# Inkyu Shin | Curriculum Vitae

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I am a third-year Ph.D. student at Korea Advanced Institute of Science and Technology (KAIST) under the co-supervision of Prof. Kuk-Jin Yoon and Prof. In So Kweon. I earned my B.S and M.S degrees in automotive engineering from Hanyang University(HYU) and KAIST in 2019 and 2021. I interned at NEC Laboratories America, Inc, San Jose, CA (with Dr. Yi-Hsuan Tsai), and Google Research (with Dr. Liang-Chieh Chen, and Dr. Jun Xie)

## Research Interests

My research interest lies in computer vision, with a focus on developing effective learning method for processing data and building strong recognition models. Specifically, I am interested in the following research topics:

○ **Learning for Data-efficiency**
Learning from Simulation
Domain Adaptation
Self-supervised Learning

○ **Learning for Visual Recognition**
Image Segmentation
Video Segmentation

but also open to other explorable/challenging domains.

The ultimate purpose of these researches is to apply to a variety of applications (e.g., Autonomous driving, Robot Navigation, AR/VR).

## Research Experience

○ **Google Research**                                                                       **LA, CA (virtual)**
*Student Researcher Intern, Mentors: Liang-Chieh Chen and Jun Xie*          *May 2022 - April 2023*

○ **NEC Laboratories America, Inc**                                               **San Jose, CA (virtual)**
*Research Intern, Mentors: Yi-Hsuan Tsai*                                          *May 2021 - Aug 2021*

○ **Korea University**                                                                             **Seoul, Korea**
*Research Intern, Supervisor: Jaegul Choo*                                          *Sep 2018 - Dec 2018*

○ **Hanyang University**                                                                        **Seoul, Korea**
*Research Assistant, Supervisor: Myuong-Ho Sunwoo*                             *Jul 2018 - Aug 2018*

## Education

○ **Korea Advanced Institute of Science and Technology (KAIST)**          **Daejeon, Korea**
*Future Vehicle Ph.D. degree, Co-Advisors: Kuk-Jin Yoon and In So Kweon*          *2021–*

○ **Korea Advanced Institute of Science and Technology (KAIST)**          **Daejeon, Korea**
*Future Vehicle M.S degree, Advisor: In So Kweon*                                        *2019–2021*
Master's Thesis: Learning to Scale the Labels for Self-training based Domain Adaptation

○ **Hanyang University (HYU)**                                                              **Seoul, Korea**
*AUTOMOTIVE ENGINEERING B.S degree*                                                     *2013–2019*

# Publications

**(C: conference / J: journal / P: preprint / * :equal contributions)**

International Conference...........................................................................................

- **[P3] MATE: Masked Autoencoders are Online 3D Test-Time Learners**
  Muhammad Jehanzeb Mirza*, **Inkyu Shin***, Wei Lin*, Andreas Schriebl, Kunyang Sun, Jaesung Choe,
  Horst Possegger, Mateusz Kozinski, In So Kweon, Kuk-Jin Yoon, Horst Bischof
  **arXiv**, 2023

- **[C11] TTA-COPE: Test-Time Adaptation for Category-Level Object Pose Estimation**
  Taeyeop Lee, Jonathan Tremblay, Valts Blukis, Bowen Wen, Byeong-Uk Lee, **Inkyu Shin**, Stan Birchfield,
  In So Kweon, Kuk-Jin Yoon
  Computer Vision and Pattern Recognition (**CVPR**), 2023

- **[C10] Bidirectional Domain Mixup for Domain Adaptive Semantic Segmentation**
  Daehan Kim*, Minseok Seo*, Kwanyong Park, **Inkyu Shin**, Sanghyun Woo
  Association for the Advancement of Artificial Intelligence (**AAAI**), 2023

- **[C9] Learning Classifiers of Prototypes and Reciprocal Points for Universal Domain Adaptation**
  Sungsu Hur, **Inkyu Shin**, Kwanyong Park, Sanghyun Woo, In So Kweon
  Winter Conference on Computer Vision (**WACV**), 2023

- **[C8] Moving from 2D to 3D: volumetric medical image classification for rectal cancer staging**
  Joohyung Lee*, Jieun Oh*, **Inkyu Shin**, You-sung Kim, Dae Kyung Sohn, Tae-sung Kim, In So Kweon
  Medical Image Computing and Computer Assisted Intervention (**MICCAI**), 2023

