Hoeun Lee

February 28, 2001

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Google Scholar · Blog · in · ⍉

EDUCATION

• Konkuk University, Seoul 🔗   *March 2020 − Present*

Bachelor's Degree expected in Computer Science and Engineering   Seoul, Korea

- ◦ Overall GPA: 4.48 / 4.50
- ◦ Major GPA: 4.50 / 4.50
- ◦ Top Ranked Student (1/233) for 5-semester in Dept. of Computer Science and Engineering
- ◦ Republic of Korea Air Force; Sergeant Honorable Dischared (Jan 2022 - Oct 2023)
- ◦ Expected to Early Graduate in August 2025

• 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

• AIDAS Laboratory Undergratudated Research Intern   *July 2024 − Present*

Artificial Intelligence, Big Data and System Laboratory, Studying in MedAI and SysAI Team   Seoul National University, Seoul

- ◦ Department of Electrical and Computer Engineering 🔗
- ◦ Studying LLM, Generative AI for System and Medical Applications

• Distributed Multimedia System Laboratory Student Researcher 🔗 ⍉   *March 2021 − May 2024*

Deep Reinforcement Learning Research Team   Konkuk University, Seoul

- ◦ Department of Computer Science and Engineering 🔗
- ◦ 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

PAPERS

1. S Jeon, <u>Hoeun Lee</u>, 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 ⍉

2. H Jo, <u>Hoeun Lee</u>, 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, <u>Hoeun Lee</u>, 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) — Seoul Natl' University Dental Hospital
  - Development of an AI Model for Classifying Dental Cavities using Synthesized Oral Image Data

- **2023 Military AI Competition (MAICON)** 🔗 *December 2023*
  Fourth Plage (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 (LH)
  - 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) ⟳

- **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 — Dept. of CSE, 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