

# Sehyun Kwon

[email] [kagok@snu.ac.kr](mailto:kagok@snu.ac.kr) [website] [Link](#) [google scholar]

## Education

<b>Seoul National University</b> <i>Ph.D in the Graduate School of Artificial Intelligence (Advisor: Ernest K. Ryu [website])</i>	Sep 2022 – Expected Feb 2025
<b>Seoul National University</b> <i>M.S. in the Department of Mathematical Sciences (Advisor: Ernest K. Ryu [website])</i>	Feb 2020 – Sep 2022
<b>Dankook University</b> <i>B.S. in the Department of Mathematics Education</i> <ul style="list-style-type: none"><li>Teacher's Certificate for Secondary Regular Teacher of Mathematics.</li><li>Military service in South Korea, 2016.05 - 2018.02.</li></ul>	Feb 2014 – Feb 2020

## Publication

- [C3, W2] Image Clustering Conditioned on Text Criteria**
- Sehyun Kwon**, Jaeseung Park, Minkyu Kim, Jaewoong Cho, Ernest K. Ryu, Kangwook Lee
  - International Conference on Learning Representations (ICLR), 2024.
  - Neural Information Processing Systems Workshop (NeurIPS Workshop), 2023.
  - [Link](#), [Summary 1](#), [Summary 2](#), [Code](#).
- [C2] Rotation and Translation Invariant Representation Learning with Implicit Neural Representations**
- Sehyun Kwon**, Jooyoung Choi, Ernest K. Ryu
  - International Conference on Machine Learning (ICML), 2023.
  - [Link](#), [Code](#).
- [W1] Diffusion Probabilistic Models Generalize when They Fail to Memorize**
- Taeho Yoon, Jooyoung Choi, **Sehyun Kwon**, Ernest K. Ryu
  - International Conference on Machine Learning Workshop (ICML Workshop), 2023.
  - [Link](#).
- [C1] WGAN with an Infinitely Wide Generator Has No Spurious Stationary Points**
- Albert No, Taeho Yoon, **Sehyun Kwon**, Ernest K. Ryu
  - International Conference on Machine Learning (ICML), 2021.
  - [Link](#), [Code](#).

## Research interest

**Vision Language Models** (ex. LLaVA, CLIP) [C3, W2], **Large Language Models** (ex. GPT, Llama, Mistral) [C3, W2], **2D Vision tasks** (ex. Clustering, Retrieval) [C2, C3], **Generative Models** (Diffusion, GAN, VAE) [C1, W1].

## Experience

<b>KRAFTON [website]</b> - AI Research Internship <ul style="list-style-type: none"><li>Research topic: Vision tasks (clustering, retrieval) with multi-modal models (LLM, VLM).</li><li>Closely work with Kangwook Lee [website] and Dimitris Papailiopoulos [website].</li></ul>	Jun 2023 – Jan 2024 Seoul, Korea
<b>Military Service</b> - Army sergeant	May 2016 – Feb 2018 Korea

## Award

- 2023 Samsung DS excellent paper award
- 2023 3rd Prize for Best Poster Award at the SNU AI Spring Retreat. ([Link](#)).
- 2022 Outstanding TA Award for the Mathematical Foundations of Deep Neural Networks course. ([Link](#))

## Teaching Experience

---

### Seoul National University, Teaching Assistant

Mar 2020 – Present

- Generative AI and Foundation Models (Spring 2024)
- Mathematical Foundations of Deep Neural Networks (Spring 2024)
- Mathematical Foundations of Deep Neural Networks (Fall 2022)
- Mathematical Foundations of Deep Neural Networks (Fall 2021) - *Outstanding TA Award Winner*
- Calculus for Humanities and Social Sciences 2 (Fall 2021)
- Mathematical Algorithms 1 (Graduate) (Spring 2021)
- Engineering Mathematics 2 (Spring 2021)
- Mathematics for Business (Fall 2020)
- Information Society and Mathematics (Fall 2020)
- Calculus 1 (Spring 2020)

### Young Hoon High School

May 2019

- Teaching Practicum

## Talk

---

- 2024 Poster presentation in exchange meeting of SNU & Samsung DS
- 2023 Poster presentation in exchange meeting of SNU & Samsung DS
- 2023 Oral presentation in SNU AI Spring Retreat