

# Kunwoo Na

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Seoul, Korea  
<https://kunwoona.github.io>

Phone: (+82) 010-9275-0401  
[jamongna@snu.ac.kr](mailto:jamongna@snu.ac.kr)

## PARTICULARS

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### EDUCATION

**Seoul National University**, Seoul, Korea *2021.03 – Present*  
B.S. Program in Chemistry Education and Mathematical Sciences  
Overall GPA: 4.04/4.30, Math (major) GPA: 4.14/4.30

### ACADEMIC INTERESTS

- Stochastic differential equations (with irregular drift coefficients or infinite-dimensional state spaces), Partial Differential Equations
- Theoretical analyses of deep learning and reinforcement learning algorithms
- Diffusion probabilistic models (in particular, diffusion models with infinite dimensional state spaces)

### ACADEMIC HONORS

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- SNU General Alumni Association Scholarship *2022.03 – Present*

### RESEARCH EXPERIENCE

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- **Undergraduate research intern, Optimization and Statistical Inference Lab, KAIST** *2023.06 – Present*  
**Advisor:** Professor Seyoung Yun
  - Established sample complexity results of fitted value iteration algorithm and temporal difference learning in linear MDP setup in an overparametrized regime (with Junghyun Lee, Hanseul Cho, Laura Schmidt, and Seyoung Yun).
  - Currently working on diffusion probabilistic models on infinite-dimensional Hilbert spaces and their practical applications (with Junghyun Lee, Hojung Jung, Eunbi Yoon, Sungbin Lim, and Seyoung Yun).

## WORK EXPERIENCE

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- **AI Research engineer intern, Steinfeld Company** *2022.06 – 2023.01*
  - Improved algorithms for (conditional) medical image generation via generative adversarial networks and diffusion probabilistic models.

## TEACHING EXPERIENCE

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- **Teaching Assistant.** M1407.001200: Mathematical Foundations of Deep Neural Network, taught by professor Ernest K. Ryu. Fall 2022, Seoul National University.

## RELEVANT COURSEWORKS

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- **Graduate Courses:** Real Analysis (A+), Differentiable Manifolds (A0), Mathematical Algorithms 2 (A+), Algebraic Topology 1 (A0)
- **Undergraduate Courses:** Mathematical Foundations of Deep Neural Networks (A+), Topics in Mathematics 2 – Analysis and Probability on Local Dirichlet Spaces (A+)

## SKILLS

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- **Programming Language:** Python
- **Frameworks and tools:** Pytorch, L<sup>A</sup>T<sub>E</sub>X, Git
- **Languages:** Korean (native), English (fluent)

## EXTRACURRICULAR ACTIVITIE

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- **Club Gauss** (student club in Seoul National University) *2022.09 – 2023.03*
  - Hosted a series of seminars on the latest trends in machine learning research and had a regular group seminar.