Seanie Lee

Date of Birth: 1992.04.17, Nationality: Korean

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Education

KAIST (Korea Advanced Institute of Science and Technology) — *Daejeon, S.Korea*

Ph.D in Artificial Intelligence — *Mar. 2022 - Feb. 2025 (Expected)*

- Supervised by Sung Ju Hwang and Juho Lee
- Research interest: Safety and Efficiency of Large Language Models.

KAIST (Korea Advanced Institute of Science and Technology) — *Daejeon, S.Korea*

M.S. in Artificial Intelligence — *Mar. 2020 - Feb. 2022*

- Supervised by Sung Ju Hwang and Juho Lee
- Master Thesis: Data augmentation for natural language processing

Yonsei University — *Seoul, S.Korea*

B.A. in Library and Information Science — *Mar. 2011 - Feb. 2018*

Experience

Mila — *Montreal, Canada*

Internship — *January 2024 - June 2024*

- Research internship at Mila, advised by Yoshua Bengio.

Apple — *Cambridge, UK*

Internship — *May 2023 - September 2023*

- Research internship at Siri team, hosted by Anders Johannsen.

Singapore National University — *Singapore*

Internship — *July 2022 - September 2022*

- Remote internship at Deep Learning lab, supervised by Kenji Kawaguchi.

Korea Advanced Institute of Science and Technology — *Daejeon, S.Korea*

Teaching Assistant — *Mar. 2020 - Dec. 2021*

- Deep Reinforcement Learning, AI611
- Mathematics for AI, AI503
- Deep Learning, AI502

42 Maru — *Seoul, S.Korea*

Internship — *Feb. 2019 - Jan. 2020*

- Research on Question Answering, Semi-supervised Learning, Domain Generalization

Awards

2023	**Apple AI/ML PhD Fellowship**, Recipient of Apple Scholars in AI/ML	*Cupertino, US*
2022	**Google Travel Grant**, NeurIPS 2022	*US*
2019	**Silver Medal**, Named Entity Recognition in NAVER NLP Challenge	*Seoul, Korea*

Presentation

Tech. Talk, Nuremberg Institute of Technology Georg Simon Ohm. — *Nürnberg, Germany*

Presentation of large scale set-encoding — *Oct. 2023*

- Scalable Set Encoding with Universal Mini-Batch Consistency and Unbiased Full Set Gradient Approximation
- ICML 2023

Tech. talk, Samgsung SDS. *Seoul, South Korea*

Presentation of large scale set-encoding *22.May. 2023*

- Scalable Set Encoding with Universal Mini-Batch Consistency and Unbiased Full Set Gradient Approximation
- ICML 2023

Tech. talk, NAVER corp. *Online, South Korea*

Presentation of Info-HCVAE *04.Dec. 2020*

- Generating Diverse and Consistent QA pairs from Contexts with Information-Maximizing Hierarchical Conditional VAEs
- ACL 2020 Long paper

Publication

(* indicates equal contribution)

Preprint

HarmAug: Effective Data Augmentation for Knowledge Distillation of Safety Guard Models *arXiv*

Seanie Lee*, Haebin Seong*, Dong Bok Lee, Minki Kang, Xiaoyin Chen, Dominik Wagner, Yoshua Bengio, Juho Lee, Sung Ju Hwang *2024*

- [paper]

Learning Diverse Attacks on Large Language Models for Robust Red-teaming and Safety Tuning *arXiv*

Seanie Lee, Minsu Kim, Lynn Cherif, David Dobre, Juho Lee, Sung Ju Hwang, Kenji Kawaguchi, Gauthier Gidel, Yoshua Bengio, Nikolay Malkin, Moksh Jain *2024*

- [paper]

Conferences

Optimized Speculative Sampling for GPU Hardware Accelerators *EMNLP*

Dominik Wagner, **Seanie Lee**, Ilja Baumann, Philipp Seeberger, Korbinian Riedhammer, Tobias Bocklet *2024*

- [paper][code]

Drug Discovery with Dynamic Goal-aware Fragment *ICML*

Seul Lee, **Seanie Lee**, Kenji Kawaguchi, Sung Ju Hwang *2024*

- [paper][code]

Effective and Efficient Conversation Retrieval for Dialogue State Tracking with Implicit Text Summaries *NAACL*

Seanie Lee, Jianpeng Cheng, Joris Driesen, Alexandru Coca, Anders Johannsen *2024*

