

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)
- Laboratory Website Team Lead Developer and Manager

• 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, Open Source SW Project 1 (Deep Learning), Open Source SW Project 2 (Deep Reinforcement Learning)
- **Computer Science:** Operating System, System Programming, Computer Network, Algorithm, Data Structure, Object-Oriented Programming, Database, Software Engineering, C/C++/JAVA Programming, Numerical Analysis