

Hankook Lee

PH.D CANDIDATE @ ALIN LAB IN KAIST

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Research Interests

- Self-supervised learning
- Transfer and few-shot learning
- Data augmentation techniques
- Neural architectures

Education

KAIST (Korea Advanced Institute of Science and Technology)

Ph.D. in Electrical Engineering

- Advisor: Jinwoo Shin

Daejeon, South Korea

Sep. 2018 - present

KAIST (Korea Advanced Institute of Science and Technology)

M.Sc. in Electrical Engineering

- Advisor: Jinwoo Shin

Daejeon, South Korea

Mar. 2016 - Aug. 2018

KAIST (Korea Advanced Institute of Science and Technology)

B.Sc. in Mathematics and Computer Science (Double major)

- GPA: 3.93/4.3 (Magna Cum Laude)

Daejeon, South Korea

Mar. 2010 - Feb. 2016

Publications

C: Conference, W: Workshop, P: Preprint, *: Equal contribution

[C8] Patch-level Representation Learning for Self-supervised Vision Transformers

Sukmin Yun, **Hankook Lee**, Jaehyung Kim, Jinwoo Shin

- Computer Vision and Pattern Recognition (CVPR), 2022

New Orleans, LA, USA

June. 2022

[C7/W] Improving Transferability of Representations via Augmentation-Aware Self-Supervision

Hankook Lee, Kibok Lee, Kimin Lee, Honglak Lee, Jinwoo Shin

- Neural Information Processing Systems (NeurIPS), 2021
- International Conference on Machine Learning (ICML) 2021 Workshop: Self-Supervised Learning for Reasoning and Perception

Online

Dec. 2021

[C6] Self-Improved Retrosynthetic Planning

Junsu Kim, Sungsoo Ahn, **Hankook Lee**, Jinwoo Shin

- International Conference on Machine Learning (ICML), 2021

Online

Jul. 2021

[C5/W] RetCL: A Selection-based Approach for Retrosynthesis via Contrastive Learning

Hankook Lee, Sungsoo Ahn, Seung-Woo Seo, You Young Song, Eunho Yang, Sung Ju Hwang, Jinwoo Shin

- International Joint Conference on Artificial Intelligence (IJCAI), 2021
- NeurIPS Workshop for Machine Learning for Molecules, 2020

Online

Aug. 2021

[C4] GTA: Graph Truncated Attention for Retrosynthesis

Seung-Woo Seo, You Young Song, June Yong Yang, Seohui Bae, **Hankook Lee**, Jinwoo Shin, Sung Ju Hwang, Eunho Yang

- AAAI Conference on Artificial Intelligence (AAAI), 2021

Online

Feb. 2021

[C3] Guiding Deep Molecular Optimization with Genetic Exploration

Sungsoo Ahn, Junsu Kim, **Hankook Lee**, Jinwoo Shin

- Neural Information Processing Systems (NeurIPS), 2020

Online

Dec. 2020

[C2] Self-supervised Label Augmentation via Input Transformations

Hankook Lee, Sung Ju Hwang, Jinwoo Shin

- International Conference on Machine Learning (ICML), 2020
- Received Qualcomm-KAIST Innovation Awards (2019)

Online

Jul. 2020

[C1] Learning What and Where to Transfer

Yunhun Jang*, **Hankook Lee***, Sung Ju Hwang, Jinwoo Shin

- International Conference on Machine Learning (ICML), 2019

Long Beach, CA, USA

Jul. 2019

[P1] Anytime Neural Prediction via Slicing Networks Vertically

Hankook Lee, Jinwoo Shin

- arXiv preprint

Jul. 2018

Work Experience

SAIT (Samsung Advanced Institute of Technology)

Visiting student

- Developed ML-based retrosynthesis algorithms (AAAI 2021, IJCAI 2021 papers).

Suwon, South Korea

Jan. 2020 - Mar. 2020

Programs

Research and Development Engineer

- Built an automatic movie tagging system using movies' news/reviews based on Latent Dirichlet Allocation (LDA).
- Built a Scala-based movie rating prediction system based on non-negative matrix factorization.
- The incorporation name was changed to Watcha Inc. at 2018.

Seoul, South Korea

Aug. 2013 - Dec. 2014

Honors & Awards

2019 **Winner**, Qualcomm-KAIST Innovation Awards (ICML 2020 paper)

Daejeon, South Korea

2019 **Travel award**, International Conference on Machine Learning (ICML) 2019

Long Beach, CA, USA

2013 **Finalist**, International Collegiate Programming Contest (ICPC) World Finals

St. Petersburg, Russia

2012 **1st Place (Grand Prize)**, International Collegiate Programming Contest (ICPC) Asia Daejeon Regional

Daejeon, South Korea

2010 **2nd Place (Gold Prize)**, International Collegiate Programming Contest (ICPC) Asia Daejeon Regional

Daejeon, South Korea

2009 **Gold Prize**, Problem Solving Division, Korea Olympiad in Informatics (KOI)

Seoul, South Korea

Services

2022 **Conference Reviewer**, ICLR 2022, ICML 2022

2021 **Conference Reviewer**, ICLR 2021, ICML 2021, NeurIPS 2021

2020 **Conference Reviewer**, ICLR 2020, NeurIPS 2020

2020 **Journal Reviewer**, ACM TOMPECS 2020

2018 **Journal Reviewer**, ACM TOMPECS 2018

Invited Talks

2021 **Self-supervised Label Augmentation via Input Transformations**, Samsung Electronics DIT Center

Hwaseong, South Korea

2020 **Learning What and Where to Transfer**, Samsung Electronics DIT Center

Hwaseong, South Korea

2019 **Learning What and Where to Transfer**, Summer Annual Conference of IEIE

Jeju, South Korea

2018 **Anytime Neural Prediction via Slicing Networks Vertically**, NAVER Labs

Seongnam, South Korea

Teaching Experience

2020 **TA: "Semantic Segmentation and Object Detection"**, Samsung DS AI Expert Program (Instructor: Jinwoo Shin)

Yongin, South Korea

2019 **TA: "Optimization and Regularization"**, SK Hynix ML Program (Instructor: Jinwoo Shin)

Daejeon, South Korea

2019 **TA: "Transfer and Multi-task Learning"**, Samsung DS AI Expert Program (Instructor: Jinwoo Shin)

Daejeon, South Korea

2018 **TA**, Seongnam-KAIST AI Program (Instructor: Jinwoo Shin)

Seongnam, South Korea

2018 **TA**, KB-KAIST AI Program (Instructor: Jinwoo Shin)

Daejeon, South Korea

2017 **TA**, KB-KAIST AI Program (Instructor: Jinwoo Shin)

Seoul, South Korea