- [paper]

Self-Supervised Dataset Distillation for Transfer Learning *ICLR*

Dong Bok Lee*, **Seanie Lee***, Joonho Ko, Kenji Kawaguchi, Juho Lee, Sung Ju Hwang *2024*

- [paper][code]

DiffusionNAG: Task-guided Neural Architecture Generation with Diffusion Models *ICLR*

Sohyun Ahn*, Hayeon Lee*, Jaehyeong Jo, **Seanie Lee**, Sung Ju Hwang *2024*

- [paper][code]

Scalable Set Encoding with Universal Mini-Batch Consistency and Unbiased Full Set Gradient Approximation *ICML*

Jeffrey Willette*, **Seanie Lee***, Bruno Andreis, Kenji Kawaguchi, Juho Lee, Sung Ju Hwang *2023*

- [paper][code]

Margin-based Neural Network Watermarking *ICML*

Byungjoo Kim, Suyoung Lee, **Seanie Lee**, Sooel Son, Sung Ju Hwang *2023*

- [paper]

Self-Supervised Set Representation Learning for Unsupervised Meta-Learning *ICLR*

Dong Bok Lee*, **Seanie Lee***, Kenji Kawaguchi, Yunji Kim, Jihwan Bang, Jung-Woo Ha, Sung Ju Hwang *2023*

- [paper]

Self-Distillation for Further Pre-training of Transformers *ICLR*

Seanie Lee, Minki Kang, Juho Lee, Sung Ju Hwang, Kenji Kawaguchi *2023*

- [paper][code]

Set-based Meta-Interpolation for Few-Task Meta-Learning *NeurIPS*

Seanie Lee*, Bruno Andreis*, Kenji Kawaguchi, Sung Ju Hwang *2022*

- [paper] [code]

On Divergence Measures for Bayesian Pseudocoresets *NeurIPS*

Balhae Kim, Jungwon Choi, **Seanie Lee**, Yoonho Lee, Jung-Woo Ha, Juho Lee *2022*

- [paper]

Set Based Stochastic Subsampling *ICML*

Bruno Andreis, **Seanie Lee**, A. Tuan Nguyen, Juho Lee, Eunho Yang, Sung Ju Hwang *2022*

- [paper]

Sequential Reptile: Inter-Task Gradient Alignment for Multilingual Learning *ICLR*

Seanie Lee*, Hae Beom Lee*, Juho Lee, Sung Ju Hwang *2022*

- [paper]

Learning to Perturb Word Embeddings for Out-of-distribution QA *ACL*

Seanie Lee*, Minki Kang*, Juho Lee, Sung Ju Hwang *2021*

- [paper][code]

Contrastive Learning with Adversarial Perturbations for Conditional Text Generation *ICLR*

Seanie Lee*, Dong Bok Lee*, Sung Ju Hwang *2021*

- [paper][code]

Meta-GMVAE: Mixture of Gaussian VAE for Unsupervised Meta-Learning *ICLR*

Dong Bok Lee, Dongchan Min, **Seanie Lee**, Sung Ju Hwang *2021*

- [paper][code]

Generating Diverse and Consistent QA pairs from Contexts with Information-Maximizing Hierarchical Conditional VAEs *ACL*

Dong Bok Lee*, **Seanie Lee***, WooTae Jeong, Donghwan Kim, Sung Ju Hwang *2020*

- [paper] [code][video]

g2pM: A Neural Grapheme-to-Phoneme Conversion Package for Mandarin Chinese Based on a New Open Benchmark Dataset *INTERSPEECH*

Kyubyong Park*, **Seanie Lee*** *2020*

- [paper][code]

References

Sung Ju Hwang *Advisor*

Associate Professor in KAIST *2020-2025*

e-mail: sjhwang82@kaist.ac.kr, **address**: 126 Yangjae-dong, Seocho District, Seoul, South Korea.

Juho Lee *Advisor*

Associate Professor in KAIST *2020-2025*

e-mail: juholee@kaist.ac.kr, **address**: 126 Yangjae-dong, Seocho District, Seoul, South Korea.

Yoshua Bengio *Collaborator*

Full Professor at Université de Montréal and Scientific Director of Mila – Quebec AI Institute. *2024-present*

e-mail: yoshua.bengio@mila.quebec, **address**: 6666, rue Saint-Urbain, bureau 200 Montréal, Canada.