# Giung Nam

Ph.D. Student (Anticipated Graduation: Feb 2026)  
Korea Advanced Institute of Science and Technology  
Daejeon, Republic of Korea

Email: giung@kaist.ac.kr  
Webpage: cs-giung.github.io  
Last update: Oct 8, 2024

## Education

**Ph.D.**, Kim Jaechul Graduate School of AI (GPA: 4.24/4.30; Advisor: Juho Lee),
KAIST, Daejeon, Republic of Korea, Sep 2022 to Feb 2026 (expected).

- Thesis: *"Towards a scalable Bayesian deep learning"* (in progress).

- Selected courseworks: *Bayesian Nonparametric Methods for Machine Learning* (Instructor: Juho Lee) and *Deep Learning Theory* (Instructor: Chulhee Yun).

**M.S.**, Kim Jaechul Graduate School of AI (GPA: 4.20/4.30; Advisor: Juho Lee),
KAIST, Daejeon, Republic of Korea, Sep 2020 to Aug 2022.

- Thesis: *"Diversity matters when learning from ensembles"* (Juho Lee served as a committee chair, and Eunho Yang and Sung Ju Hwang served as reviewers).

- Selected courseworks: *Bayesian Machine Learning* (Instructor: Juho Lee), *Deep Learning for Natural Language Processing* (Instructor: Minjoon Seo), *Deep Learning for Computer Vision* (Instructor: Jaegul Choo), and *Machine Learning Theory* (Instructor: Se Young Yun).

**B.S.**, Department of Computer Science and Engineering (GPA: 4.32/4.50),
Korea University, Seoul, Republic of Korea, Mar 2017 to Aug 2020.

- Selected courseworks: *Artificial Intelligence* and *Deep Learning* (Instructor: Hyunwoo J. Kim), *Machine Learning* and *Data Science* (Instructor: Jaewoo Kang), *Information Retrieval* (Instructor: SangKeun Lee), and *Introduction to Bayesian Statistics* (Instructor: Hwan Chung).

## Research Interests and Skills

**Ph.D. Research**, *"Towards a scalable Bayesian deep learning"*, My primary research focus is on integrating various forms of *prior knowledge* to develop neural network models. It includes the scalable application of Bayesian principles to modern large-scale deep neural networks. Keywords: transfer learning, distillation, and ensembling.

**Software Development**, Since October 2023, I have been developing code bases built on Google's JAX, designed to be compatible with other deep learning libraries; *1) transformerx: JAX implementation of modern transformers*; *2) bdlx: JAX implementation of Bayesian deep learning methods*. This software development is part of my broader research focus on scalable Bayesian deep learning.

**Programming Skills,** My primary programming language for research is Python, and I prefer JAX and PyTorch libraries for machine learning. Since December 2021, I have been actively leveraging the Cloud TPU VM environment for my research through the TPU Research Cloud program. Additionally, I maintain the GPU servers in my laboratory at KAIST.

## Positions

**Technical Research Personnel**, Kim Jaechul Graduate School of AI, *Korea Advanced Institute of Science and Technology (KAIST)*, Daejeon, Republic of Korea. Performing military service in accordance with the Constitution of the Republic of Korea and the Military Service Act from Mar 2024 to Feb 2026.

**Undergraduate Research Intern**, Visual Intelligence Laboratory, *Electronics and Telecommunications Research Institute (ETRI)*, Daejeon, Republic of Korea. Developed AI-based software for face analysis, object detection, and segmentation during Summer and Winter 2019, and Summer 2020.

**Undergraduate Research Intern**, Research and Engineering Team, *VisualCamp*, Seongnam, Republic of Korea. Developed AI-based software for eye tracking and gaze analysis during Spring 2019.

## Honors and Awards

**Kim Younghan Global Leader Fellowship**, Awarded from *Korea Advanced Institute of Science and Technology (KAIST)* on July 24, 2023, for outstanding academic excellence, research capabilities, and leadership qualities.

**Director General's Award**, Awarded from *National Institute of Meteorological Sciences (NIMS)* on December 31, 2021, for dedication to the development of an artificial intelligence-based emulator for physics processes in numerical models.

