Hyun Mog Kim

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Webpage: https://hyunmogkim.github.io
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Academic History

Korea Advanced Institute of Science and Technology (KAIST) Seoul, South Korea
Industry-Sponsored Visiting Scholar, Kim Jaechul Graduate School of AI Feb 2026 - Present

Korea Advanced Institute of Science and Technology (KAIST) Seoul, South Korea
MEng, Kim Jaechul Graduate School of AI Sep 2020 - Mar 2023
Thesis: *Efficient Ensemble for Graph Neural Networks* - Supervisor: Juho Lee
Relevant Courses: Graph Neural Network, Computer Vision, Natural Language Processing

Imperial College London London, United Kingdom
BSc, Department of Mathematics Oct 2016 - Oct 2019
Relevant Courses: Topology, Number Theory, Time Series, Probability Theory, Statistics

Research Interests

- Geometric deep learning
- Generative models for protein structure
- Equivariant neural architectures

Publications

- *Inverse folding model for antibody sequence design*
  Hyunmog Kim, Injae Chung, Junsu Ko, Juyong Lee
  [Submitted] International Conference on Machine Learning (ICML), 2026.

Patents

- *Method: System for Deep Learning-Based Antibody Design*
  Hyunmog Kim, Junsu Ko, Juyong Lee
  [Submitted] Korean Intellectual Property Office (KIPO), 2026.
- *Method: System for Deep Learning-Based Antibody-Drug Conjugate Design*
  Hyunmog Kim, Injae Chung, Junsu Ko, Juyong Lee
  [Submitted] Korean Intellectual Property Office (KIPO), 2025.

Projects

- *Unsupervised Monocular Depth Estimation using Laplacian Pyramid* - Jaegul Choo (2021)
- *The Differential Geometry on Minimal Surface* - Marie Amelie Lawn (2018)
- *The Finite Geometry on Fano Plane* - Ambrus Pal (2017)

Ongoing Research

- *Structure based de novo antibody design*

- *Structure and sequence based all atom stability prediction model*

Industrial Activities

Mandatory Military Service - Arontier Seoul, South Korea
Machine Learning Research Scientist Nov 2024 - Present

- Developed an end-to-end de novo antibody design pipeline.
- Led a team of four in developing geometric deep learning models for protein structure modeling.
- Building a curated Antibody-Drug Conjugate database using LLMs to address the scarcity of high quality public ADC datasets for AI research.

Mandatory Military Service - DeltaX Seoul, South Korea
Machine Learning Research Engineer Mar 2023 - Nov 2024

- Developed deep learning-based algorithms for In-Cabin Monitoring Systems (ICMS), showcased at Hyundai Open Innovation Lounge 2024 and recognised for potential adoption in 2027 production.
- Led a 10-member cross-functional team to build end-to-end Smart Factory Systems (SFS) for KIA, automating data collection, processing, and pseudo-labeling to accelerate model training, and successfully deploying in production to generate the first revenue.

Leadership & Activities

Imperial College London Mathematics Colloquium London, United Kingdom
Contributor Oct 2016 - Jun 2019

- Delivered research findings on Topology under the guidance of Tom Coates.
- Organised and led regular discussions on Topology and Number Theory as the main facilitator.

Imperial College London Korean Society London, United Kingdom
Treasurer Mar 2018 - Mar 2019

- Built a global network within Imperial College London to foster international interactions.
- Established partnerships with Korean student societies across U.S. universities to enhance cross-campus engagement.
- Increased total assets by 70% through accurate cost and revenue forecasting for diverse organisational activities.

Skills & Interests

Technical: Python, MATLAB, and R.
Language: Fluent in English and Korean.