

# YONGSEOP JEONG

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## EXPERIENCE

**Senior Researcher** | Electronics and Telecommunications Research Institute  
Field Robotics Research Section, Artificial Intelligence Robot Research Division  
Artificial Intelligence Creative Research Laboratory

Jul. 2023 –

**Postdoctoral Researcher** | Korea Advanced Institute of Science and Technology  
Multimodal Sensor Fusion / Autonomous Vehicle System Integration and Implementation

Mar. 2023 – Jun. 2023

**Co-Founder, Engineer** | 3SECONDZ Inc.

Self-driving Car Research & Development / Management of Government R&D Projects

- Registered Director (2018/06 – 2021/06)
- Director of Pangyo R&D Center (2020/06 – 2022/01)
- Lead of Pilot Division (2022/01 – 2023/02)

Mar. 2019 – Feb. 2023

## EDUCATION

**Doctor of Philosophy** | Korea Advanced Institute of Science and Technology, Daejeon, Republic of Korea  
Robotics, Future Vehicle

Feb. 2023

Dissertation: Purpose-Built Sensor Fusion for Autonomous Vehicles (Supervisor: In So Kweon)

**Master of Science in Engineering** | Korea Advanced Institute of Science and Technology, Daejeon, Republic of Korea  
Robotics

Feb. 2013

Thesis: An Integrated UGV and UAV Robot System for Effective Surveillance (Supervisor: In So Kweon)

**Bachelor of Science in Engineering** | Sungkyunkwan University, Seoul, Republic of Korea

Feb. 2011

Electronic and Electrical Engineering

Capstone Design: SODUC – Smart-Oriented Driving in the U-City (Advisor: Tae-Yong Kuc, Best Capstone Design Award)

## PUBLICATION

**Lightweight Depth Completion Network with Local Similarity-Preserving Knowledge Distillation**

Yongseop Jeong\*, Jinsun Park\*, Donghyeon Cho, Yoonjin Hwang, Seibum B. Choi, In So Kweon

Sensors 22 (19), 7388 · 2022/09/28 \*Equal contribution

**Adaptive Cost Volume Fusion Network for Multi-Modal Depth Estimation in Changing Environments**

Jinsun Park\*, Yongseop Jeong\*, Kyungdon Joo, Donghyeon Cho, In So Kweon

IEEE Robotics and Automation Letters 7 (2), 5095-5102 · 2022/02/14 \*Equal contribution

**Identification of Vehicle Dynamics Model and Lever-Arm for Arbitrarily Mounted Motion Sensor**

Yoonjin Hwang, Yongseop Jeong, In So Kweon, Seibum B. Choi

IEEE Sensors Journal 22 (10), 9843-9856 · 2021/12/28

**Online Misalignment Estimation of Strapdown Navigation for Land Vehicle under Dynamic Condition**

Yoonjin Hwang, Yongseop Jeong, In So Kweon, Seibum B. Choi

International Journal of Automotive Technology 22 (6), 1723-1733 · 2021/11/15

**Lane Detection Aided Online Dead Reckoning for GNSS Denied Environments**

Jinhwan Jeon, Yoonjin Hwang, Yongseop Jeong, Sangdon Park, In So Kweon, Seibum B. Choi

Sensors 21 (20), 6805 · 2021/10/13

**Visuomotor Understanding for Representation Learning of Driving Scenes**

Seokju Lee, Junsik Kim, Tae-Hyun Oh, Yongseop Jeong, Donggeun Yoo, Stephen Lin, In So Kweon

In Proceedings of British Machine Vision Conference (BMVC) · 2019/09/09

**EureCar Turbo: A Self-Driving Car that can Handle Adverse Weather Conditions**

Unghui Lee, Jiwon Jung, Seunghak Shin, Yongseop Jeong, Kibaek Park, David Hyunchul Shim, In-so Kweon

In Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) · 2016/10/09

**Relative Pose Estimation for an Integrated UGV-UAV Robot System**

Yongseop Jeong, In So Kweon

In Proceedings of International Conference on Intelligent Robotics and Applications (ICIRA) · 2013/09/25