## Experiences

**Conference Reviewer**, Reviewed papers for ICML 2022-2024, NeurIPS 2022-2024, ICLR 2024, IJCAI 2024, and AAAI 2025 (Recieved Top Reviewer recognition at NeurIPS 2022).

**Teaching Assistant**, Assisted courses at Korea Advanced Institute of Science and Technology (KAIST): *Deep Learning* (Instructor: Jaesik Choi; Fall 2020), *Machine Learning for AI* (Instructor: Juho Lee; Spring 2021), and *Bayesian Machine Learning* (Instructor: Juho Lee; Fall 2021).

**Presentations**, Presented papers at poster sessions for NeurIPS 2021 (online; Dec 2021), KAIST AI Workshop 21/22 (Daejeon, Republic of Korea; Jan 2022), ICML 2022 (online; Jul 2022), ICLR 2023 (Kigali, Rwanda; May 2023), ICML 2023 (Honolulu, United States; Jul 2023), Samsung Electronics DS Division (Hwasung, Republic of Korea; Aug 2023), AI SEOUL 2024 (Seoul, Republic of Korea; Feb 2024), and ICLR 2024 (Vienna, Austria; May 2024).

## Publications (*: equal contributions)

10. <u>Giung Nam</u>, and Juho Lee. *"Ex uno pluria: Insights on ensembling in low precision number systems"*. **The Thirty-Eighth Conference on Neural Information Processing Systems (NeurIPS 2024)**, Dec 2024 (To appear).

9. Moonseok Choi*, Hyungi Lee*, <u>Giung Nam</u>*, and Juho Lee. *"Sparse weight averaging with multiple particles for iterative magnitude pruning"*. **The Twelfth International Conference on Learning Representations (ICLR 2024)**, May 2024.

8. Hyungi Lee*, <u>Giung Nam</u>*, Edwin Fong, and Juho Lee. *"Enhancing transfer learning with flexible nonparametric posterior sampling"*. **The Twelfth International Conference on Learning Representations (ICLR 2024)**, May 2024.

7. <u>Giung Nam</u>, Byengho Heo, and Juho Lee. *"Lipsum-FT: Robust fine-tuning of zero-shot models using random text guidance"*. **The Twelfth International Conference on Learning Representations (ICLR 2024)**, May 2024.

6. Eunggu Yun\*, Hyungi Lee\*, <u>Giung Nam</u>\*, and Juho Lee. *"Traversing between modes in function space for fast ensembling"*. **The Fortieth International Conference on Machine Learning (ICML 2023)**, July 2023.

5. Hyungi Lee, Eunggu Yun, <u>Giung Nam</u>, Edwin Fong, and Juho Lee. *"Martingale posterior neural processes"*. **The Eleventh International Conference on Learning Representations (ICLR 2023), Spotlight**, May 2023.

4. <u>Giung Nam</u>\*, Sunguk Jang\*, and Juho Lee. *"Decoupled training for long-tailed classification with stochastic representations"*. **The Eleventh International Conference on Learning Representations (ICLR 2023)**, May 2023.

3. Hwan-Jin Song, Soonyoung Roh, Juho Lee, <u>Giung Nam</u>, Eunggu Yun, Jongmin Yoon, and Park Sa Kim. *"Benefits of stochastic weight averaging in developing neural network radiation scheme for numerical weather prediction"*. **Journal of Advances in Modeling Earth Systems (JAMES)**, October 2022.

2. <u>Giung Nam</u>, Hyungi Lee, Byeongho Heo, and Juho Lee. *"Improving ensemble distillation with weight averaging and diversifying perturbation"*. **The Thirty-ninth International Conference on Machine Learning (ICML 2022)**, July 2022.

1. <u>Giung Nam</u>\*, Jongmin Yoon\*, Yoonho Lee, and Juho Lee. *"Diversity matters when learning from ensembles"*. **The Thirty-Fifth Conference on Neural Information Processing Systems (NeurIPS 2021)**, December 2021.