

Hoeun Lee

February 28, 2001

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

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 of Information Technology and Engineering

Asan, Chungchungnam-do

- Grand Prize (1st) awarded Paper in School Academic Research Conference for Engineering (2018)
- Student President of the IT Diploma Students (2018)

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-Heuristic 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)*

Konkuk University, Seoul
Ministry of Science and ICT

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

PAPERS

1. S Jeon, [Hoeun Lee](#), VK Kaliappan, TA Nguyen, H Jo, H Cho, D Min (October 2022), “[Multiagent Reinforcement Learning Based on Fusion-Multiactor-Attention-Critic for Multiple-Unmanned-Aerial-Vehicle Navigation Control](#)”, MDPI Energies 15 (19), 7426 – [\[GitHub\]](#)
2. H Jo, [Hoeun Lee](#), S Jeon, VK Kaliappan, TA 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](#), Y Kim (September 2018), “[Aircraft Identification and Route Tracking using a Model Satellite](#)”, 2018 KSAS Fall Conference, 431-434

SCHOLARSHIP

• National Science & Technology Excellence Scholarship

2024 – 2025

Korea Government Full Scholarship by Ministry of Science and ICT for Two-Year

Korea Student Aid Foundation

• Merit-based Academic Excellence Scholarship

2020 - 2021

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

Konkuk University

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 Dental 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 in Military
 - Video and Image Classification Task
- **2023 Air Force Creativity and Innovation Idea Contest (Air Force Hackathon)** *November 2023*
Fourth Place (4th) Republic of Korea Air Force
 - Target Identification using Sea-based Radar Range-Doppler Map (Image Classification Task)
 - Instance Segmentation of Impact Zones in Air-to-Ground Missile Shooting Scoring Image
- **2023 LH City Digital Twin Ideation Competition** *April 2023*
Participation Prize (4th) Korea Land & Housing Corporation
 - Solar Power Profit and Loss Calculation Service for Individual Households using Sunlight Analysis and Machine Learning-based Solar Power Expectation Algorithm
- **2021 Kookmin Bank Software Development Contest (KBSC)** *December 2021*
Grand Prize (1th) Kookmin Bank
 - ESG Educational Metaverse to Help Develop Environmental Awareness
 - Team Leader and Full-Stack Developer (Unity/C#, Django/Python) – [\[GitHub\]](#)
- **2019 Kookmin Bank Software Development Contest (KBSC)** *December 2019*
Excellence Prize (2th) in High School Student Part Kookmin Bank
 - Software for Relieving Tension using Virtual Reality and Machine Learning
 - Developer (Unity/C#, Wearable Hardware Devices to Measure Heart Rate and Voice Volume with C, Python) and Machine Learning Algorithms to Measure Tension based on User Behaviour and Bio Data
- **2018 Can-Satellite Competition Korea (CANSAT)** *September 2018*
Excellence Prize (2th) in High School Student Part Ministry of Science and ICT,
SaTReC, KAIST, KARI
 - Aircraft Identification and Route Tracking by Doppler Effect with a Model Satellite
 - Develop Model Satellites, Ground Station Program, Object-Tracking by Image Processing
- **2018 High School Club Software Competition** *October 2018*
Grand Prize (1th) and Popularity Award Ministry of Science and ICT,
IITP, KAIST
 - Software for Improving Presentation Power using Virtual Reality and Machine Learning
 - Developer (Unity/C# and Machine Learning Algorithm with Python)
- **Dean's List** *2020 – 2021*
Academic Excellence Award – 2020-2nd semester; 2021-1st and -2nd semester Konkuk University

TECHNICAL SKILLS

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

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, Numerical Analysis