

Minkyu Jeon

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📄 <https://minkyujeon.github.io>

Research Interest

Computer Vision, 3D Reconstruction, Generative Models, Representation Learning, Structural Biology, Cryo-EM.

Education

- 2023–present **Ph.D. Student**, Computer Science, *Princeton University*.
2020–2023 : **M.S.**, Computer Science and Engineering, *Korea University*.
2014–2020 : **B.S.**, Applied Statistics, Computer Engineering (double major), *Konkuk University*.

Publications

Minkyu Jeon, Rishwanth Raghu, Miro Astore, Geoffrey Woollard, Ryan Feathers, Alkin Kaz, Sonya M Hanson, Pilar Cossio, Ellen D Zhong, "CryoBench: Diverse and challenging datasets for the heterogeneity problem in cryo-EM", (**NeurIPS**), **Spotlight**, 2024.

Sanghyeok Lee*, **Minkyu Jeon***, Injae Kim, Yunyang Xiong, Hyunwoo J Kim, "SageMix: Saliency-Guided Mixup for Point Clouds", (**NeurIPS**), 2022.

*: co-first

Minkyu Jeon, Hyeonjin Park, Hyunwoo J Kim, Michael Morley, Hyunghoon Cho, "*k*-SALSA: *k*-anonymous synthetic averaging of retinal images via local style alignment", (**ECCV**), 2022.

Journal Youngjin Oh*, **Minkyu Jeon***, Dohwan Ko, Hyunwoo J Kim, "Randomly Shuffled Convolution for Self-Supervised Representation Learning", (**Information Science Journal**), 2023.

*: co-first

Seungdong Yoa, **Minkyu Jeon**, Youngjin Oh, Hyunwoo J Kim, "Learning to Balance Local Losses via Meta-Learning", (**IEEE ACCESS**), 2021.

Research Experience

July,2024 – **AI4ALL**, *Instructor*, Princeton, USA.

August 2024

- Instructed high school students about AI and serve as a mentor to help them with their project on medical imaging analysis using deep learning.

Jan,2023 – **Broad Institute of MIT and Harvard**, *Associate Computational Biologist*, Massachusetts, USA.

August,2023 Advisor: Dr. Hyunghoon Cho ([Website](#))

- Led a project to synthesize a dataset of retinal images using a diffusion-based generative model for privacy protection.

Sep,2021 – **Broad Institute of MIT and Harvard**, *Visiting Graduate Student*, Massachusetts, USA.

Apr,2022 Advisor: Dr. Hyunghoon Cho ([Website](#))

- Led a project to Synthesize a dataset of retinal images using a GAN/GAN-Inversion-based generative model for privacy protection (Accepted to ECCV 2022).

Jan,2020 – **Korea University**, *Research Intern*, Seoul, Korea.

Aug,2020 Advisor: Dr. Hyunwoo J Kim ([Website](#))

- Conducted research on meta-learning for better optimization for each layer and co-authored a paper submitted to IEEE ACCESS as the second author.

- Designed algorithm, implemented research ideas, conducted experiments, and wrote related work, methods, and experiments sections of the paper.

Mar,2019 – **Makinarocks**, *ML Research Engineer Intern*, Seoul, Korea.

Aug,2019 ([Website](#))

- Conducted research in the field of anomaly detection to detect abnormal data well by controlling the latent space of Variational Autoencoder.

July, 2018 – **Korea Institute of Science and Technology (KIST)**, *ML Research Intern*, Seoul, Korea.

Dec, 2018 Advisor: Dr. Yong Moo Kwon (Regular Retirement, [Website](#))

- Participated in a project on programming an active chatbot that can initiate a conversation and recognize situations.
- Executed Natural Language Processing using rule-based algorithms and deep learning

Awards & Services

2023 – **Reviewer:** NeurIPS Workshop (23', 24'), ICLR (25), Information Science Journal (24')

08/2024 **Invited talk**, at Flatiron Institute – Simons Foundation

02/2024 **Invited talk**, at CMU MetaMobility Lab

09/2019 **Dean's List**, Konkuk University Applied Statistics Department.

09/2019 **Konkuk University Scholarship**, 40% of tuition.

07/2016 **Certificate of Commendation**, Military Service – Recognized as an exemplary soldier for demonstrating exceptional communication skills during early warning situations.

Skills

Python, PyTorch, Tensorflow, Keras, R, C, Git, Linux, Windows, Mac OS

Teaching Assistantship

Fall, 2024 CS302: Mathematics for Numerical Computing and Machine Learning, Princeton University.

Spring, 2021 COSE361: Artificial Intelligence, Korea University.

Fall, 2020 AAA712: AI Security, Korea University.

Fall, 2020 Tutorial Teaching Fellow: Deep Learning, Korea University.

Extracurricular Activities

May, 2021 - I-Corps program.

Aug, 2021 ○ Granted \$35,000 by science technology information governmental department for the identification of technology based start ups.

Mar, 2015 - Military Service.

Dec, 2016 ○ Served as a Republic of Korea Marine Corps – Island of Yeonpyeong, South Korea.