATIONAL CONFERENCE

Jeongho Hyeon, Minwoo Jeong, **Giwon Shin**, Wei-Chih Chern, Vijayan K. Asari, and Hongjo Kim. 2023. *Evaluating Road Segmentation Performance in Participatory Sensing: Investigation into Alternative Metrics*. The 40th International Symposium on Automation and Robotics in Construction (ISARC 2023) Jul. 3–7, Chennai, India, 506-512.

Miyoung Uhm, **Giwon Shin**, Hyoungkwan Kim, Namgyun Kim, and Hongjo Kim. 2023. *Evaluating the Economic Impact of Preventive Treatment Strategies for Municipal Highways*. ASCE International Conference on Computing in Civil Engineering 2023, Jun. 25-28, Corvallis, Oregon.

Taegeon Kim, **Giwon Shin**, Seokhwan Kim, Vijayan K. Asari, and Hongjo Kim. 2023. *Target Domain Training Data Generation by Moving Object Detection and Label Propagation*. ASCE International Conference on Computing in Civil Engineering 2023, Jun. 25-28, Corvallis, Oregon.

Jeongho Hyeon, **Giwon Shin**, Taegeon Kim, Byungil Kim, and Hongjo Kim. 2022. *Challenges of Road Crack Segmentation due to Coarse Annotation*. The International Conference on Computing in Civil and Building Engineering (ICCCBE) Oct. 26-28, 2022, Cape Town, Republic of South Africa, 197-203.

Taegeon Kim, **Giwon Shin**, Seokhwan Kim and Hongjo Kim. 2022. *Generating Pseudo Label of Object Detector for Construction Site Monitoring*. The International Conference on Computing in Civil and Building Engineering (ICCCBE) Oct. 26-28, 2022, Cape Town, Republic of South Africa, 111-119.

DOMESTIC CONFERENCE

Jeongho Hyeon, **Giwon Shin**, Taegeon Kim, Byungil Kim, and Hongjo Kim. 2022. *Challenges in Road Crack Segmentation Due to Coarse Annotation*. Proceedings of 2022 Korea Institute of Construction Engineering and Management Conference, Nov. 18, Seoul, South Korea, 55-56.

JOURNAL (IN REVIEW)

Miyoung Uhm, **Giwon Shin**, Hyoungkwan Kim, Namgyun Kim, and Hongjo Kim. 2023. *Evaluating the Economic Impact of Preventive Treatment Strategies for Municipal Highways*. ASCE Journal of Management in Engineering.

Jeongho Hyeon, Minwoo Jeong, **Giwon Shin**, Wei-Chih Chern, Vijayan K. Asari, and Hongjo Kim. 2023. *Evaluating Road Segmentation Performance in Participatory Sensing: Investigation into Alternative Metrics*. Journal of Computing in Civil Engineering.

Intellectual Properties

PATENT

Exponential deterioration model based road deterioration simulation and maintenance cost estimation framework

HYOUNGKWAN KIM, HONGJO KIM, MIYOUNG UHM, **GIWON SHIN**

10-2023-0165241

Nov. 2023

Research Experience

Yonsei University - School of Civil and Environmental Engineering

Seoul, South Korea

ADVISOR: DR. HONGJO KIM

Feb. 2022 - Nov. 2023

- Project: "Overcoming the limitations for AI based construction site monitoring"
- Project: "Vision-based pavement condition assessment for automated maintenance and repair decision-making"
- Undergraduate Research Internship: Smart Infrastructure Lab

ADVISOR: DR. HYOUNGKWAN KIM

Feb. 2022 - Aug. 2022

- Honors Thesis: "Mobile robot based PPE compliance monitoring"

Yonsei University - School of Electrical and Electronic Engineering

Seoul, South Korea

ADVISOR: DR. BUMSUP HAM

Aug. 2023 - Oct. 2023

- Research Internship: Computer Vision Lab

ADVISOR: DR. SANGHOON LEE

Jun. 2022 - Dec. 2022

- Honors Thesis: "Human pose dataset enhancement and segmentation model improvement"

Korea Agency for Infrastructure Technology Advancement - funded by National Research Foundation of Korea

Seoul, South Korea

ADVISOR: DR. HONGJO KIM

Feb. 2022 - Feb. 2023

- Project: "Vision-based safety securing technology for temporary structure installation and dismantlement"

ADVISOR: DR. HYOUNGKWAN KIM

Feb. 2022 - Feb. 2023

- Project: "Development of smart safety assurance technology for temporary structures"

Korea Institute for Basic Science - funded by Ministry of Education of Korea

Seoul, South Korea

ADVISOR: DR. SANGSEOM JEONG

Dec. 2022 - Jun. 2023

- Project: "Smart response system for urban disaster and health resilience under climate change"

Awards & Honors

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| 2022 | Best Paper Award , KICEM |
| | Infrastructure Design Award , KSCE |
| 2017 | Yonsei-Nexon \sqrt{i} RC Creative Platform Award , Yonsei University, Nexon |
| 2013 | Certificate of Completion: Science , Seoul Education Institute for Gifted |
| 2012 | Samsung New Frontier Scholarship Grand Award , Samsung foundations |

Mentoring

- | | |
|-------------|---|
| Spring 2023 | Miyoung Uhm , DevOpt and CI/CD Development |
| Winter 2022 | Minkyu Koo , Deep learning framework and AI model implementation |
| Fall 2022 | Minwoo Jeong , Operating systems and Virtualization |
| Summer 2022 | Jeoungho Hyeon , Deep learning framework and AI model implementation |
| Spring 2022 | Taegeon Kim , Python programming and Data structure |

Military Service

Presidential Security Service

Blue House, South Korea

AIR DEFENCE OPERATION CONTROL

Apr. 2018 - Dec. 2019

Language Proficiency

TOEFL iBT : 100

Nov. 2023

TOEIC : 950

Aug. 2017

PYTHON: PRIMARY PROGRAMMING LANGUAGE

- Expert in: Deep Learning Frameworks, OOP, Automation