

# Hoeun Lee

February 28, 2001

[leehe228@konkuk.ac.kr](mailto:leehe228@konkuk.ac.kr)

[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 Scholarship, 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 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)** November 2023  
*Fourth Place (4th)* Republic of Korea Air Force
  - Target Identification using 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 Technology
- **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 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)
- **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 with Python
- **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
  - Lead Developer (Unity/C#)
- **Dean's List** 2020 – 2021  
*2020-2nd semester, 2021-1st and -2nd semester* Konkuk University

## TECHNICAL SKILLS

---

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

## 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