SANGHUN JUNG

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Last update: 6/26/2025

EDUCATION

University of Washington (UW)   2022 - present
Ph.D. in Computer Science and Engineering
Advisor: Prof. Byron Boots

Korea Advanced Institute of Science and Technology (KAIST)   2020 - 2022
M.S. in Artificial Intelligence
Advisor: Prof. Jaegul Choo
GPA: 4.06 / 4.30

Korea University   2013 - 2019
B.S. in Computer Science and Engineering
GPA: 3.70 / 4.50; Major GPA: 4.11 / 4.50
Military service during 2015 - 2016

RESEARCH INTEREST

Robot perception, Learning from demonstration, and Autonomous driving

SELECTED PROJECTS

Uncertainty-aware Accurate Terrain Elevation Modeling
Project lead   Mar. 2025 - Present
Predictive distribution modeling of terrain ground elevation with Neural Processes
Keywords: Ground geometry, uncertainty, Neural Processes, Bayesian updates

Amazon Lab126 Internship - Open-vocabulary Indoor Instance Segmentation
Applied Scientist Intern - Summer   Jun. 2024 - Sep. 2024
Find 3D object instances in indoor environments using 2D and 3D associations and VLM.
Keywords: Open-vocabulary, CLIP, Vision language model (VLM), Indoor environments

DARPA Robotic Autonomy in Complex Environments with Resiliency (RACER)
UW Perception Team Lead   Sep. 2022 - Jun. 2023
High-speed ground vehicle autonomy in complex off-road terrain. Took a lead since Jan. 2024
Keywords: Geometry estimation, uncertainty estimation, BEV segmentation

Visual Navigation for Mobile Robots in Indoor Environments
Project member   Nov. 2023 - Jan. 2025
Learning to plan from visual information in indoor environments.
Keywords: Mobile manipulation, multi-modal learning, sim-to-real transfer

Image-based Traversability Prediction using Self-supervision
Project Lead   Mar. 2023 - Jan. 2024
Visual traversability learning from self-supervision signals.
Keywords: Contrastive learning, vehicle trajectories, segment-anything

SELECTED PUBLICATIONS

* denotes equal contributions

[13] **Sanghun Jung**, Daehoon Gwak, Byron Boots, and James Hays. Uncertainty-aware Accurate Elevation Modeling for Off-road Navigation via Neural Processes. *Under Review.*

[12] Tyler Han, Yanda Bao, Gabriel Guo, Anubhav Vishwakarma, Emily Kang, Bhaumik Mehta, Jason Liren Zhou, **Sanghun Jung**, Bryan Xu, Rosario Scalise, and Byron Boots. Model Predictive Adversarial Imitation Learning for Planning from Observation. *Under Review.*

[11] Tyler Han, Preet Shah, Sidharth Rajagopal, Yanda Bao, **Sanghun Jung**, Sidharth Talia, Gabriel Guo, Bryan Xu, Bhaumik Mehta, Rosario Scalise, Emma Romig, and Byron Boots. Demonstrating WheeledLab: Modern Sim2Real for Low-cost, Open-source Wheeled Robotics. *Under Review* [paper]

[10] **Sanghun Jung**, Jingjing Zheng, Ke Zhang, Nan Qiao, Albert Y. C. Chen, Lu Xia, Chi Liu, Yuyin Sun, Xiao Zeng, Hsiang-Wei Huang, Byron Boots, Min Sun, and Cheng-Hao Kuo. Detail Matters for Indoor Open-vocabulary 3D Instance Segmentation. *International Conference on Computer Vision* (**ICCV**), 2025.

[9] Hsiang-Wei Huang, Fu-Chen Chen, Wenhao Chai, Che-Chun Su, Lu Xia, **Sanghun Jung**, Cheng-Yen Yang, Jenq-Neng Hwang, Min Sun, and Cheng-Hao Kuo. Zero-shot 3D Question Answering via Voxel-based Dynamic Token Compression. *Computer Vision and Pattern Recognition* (**CVPR**), 2025.

