# Daehee Park

Ph.D. Candidate

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## RESEARCH INTERESTS

**Deep learning**
- Multi-modal deep learning and graph neural networks

**Trajectory prediction**
- Predicting future motion of various agents under interacting system and its applications

**Transfer learning**
 - Improving adaptability of deep learning model on unseen data during training/test time

**Computer vision**
- Perception methods including detection, tracking and segmentation

## EDUCATION

**KAIST,** Daejeon, Korea                                    2020.03 - 2025.02(expected)
Ph.D. in Mechanical Engineering
Advisor: Kuk-Jin Yoon

**KAIST,** Daejeon, Korea                                    2018.03 – 2020.02
M.S. in Mechanical Engineering
Thesis:  Removal of reflected virtual images in visual recognition utilizing 3D depth information

**KAIST**, Daejeon, Korea                                    2013.03 – 2018.02
B.S. in Mechanical Engineering (Double major in Business and Technology Management)

**Gwangju Science High School for the Gifted**, Gwangju, Korea            2011.03 – 2013.02

## PUBLICATIONS

**T4P: Test-Time Training of Trajectory Prediction via Masked Autoencoder and Actor-specific Token Memory**
**Daehee Park**, Jae-Seok Jeong, Sung-Hoon Yoon, Jaewoo Jeong, Kuk-Jin Yoon
Conference on Computer Vision and Pattern Recognition (CVPR), 2024

**Multi-agent Long-term 3D Human Pose Forecasting via Interaction-aware Trajectory Conditioning**
Jaewoo Jeong*, **Daehee Park**\*, Kuk-Jin Yoon ( *: equal contribution)
Conference on Computer Vision and Pattern Recognition (CVPR), **Highlight**, 2024

**Diffusion-Guided Weakly Supervised Semantic Segmentation**

Sung-Hoon Yoon, Hoyong Kwon, Jaeseok Jeong, **Daehee Park**, and Kuk-Jin Yoon

European Conference on Computer Vision (ECCV), 2024

**Improving Transferability for Cross-domain Trajectory Prediction via Neural Stochastic Differential Equation**

**Daehee Park**, Jaewoo Jeong, Kuk-Jin Yoon

AAAI Conference on Artificial Intelligence (AAAI), 2024

**Leveraging Future Relationship Reasoning for Vehicle Trajectory Prediction**

**Daehee Park**, Hobin Ryu, Yunseo Yang, Jegyeong Cho, Jiwon Kim, Kuk-Jin Yoon

International Conference on Learning Representations (ICLR), 2023

**BIPS: Bi-modal Indoor Panorama Synthesis via Residual Depth-Aided Adversarial Learning**

Changgyoon Oh*, Wonjune Cho*, Yujeong Chae*, **Daehee Park**\*, Lin Wang, Kuk-Jin Yoon

( *: equal contribution)

European Conference on Computer Vision (ECCV), 2022

**Unlocking the potential of ordinary classifier: Class-specific adversarial erasing framework for weakly supervised semantic segmentation**

Hyeokjun Kweon, Sung-Hoon Yoon, Hyeonseong Kim, **Daehee Park**, Kuk-Jin Yoon

Proceedings of the IEEE/CVF international conference on computer vision (ICCV), 2021

**Identifying Reflected Images from Object Detector in Indoor Environment Utilizing Depth Information**

**Daehee Park**, Yong-Hwa Park

IEEE Robotics and Automation Letters (RA-L) & IEEE International Conference on Robotics and Automation (ICRA), 2020

## WORK EXPERIENCE

**Qualcomm**, (Remote, 2024.04 – 2024.09)

Deep Learning R&D Intern

- Work with the US team in remote
- Development of deep learning models to predict trajectories and/or intentions for road users

**Naver Labs**, (Seongnam, Korea, 2021.06 – 2021.08)

Research Intern

- Development of a deep learning model that predict future trajectory of road agents for autonomous driving
- Development of realistic driving simulator using deep trajectory prediction network

## PATENT

**Electronic device and method of identifying false image of object attributable to reflection in indoor environment thereof**

Yong-hwa Park, **Daehee Park**, Simeneh Semegne Gulelat

US-Registration No. US11282178B2 / EP-Registration No. EP3772701 / KR-Registration No. 10-2287478-0000

## PROJECTS

**Development of identifying abnormal vehicles under complex road scenario,** 2021.03 – Present
Funded by Electronics and Telecommunications Research Institute (ETRI)

- Designing, building and implementing deep neural network for abnormal vehicle detection in video
- Developing robust prediction system against perception error in video using Neural SDE
- Publishing a paper to top-level machine learning conference (AAAI)

**Development of trajectory prediction method of road agents for autonomous driving,** 2020.09 – 2022.12
Funded by Naver Labs

- Designing, building and implementing state-of-the-art trajectory prediction network for autonomous driving.
- Improving long-term prediction under multi-agent interacting system
- Publishing a paper to top-level machine-learning conference (ICLR)

**Development of rescue boat technology for coast guard**, 2019.09 – 2020.08
Funded by Korea Institute of Marine Science and Technology (KIMST)

- Designing, development of vision system and specifying sensor
- Developing small target detection method using thermal (IR) imaging

**Development of human-care robot technology for aging society,** 2018.03 – 2020.03
Funded by Electronics and Telecommunications Research Institute (ETRI)

- Designing, building and implementing human detection and tracking algorithm
- Developing personalized human tracker for service robots via online learning
- Publishing a paper to top-level robotics conference and journal (ICRA & RA-L)

## AWARD AND HONORS

- Research Scholarship, Funded by Samsung Advanced Institute of Technology (2022.09~)
- 1st Place in Best Paper Awards during IPIU 2022, 34th Workshop on Image Processing and Image Understanding (2022.02)
- Outstanding Achievement Award for Academic Excellence, Department of Mechanical Engineering, KAIST (2016)

## ACADEMIC SERVICE

- **Reviewer of robotics conferences & journal**
  RA-L, ICRA, IROS, T-IV
- **Reviewer of ML&CV conferences**
  NeurIPS, ICLR, CVPR, ECCV, CVPR

## COMPUTER SKILLS

- **Programming Language**
  Strong: Python, MATLAB
  Knowledgeable: C, C++

- **Open Source**
  Pytorch, Ray, Git, PyG, Carla Simulator

## LANGUAGES

Korean (native), English (fluent)