- **[C7] MM-TTA: Multi-Modal Test-Time Adaptation for 3D Semantic Segmentation**
  **Inkyu Shin**, Yi-Hsuan Tsai, Bingbing Zhuang, Samuel Schulter, Buyu Liu, Sparsh Garg, In So Kweon,
  Kuk-Jin Yoon
  Computer Vision and Pattern Recognition (**CVPR**), 2022
  *- Received Qualcomm Innovation Award 2022.*

- **[C6] UDA-COPE: Unsupervised Domain Adaptation for Category-level Object Pose Estimation**
  Taeyeop Lee, Byeong-Uk Lee, **Inkyu Shin**, Jaesung Choe, Ukcheol Shin, In So Kweon, Kuk-Jin Yoon
  Computer Vision and Pattern Recognition (**CVPR**), 2022

- **[P2] Unsupervised Domain Adaptation for Video Semantic Segmentation**
  Kwanyong Park*, **Inkyu Shin***, Sanghyun Woo, In So Kweon
  **arXiv**, 2021

- **[C5] LabOR: Labeling Only if Required for Domain Adaptive Semantic Segmentation**
  **Inkyu Shin**, Dong-Jin Kim, Jae Won Cho, Sanghyun Woo, Kwanyong Park, In So Kweon
  International Conference on Computer Vision (**ICCV**), 2021 (**Oral**)
  *- Received Qualcomm Innovation Award 2021.*

- **[P1] Learning Representations by Contrasting Clusters While Bootstrapping Instances**
  Junsoo Lee, Hojoon Lee, **Inkyu Shin**, Jaekyoung Bae, In So Kweon, Jaegul Choo
  **arXiv**, 2020

- **[C4] Discover, Hallucinate, and Adapt:**
  **Open Compound Domain Adaptation for Semantic Segmentation**
  Kwanyong Park, Sanghyun Woo, **Inkyu Shin**, In So Kweon

Conference on Neural Information Processing Systems (**NeurIPS**), 2020
- *Received Qualcomm Innovation Award 2021.*

○ **[C3] Two-phase Pseudo Label Densification for Self-training based Domain Adaptation**
**Inkyu Shin**, Sanghyun Woo, Fei pan, In So Kweon
European Conference on Computer Vision (**ECCV**), 2020
- Also presented at "Visual Learning with Limited Labels" Workshops in conjunction with (**CVPR**), 2020

○ **[C2] Unsupervised Intra-domain Adaptation for Semantic Segmentation through Self-Supervision**
Fei pan, **Inkyu Shin**, Francois Rameau, Seokju Lee, In So Kweon
Computer Vision and Pattern Recognition (**CVPR**), 2020 (**Oral**)
- *Received Qualcomm Innovation Award 2020.*

○ **[C1] Image-to-Image Translation via Group-wise Deep Whitening-and-Coloring Transformation**
Wonwoong Cho, Sungha Choi, David Keetae Park, **Inkyu Shin**, Jaegul Choo
Computer Vision and Pattern Recognition (**CVPR**), 2019 (**Oral**)

## Awards

○ 2022: Qualcomm Innovation Award.
○ 2021: Qualcomm Innovation Award.
○ 2020: Qualcomm Innovation Award.

## IT skills

○ Languages: Python, MATLAB, C, LATEX
○ Libraries: PyTorch, TensorFlow

## References

○ **Prof. In So Kweon**
Relationship: M.S & Ph.D Advisor
Professor, Electrical Engineering, KAIST
Email: iskweon77@kaist.ac.kr

○ **Prof. Kuk-Jin Yoon**
Relationship: Ph.D Advisor
Professor, Mechanical Engineering, KAIST
Email: kjyoon@kaist.ac.kr

○ **Dr. Yi-Hsuan Tsai**
Relationship: Internship mentor at NEC Lab.
(Previous) Research scientist, NEC Lab.
(Current) AI/ML Tech Lead Manager, Google
Email: wasidennis@gmail.com

○ **Dr. Liang-Chieh Chen**
Relationship: Internship mentor at Google Research
(Previous) Research scientist, Google Research
(Current) Research scientist, ByteDance
Email: lcchen@cs.ucla.edu