[8] Xiangyun Meng, Xuning Yang, **Sanghun Jung**, Fabio Ramos, Srid Sadhan Jujjavarapu, Sanjoy Paul, and Dieter Fox. Aim My Robot: Precision Local Navigation to Any Object. *Robotics and Automation Letters* (**RA-L**), 2025. [paper]

[7] **Sanghun Jung**, JoonHo Lee, Xiangyun Meng, Byron Boots, and Alexander Lambert. V-STRONG: Visual Self-Supervised Traversability Learning for Off-road Navigation. *International Conference on Robotics and Automation* (**ICRA**), 2024. [paper]

[6] Amirreza Shaban*, Brian JoonHo Lee*, **Sanghun Jung***, Xiangyun Meng, and Byron Boots. LiDAR-UDA: Self-ensembling Through Time for Unsupervised LiDAR Domain Adaptation. *International Conference on Computer Vision* (**ICCV**), 2023. **Oral Presentation** (1.8% acceptance rate) [paper] [code]

[5] **Sanghun Jung**, Jungsoo Lee, Nanhee Kim, Amirreza Shaban, Byron Boots, and Jaegul Choo. CAFA: Class-Aware Feature Alignment for Test-Time Adaptation. *International Conference on Computer Vision* (**ICCV**), 2023. [paper]

[4] Kyungmin Jo*, Gyumin Shim*, **Sanghun Jung**, Soyoung Yang, and Jaegul Choo. CG-NeRF: Conditional Generative Neural Radiance Fields. *Winter Conference on Applications of Computer Vision* (**WACV**), 2023. [paper]

[3] **Sanghun Jung***, Jungsoo Lee*, Daehoon Gwak, Sungha Choi, and Jaegul Choo. Standardized Max Logits: A Simple yet Effective Approach for Identifying Unexpected Road Obstacles in Urban-Scene Segmentation. *International Conference on Computer Vision* (**ICCV**), 2021. **Oral Presentation** (3.0% acceptance rate) [paper] [code]

[2] Sungha Choi*, **Sanghun Jung***, Huiwon Yun, Joanne T. Kim, Seungryong Kim, and Jaegul Choo. RobustNet: Improving Domain Generalization in Urban-Scene Segmentation via Instance Selective Whitening. *Computer Vision and Pattern Recognition* (**CVPR**), 2021. **Oral Presentation** (4.1% acceptance rate) [paper] [code]

[1] Jinho Choi, **Sanghun Jung**, Deokgun Park, Jaegul Choo, and Niklas Elmqvist. Visualizing for the Non-Visual: Enabling the Visually Impaired to Use Visualization. *Computer Graphics Forum* (**EuroVIS**), 2019. [paper]

WORK EXPERIENCE

Amazon Lab126	Sunnyvale, CA
Applied Scientist Intern	Jun. 2025 - Sep. 2025
Conducting research on improving robotic manipulation tasks using VLA	
Amazon Lab126	Bellevue, WA
Applied Scientist Intern	Jun. 2024 - Sep. 2024
Conducted research on open-vocabulary indoor 3D instance segmentation	
Bear Robotics	Redwood City, CA / Seoul, South Korea
Robotics Engineer	2018 - 2020
Conducted projects on velocity control, sensor calibration, localization	

SCHOLARSHIP

KAIST Support Scholarship, KAIST	2020, 2021
Veritas Program Scholarship, Korea University	2018
Academic Excellence Scholarship for Freshmen, Korea University	2013

AWARDS

Best Poster Award - Standardized Max Logits, KAIST AI Workshop	2022

Invited Talks

Pre-Training for Robot Learning Workshop @ CoRL 2023 (Spotlight Talk)   Nov., 2023
Visual Self-Supervised Traversability Learning for Off-road Navigation

Hyundai Motor Group AI Research Seminar   Jul., 2021
Domain Generalization in Urban-Scene Segmentation

Naver AI LAB   Jul., 2021
RobustNet: Improving Domain Generalization in Segmentation