**Application of Self-Driving Cars for Testing Automotive Parts**

Yongseop Jeong, Jonghyup Lee, Yoonjin Hwang

In Proceedings of KSAE 2022 Annual Autumn Conference & Exhibition · 2022/11/16

## PROJECT

<b>Guide Dog: Development of Navigation AI Technology of a Guidance Robot for the Visually Impaired Person</b> Participating Researcher, Lead Organization (Electronics and Telecommunications Research Institute) <ul style="list-style-type: none"><li>Quadrupedal Robot Navigation</li></ul>	Jul. 2023 – Present
<b>Lightweight Network based Depth Completion for 3D Object Detection</b> Participating Researcher, Lead Organization (3SECONDDZ Inc.) <ul style="list-style-type: none"><li>Stereo Vision + LiDAR + RADAR sensor fusion system implementation for depth completion</li></ul>	May. 2022 – Dec. 2022
<b>Autonomous Vehicle for Tire Endurance Test on Proving Ground</b> Participating Researcher, Lead Organization (3SECONDDZ Inc.) <ul style="list-style-type: none"><li>Converting mass-produced car into self-driving car (using vehicle CAN)</li><li>Sensor fusion system implementation for autonomous vehicle (Vision + GPS + IMU + Vehicle stock sensors)</li><li>Perform autonomous driving for tire endurance test in proving ground (1600km in 3 days)</li></ul>	Jul. 2021 – Jun. 2022
<b>Active Suspension System for Improvement over 5% Ride and Handling Performance using Road Surface and Road Shape</b> Participating Researcher, Participating Organization (3SECONDDZ Inc.) <ul style="list-style-type: none"><li>Mono-vision-based road surface classifier network design</li><li>Mono-vision based road shape estimator implementation</li><li>Implementation of communication between vehicle ECU and designed system</li><li>System integration with other modules</li></ul>	Apr. 2019 – Dec. 2021

## AWARD

<b>The 12<sup>th</sup> Autonomous Vehicle Contest</b>   Hyundai Motor Group Passion Prize (#5), Korea Advanced Institute of Science and Technology EureCar Turbo	Oct. 2014
<b>Student Design Showcase</b>   National Instruments Finalist, EureCar: Korea Advanced Institute of Science and Technology Self-Driving Car	May. 2014
<b>The 5<sup>th</sup> Capstone Design Contest</b>   School of Information and Communication Engineering, Sungkyunkwan University Grand Prize (#1), SODUC: Smart-Oriented Driving in U-City	Nov. 2010
<b>Robot Software Contest</b>   Korea Robotics Society (KROS) Silver Prize, ESOP (Easy Operation)	Aug. 2009
<b>National Excellence Scholarship (Science &amp; Engineering)</b>   Korea Student Aid Foundation Full Tuition Waiver	Mar. 2006

## ACTIVITY

<b>Speaker</b> <ul style="list-style-type: none"><li>Future Mobility Technology Exchange (Korea Advanced Institute of Science and Technology)</li><li>Freshmen Seminar (Kyung Hee University)</li></ul>	Feb. 2023 Dec. 2022
<b>Reviewer</b> <ul style="list-style-type: none"><li>ETRI Journal (ISSN: 1225-6463)</li><li>Journal of the Korea Institute of Military Science and Technology (ISSN: 1598-9127)</li></ul>	Dec. 2024 – Present Oct. 2022 – Present
<b>Teaching Assistant</b> <ul style="list-style-type: none"><li>PD513 Future Vehicle Capstone Design, Division of Future Vehicle, KAIST</li></ul>	Sep. 2013 – Dec. 2016

## REFERENCE

<b>In So Kweon</b>   Emeritus Professor (KEPCO Endowed Chair Professor), KAIST +82-42-350-3465 · <a href="mailto:iskweon@kaist.ac.kr">iskweon@kaist.ac.kr</a>
<b>Beom-su Seo</b>   Principal Researcher, Electronics and Telecommunications Research Institute +82-42-860-6242 · <a href="mailto:bsseo@etri.re.kr">bsseo@etri.re.kr</a>
<b>Jaewoo Kim</b>   CEO, 3SECONDDZ Inc. +82-42-861-3753 · <a href="mailto:jwkim@3secondz.com">jwkim@3secondz.com</a>
<b>Jinsun Park</b>   Assistant Professor, Pusan National University +82-51-510-2360 · <a href="mailto:ispark@pusan.ac.kr">ispark@pusan.ac.kr</a>
<b>Donghyeon Cho</b>   Associate Professor, Hanyang University +82-2-2220-2657 · <a href="mailto:doncho@hanyang.ac.kr">doncho@hanyang.ac.kr</a>
<b>Kyungdon Joo</b>   Associate Professor, UNIST +82-52-217-3450 · <a href="mailto:kyungdon@unist.ac.kr">kyungdon@unist.ac.kr</a>