Nuri Kim

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CONTACT INFORMATION

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CITIZENSHIP

Republic of Korea

RESEARCH INTERESTS

Vision-based Navigation, Object Detection

EDUCATION

Seoul National University, Seoul, South Korea   Mar. 2016 - Present
Ph.D. in Electrical Engineering and Computer Science Engineering   GPA: 3.82/4.3
Advisor: Prof. Songhwai Oh

Australian National University, Canberra, Australia   Jul. 2014 - Nov. 2014
Overseas Study Program in Electrical Engineering

Korea University, Seoul, South Korea   Mar. 2012 - Feb. 2016
B.S. in Electrical Engineering   GPA: 4.2/4.5, Major: 4.4/4.5
Graduated with Great Honor

RESEARCH EXPERIENCE

Robot Learning Laboratory, SNU (Advisor: Prof. Songhwai Oh)
- Graduate researcher   Mar. 2016 - Present

HandS (Hardware and Software research club)
- Member   Mar. 2014 - Dec. 2015
- Team leader   Jan. 2015 - Dec. 2015

INTERNATIONAL JOURNAL

Nuri Kim, Donghoon Lee, and Songhwai Oh, "Learning Instance-Aware Object Detection Using Determinantal Point Processes", *Computer Vision and Image Understanding* (CVIU), vol. 201, Dec 2020.

Hyemin Ahn, Sungjoon Choi, **Nuri Kim**, Geonho Cha, and Songhwai Oh, "Interactive Text2Pickup Networks for Natural Language based Human-Robot Collaboration," *IEEE Robotics and Automation Letters* (RA-L), vol. 3, no. 4, pp. 3308–3315, Oct. 2018.

INTERNATIONAL CONFERENCE

Nuri Kim, Obin Kwon, Hwiyeon Yoo, Yunho Choi, Jeongho Park, and Songhwai Oh, "Topological Semantic Graph Memory for Image-Goal Navigation," in *Proc of the Conference on Robot Learning* (CoRL), Dec. 2022. **(Oral Presentation, Acceptance Rate: 6.5%)**

Obin Kwon, **Nuri Kim**, Yunho Choi, Hwiyeon Yoo, Jeongho Park, and Songhwai Oh, "Visual Graph Memory with Unsupervised Representation for Visual Navigation," in *Proc. of the International Conference on Computer Vision* (ICCV), Oct. 2021.

Nuri Kim, Minjae Kang, and Songhwai Oh, "Semantic Descriptors into Representation for Robust Indoor Visual Place Recognition," in *Proc. of the International Conference on Control, Automation and Systems* (ICCAS), Oct. 2021.

Nuri Kim, Yunho Choi, Minjae Kang, Songhwai Oh, "GOPE: Geometry-Aware Optimal Viewpoint Path Estimation Using a Monocular Camera," in *Proc. of the International Conference on Control, Automation and Systems* (ICCAS), Oct. 2020.

Hwiyeon Yoo, **Nuri Kim**, Jeongho Park, Songhwai Oh, "Path-Following Navigation Network Using Sparse Visual Memory," in *Proc. of the International Conference on Control, Automation and Systems* (ICCAS), Oct. 2020.

Yunho Choi, **Nuri Kim**, Jeongho Park, Songhwai Oh, "Viewpoint Estimation for Visual Target Navigation by Leveraging Keypoint Detection," in *Proc. of the International Conference on Control, Automation and Systems* (ICCAS), Oct. 2020.

Hyemin Ahn, Sungjoon Choi, **Nuri Kim**, Geonho Cha, and Songhwai Oh, "Interactive Text2Pickup Networks for Natural Language based Human-Robot Collaboration," in *IEEE/RSJ International Conference on Intelligent Robots and Systems* (IROS), Oct. 2018.

AWARDS AND HONORS	**Awards and Scholarships**	
	• Brain Korea 21 Plus Scholarship	2021, 2020, 2019
	• Great Paper Award, Korean Institute of Information Scientists and Engineers	2017
	• Lecture & Research Scholarship	2016
	• Graduate with Great Honor, Korea University	2016
	• National Scholarship For Science and Engineering Funded by Korea Student Aid Foundation (KOSAF)	2014-2015
	• Creative Challenger Scholarship, Korea University	2015

TEACHING EXPERIENCES	**Invited Talk**	
	• Intelligent Robotics Course in Korea University	June 2022
	Teaching Assistant	
	• Graduation Project	Fall 2018
	• Introduction to Intelligent Systems	Fall 2016

RESEARCH PROJECT EXPERIENCES

[Navi AI] Development of AI Technology for Guidance of a Mobile Robot to its Goal with Uncertain Maps in Indoor/Outdoor Environments   2019-Present
- Developed an indoor environment navigation robot that works even in unknown environments by leveraging semantic understanding when maps are unavailable.

[SW Star Lab] Robot Learning: Efficient, Safe, and Socially-Acceptable Machine Learning   2019-Present
- Developed a robot navigation technology capable of predicting crowd trajectories and performing social actions in various crowd cluster scenarios.

[Brain AI] Brain-Inspired AI with Human-Like Intelligence   2019-Present
- Developed a reliable object detector in occluded environments

[Giga 4D] Real-time 4D reconstruction of dynamic objects for ultra-realistic service 2017-2020
- Collected 3D point cloud data for dynamic object registration and alignment.

PROGRAMMING SKILLS

Programming language: Python, C/C++, Matlab, HTML/CSS, Javascript, Google app scripts
Software: Pytorch, Habitat, OpenCV, TensorFlow, LaTeX