

Hoeun Lee

February 28, 2001

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[Google Scholar](#) · [LinkedIn](#) · [GitHub](#)

EDUCATION

• Konkuk University

March 2020 – Present

Bachelor's Degree expected in Computer Science and Engineering

Seoul, Korea

- Overall GPA: 4.47 / 4.50
- Major GPA: 4.50 / 4.50
- Top-Ranked Student
- Republic of Korea Air Force; Sergeant Honorable Discharged (Jan 2022 - Oct 2023)
- Expected to Graduate in February 2026

• Chungnam Samsung Academy High School

March 2017 – February 2020

Honor Diploma in Information Technology and Engineering

Asan, Chungchungnam-do

RESEARCH INTERESTS

- **Computer Vision** – Generative AI · Multi-Modal AI · Large-Scale Data and Deep Learning Model · On-Device ML/AI
- **Deep Reinforcement Learning** – Applying DRL to other Domains (for Optimization and Lightweight) · Robotics

EXPERIENCES

• Distributed Multimedia System Laboratory Student Researcher

March 2021 – Present

Deep Reinforcement Learning Research Team

Konkuk University, Seoul

- Multi-Agent Deep Reinforcement Learning on Robotics Domain
- Research on Model Fusion and Multi-Agent-Attention-based Deep Learning
- Research on Optimization using Deep Learning and Hyper-Hueristic Algorithm
- Research Computer Vision (Large Scale CNN-based and ViTs)

• Aerospace Design and Certification Institute Project

March 2021 – Present

*Priority Research Centers Program through the National Research Foundation of Korea (NRF)
Artificial Intelligence Digital Twin Research for Smart Urban Air Traffic (UAM)*

Ministry of Science and ICT

- Multi-Agent Deep Reinforcement Learning
- Deep RL-based Navigation, Air Traffic Management System
- Software-In-The-Loop Ditial-Twin

PAPERS

1. S Jeon, [Hoeun Lee](#), VK Kaliappan, T Anh Nguyen, H Jo, H Cho, Dugki Min (October 2022), “**Multiagent Reinforcement Learning Based on Fusion-Multiactor-Attention-Critic for Multiple-Unmanned-Aerial-Vehicle Navigation Control**”, MDPI Energies 15 (19), 7426
2. H Jo, [Hoeun Lee](#), S Jeon, VK Kaliappan, T Anh Nguyen, D Min, JW Lee (September 2021), “**Multi-Agent Reinforcement Learning-based UAS Control for Logistics Environments**”, Asia-Pacific International Symposium on Aerospace Technology, 963-972
3. S Yang, M Lee, [Hoeun Lee](#), Yongmin Kim (September 2018), “**Aircraft Identification and Route Tracking using a Model Satellite**”, 2018 KSAS Fall Conference, 431-434

AWARDS AND HONORS

• 2023 Seoul National University Dental Hospital Healthcare AI Competition

December 2023

Grand Prize (1st)

SNU Dental Hospital

- Development of an AI Model for Classifying Cavities using Synthesized Oral Image Data

• 2023 Military AI Competition (MAICON)

December 2023

Fourth Place (4th)

Ministry of National Defense,
Ministry of Science and ICT

- Deepfake Video Detection for Intelligent Cyber Threat Response
- Video and Image Classification Task

- **2023 Air Force Creativity and Innovation Idea Contest (Air Force Hackathon)**

Fourth Place (4th)

 - Target Identification using Range-Doppler Map (Image Classification Task)
 - Instance Segmentation of Impact Zones in Air-to-Ground Missile Shooting Scoring Image

November 2023

Republic of Korea Air Force
- **2023 LH City Digital Twin Ideation Competition**

Participation Prize (4th)

 - Solar Power Profit and Loss Calculation Service for Individual Households using Sunlight Analysis and Machine Learning-based Solar Power Expectation Technology

April 2023

Korea Land & Housing Corporation
- **2021 Kookmin Bank Software Development Contest (KBSC)**

Grand Prize (1th)

 - ESG Educational Metaverse to Help Develop Environmental Awareness
 - Team Leader and Developer (Unity, Django)

December 2021

Kookmin Bank
- **2019 Kookmin Bank Software Development Contest (KBSC)**

Excellence Prize (2th) in High School Student Part

 - Software for relieving tension using Virtual Reality and Machine Learning
 - Developer (Unity, Wearable Device to Measure Heart Rate and Voice Volume)

December 2019

Kookmin Bank
- **2018 Can-Satellite Competition Korea (CANSAT)**

Excellence Prize (2th) in High School Student Part

 - Aircraft Identification and Route Tracking by Doppler Effect with a Model Satellite
 - Develop Model Satellites, Ground Station Programmes, Object-Tracking by Image Processing

September 2018

Ministry of Science and ICT, SaTReC, KAIST, KARI
- **2018 High School Club Software Competition**

Grand Prize (1th) and Popularity Award

 - Software for Improving Presentation Power using Virtual Reality and Machine Learning
 - Developer (Unity) and 3D Modeling, UI/UX Design

October 2018

Ministry of Science and ICT, IITP, KAIST
- **Dean's List**

2020 2nd semester, 2021 1st and 2nd semester

2020 – 2021

Konkuk University

SCHOLARSHIP

- **National Science & Technology Excellence Scholarship**

Two-Year

2024 - 2025

Korea Student Aid Foundation
- **Merit-based Academic Excellence Scholarship**

2020 2nd semester, 2021 1st and 2nd semester

2020 - 2021

Konkuk University

TECHNICAL SKILLS

- **Programming Language:** C/C++, Python, MATLAB
- **Language:** English and Korean
- **AI/ML Tools:** PyTorch, OpenCV, OpenMMLab, ML-Agents(Unity), Isaac Sim(NVIDIA), Gymnasium(OpenAI), GPT API

KEY COURSES

- **Artificial Intelligence:** CS285(Deep Reinforcement Learning), Linear Algebra, Signal Processing, Artificial Intelligence, Data Science, Computational Theory, Digital Image Processing, Discrete Mathematics, Probability and Statistics
- **Computer Science:** Operating System, System Programming, Computer Network, Algorithm, Data Structure, Object-Oriented Programming, Database, Software Engineering, C/C++/JAVA Programming, Mathematical Analysis