

# Hyun Mog Kim

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## Academic History

### Korea Advanced Institute of Science and Technology (KAIST)

Industry-Sponsored Visiting Scholar, Kim Jaechul Graduate School of AI

Seoul, South Korea

Feb 2026 - Present

### Korea Advanced Institute of Science and Technology (KAIST)

MEng, Kim Jaechul Graduate School of AI

Seoul, South Korea

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

BSc, Department of Mathematics

London, United Kingdom

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.