Heewoong Noh

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RESEARCH INTEREST

Applied Machine Learning

My primary focus is to harness the potential of AI to address challenges in the domain of science.

- **Keywords**: AI4Science(Chemistry and Biology), LLMs for Chemistry, Multi-Modality

EDUCATION

KAIST, Daejeon, South Korea

- M.S. in Industrial & Systems Engineering — Mar 2023 – Present
  - Research Interest: Machine Learning, AI4Science, LLMs for Chemistry
  - Advisor: Prof. Chanyoung Park

Korea University, Seoul, South Korea

- B.S. in Industrial and Management Engineering *GPA: 3.94/4.5* — Mar 2017 – Feb 2023
- Leave of absence for military service (Aug.2018 - Mar.2020)

PUBLICATIONS

(†: Equal contribution)

CONFERENCES

[C2] Retrieval-Retro: Retrieval-based Inorganic Retrosynthesis with Expert Knowledge
Heewoong Noh, Namkyeong Lee, GyoungS. Na*, Chanyoung Park*
Conference on Neural Information Processing Systems (**NeurIPS 2024**)

[C1] Density of States Prediction of Crystalline Materials via Prompt-guided Multi-Modal Transformer
Namkyeong Lee†, **Heewoong Noh†**, Sungwon Kim, Dongmin Hyun, GyoungS. Na, Chanyoung Park
Conference on Neural Information Processing Systems (**NeurIPS 2023**)

WORKSHOPS

[W2] Stoichiometry Representation Learning with Polymorphic Crystal Structures
Namkyeong Lee, **Heewoong Noh**, GyoungS. Na, Tianfan Fu, Jimeng Sun, Chanyoung Park
NeurIPS Workshop on AI for Scientific Discovery: From Theory to Practice (**AI4Science 2023**)

[W1] Predicting Density of States via Multi-modal Transformer
Namkyeong Lee†, **HeewoongNoh†**, Sungwon Kim, Dongmin Hyun, GyoungS. Na, Chanyoung Park
ICLR Workshop on Machine Learning for Materials (**ML4Materials 2023**)

PROJECTS

Korea Research Institute of Chemical Technology (KRICT)

- Geometric Deep Learning for Molecular Interactions — 2024
- Retrosynthesis Analysis for Inorganic Materials — 2023

AWARDS & SCHOLARSHIPS

HAICon2021, Korea Institute of Information Security & Cryptology (KIISC) — Nov 2021

- Awarded 6th place among 177 participating teams (AI Competition)
- Building an AI model for detecting security threats in industrial control systems (Time series anomaly detection)

Industrial Engineering Project Competition, Korean Institute of Industrial Engineers(KIIE) — 2021

- Participation award in industrial engineering project competition
- Building UAM dynamic corridor algorithm

Veritas Scholarship, Korea University — 2021

- Research on the detection of anomalies in the manufacturing process
  - Advisor: Prof. Sungwon Han

Certificate of Recognition, National Police Agency — 2019

- Awarded when serving military service as an auxiliary police

PROFESSIONAL SERVICES

Conference Reviews

- Conference on Neural Information Processing Systems(NeurIPS) — 2024

Workshop Reviews

- AI for Accelerated Materials Design(AI4Mat)@NeurIPS — 2024

TALKS AND SEMINARS

Density of States Prediction of Crystalline Materials via Prompt-guided Multi-Modal Transformer

- Top Conference Session of Korea Software Congress(KSC) 2023

REFERENCES

- **Prof. Chanyoung Park**, Assistant Professor, KAIST
  Email: cy.park@kaist.ac.kr

[*CV compiled on 2024-11-07*]