

EDUCATION

University of Washington (UW) Ph.D. in Computer Science and Engineering Advisor: Prof. Byron Boots	2022 - present
Korea Advanced Institute of Science and Technology (KAIST) M.S. in Artificial Intelligence Advisor: Prof. Jaegul Choo GPA: 4.06 / 4.30	2020 - 2022
Korea University B.S. in Computer Science and Engineering GPA: 3.70 / 4.50; Major GPA: 4.11 / 4.50 Military service during 2015 - 2016	2013 - 2019

RESEARCH INTEREST

Robot perception, Mobile manipulation, Learning from demonstration, and Autonomous driving

SELECTED PROJECTS

Amazon Lab126 Internship - Visual Affordance Learning for Robot Manipulation <i>Applied Scientist Intern - Summer</i> Learning visual affordance from VLM/LLMs. Keywords: Visual affordance, large-language model, robot manipulation	Jun. 2024 - present
DARPA Robotic Autonomy in Complex Environments with Resiliency (RACER) <i>UW Perception Team Lead</i> High-speed ground vehicle autonomy in complex off-road terrain. Took a lead since Jan. 2024 Keywords: Geometry estimation, uncertainty estimation, BEV segmentation	Sep. 2022 - present
Visual Navigation for Mobile Robots in Indoor Environments <i>Project member</i> Learning to plan from visual information in indoor environments. Keywords: Mobile manipulation, multi-modal learning, sim-to-real transfer	Nov. 2023 - present
Image-based Traversability Prediction using Self-supervision <i>Project Lead</i> Visual traversability learning from self-supervision signals. Keywords: Contrastive learning, vehicle trajectories, segment-anything	Mar. 2023 - Jan. 2024
Effective Adaptation of LiDAR Segmentation to Distributional Shifts <i>Project Member</i> Self-training with ensembling; simulation of beam pattern difference, temporal consistency Keywords: Self-training, structural point cloud subsampling, learned aggregation	Oct. 2022 - Mar. 2023

PUBLICATIONS

* denotes equal contributions

- [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]

PREPRINTS

- [2] Jungsoo Lee, Juyoung Lee, **Sanghun Jung**, and Jaegul Choo. Improving Evaluation of Debiasing in Image Classification. *arXiv preprint: 2206.03680*, 2023. [paper]
- [1] Minsoo Lee, Chaeyeon Chung, Hojun Cho, Minjung Kim, **Sanghun Jung**, Minhyuk Sung, and Jaegul Choo. 3D-GIF: 3D-Controllable Object Generation via Implicit Factorized Representations with Unposed 2D Images. *arXiv preprint: 2203.06457*, 2022. [paper]

WORK EXPERIENCE

Bear Robotics Korea	Seoul, South Korea
<i>Robotics Engineer</i>	2019 - 2020
Conducted projects such as safe velocity controller and odometry and localization testing	
Bear Robotics	Redwood City, CA, US
<i>Robotics Engineering Intern</i>	2018 - 2019
Developed robot algorithms such as depth camera extrinsic calibration	

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
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INVITED TALKS

Pre-Training for Robot Learning Workshop @ CoRL 2023 (Spotlight Talk)	Nov., 2023
Visual Self-Supervised Traversability Learning for Off-road Navigation	
KAIST AI Workshop	Jan., 2022
Standardized Max Logits: A Simple yet Effective Approach for Identifying Unexpected Road Obstacles	
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	

PROGRAMMING SKILLS

Languages: Python, C++, Bash
Technologies: Pytorch, Docker, Linux, Robot Operating System (ROS1)