

Seungyoo Lee

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<https://huggingface.co/DopeorNope>

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PERSONAL DATA

- ☐ Birth: 23, Jan 1995, in the Republic of Korea
- ☐ Nationality: Korean
- ☐ Family Status: Single
- ☐ Skills: Python (Torch, TensorFlow), C++, R

EDUCATION

- **Master of Science in Artificial Intelligence** Sep 2024 – Present
KAIST, Kim Jaechul Graduate School of AI, Seoul, Korea
Research Focus: Large Language Models
Advisor: Prof. Juho Lee, SIML Lab
- **Bachelor of Science in ICT Convergence and Business** Mar 2013 - Aug 2024
Handong Global University, Pohang, Korea (Leave of absence: 2014-2020)
Primary Major: ICT Convergence, Secondary Major: Business
GPA (Major): 4.37/4.5 | GPA (Total): 4.24/4.5
Advisor: Prof. Xiaopeng Yang

RESEARCH INTEREST

- ✓ Large Language Model (LLM)
- ✓ Self-Supervised Learning
- ✓ Computer Vision
- ✓ Multi-Modal

PUBLICATIONS (SCI)

Journals

1. **Lee, S.**, Han, K., Park, S., & Yang, X. (2022). Vehicle Distance Estimation from a Monocular Camera for Advanced Driver Assistance Systems. *Symmetry*, 14(12), 2657.
2. Yang, X., Park, S., **Lee, S.**, Han, K., Lee, M. R., Song, J. S., ... & Do Yang, J. (2023). Estimation of right lobe graft weight for living donor liver transplantation using deep learning-based fully automatic computed tomographic volumetry. *Scientific Reports*, 13(1), 17746.

PUBLICATIONS (KCI)

Conference

1. Han, K. J., **Lee, S.** Y., Jang, S. B., Seon, H. G., & Yang, X. (2023). Human Activity Recognition using Sensor Series Transformer with High-frequency Positional Encoding. *KIISE Conference Proceedings*, 2052-2054.

RESEARCH EXPERIENCES

- **Student Researcher** at *AI Medical Vision Lab, Handong Global University (Head)* Mar. 2022 ~ Present
(Prof. Xiaopeng Yang)
 - ✓ Vehicle Distance Estimation Using a Monocular Camera
 - ✓ Liver segmentation with deep-learning model
 - ✓ Visual Data-Based Driver Fatigue Detection Using Deep Learning Models

- **Research Assistance** at *Korea Real Estate Agency, Handong Global University* Aug. 2021 ~ Present
(Prof. Jung Eui Hong)
 - ✓ Analysis of Local Housing Market Using Machine Learning Algorithm
 - ✓ Development of Risk Prediction Model for Fraudulent Subscription Using Machine Learning Algorithm
 - ✓ Improvement of Machine Learning Algorithm for the Advancement of Housing Market Analysis
 - ✓ Detection of Unqualified Real Estate Subscriptions Using Machine Learning (In-depth Study on Fraudulent Subscriptions)

AWARDS AND HONORS

- 2023 Month's LLM: **NIA Director's Prize**, National Information Society Agency, Korea
- 2022 Healthcare AI Hackathon Competition Using Walking Data: **Grand Prize**, LINC 3.0 Project Group, Korea
- 2022 Problem-Solving Idea Contest Using Software: **Best Prize**, Handong Global University, Korea

EXTRA-CURRICULAR ACTIVITIES

- **Teaching Assistance** at *Handong Global University* Sep. 2021 ~ Present
 - ✓ Linear Algebra (2023-fall)
 - ✓ Programming 01 (2021-fall, 2023-spring, fall)
 - ✓ Machine Learning for Entrepreneurship (2022- spring)
 - ✓ AI Convergence and Application (2022,2023- fall)
 - ✓ Introduction to Software (2023 - winter)
 - ✓ AI-based Computer Vision application (2023- spring)

- **Tutor** at *Handong Global University* Sep. 2021 ~ Present
 - ✓ Financial Accounting (2021- Spring ~ 2022-fall)
 - ✓ Python Programming (2023- Spring)

- **Internship** at *Maker with Media Group Human & Forest* Dec. 2022 ~Present
 - ✓ **Robustness Large Language Model (LLM) and Korean LLM Development**
 - Developed the LLM that secured the first place on the 'Open LLM Leaderboard' as of January 14, 2024
Model Name: *DopeorNope/SOLARC-MOE-10.7Bx6*
(https://huggingface.co/spaces/HuggingFaceH4/open_llm_leaderboard).
 - Developed the LLM that secured the first place on the 'Open Ko LLM Leaderboard' as of November 11, 2023
Model Name: *HumanF-MarkrAI/COKAL-DPO-13b-v2*
(<https://huggingface.co/spaces/upstage/open-ko-llm-leaderboard>).
 - The SFT model was trained with the LoRA methodology and the DPO methodology, a reinforcement learning tuning methodology, was applied.
 - In data cleansing tasks, the Near Dedup algorithm was applied using Min Hash and Min Hash LSH to stabilize the distribution of text data by reducing the Jaccard similarity to 0.8 or higher.
 - Applied MOE methodology to enhance model's performance and make it more robustness.

- Developed the implementing the IA3 fine-tuning methodology, which dramatically reduces the number of parameters while achieving great performance (<https://github.com/Marker-Inc-Korea/K-G-OAT>).
- ✓ **NeRF Project**
 - Developing D- NeRF Model (Neural Radiance Fields for Dynamic Scenes)
 - Developing GUI Prototype for 3D Novel View Synthesis
 - Developing Human 3D Pose Estimation Model

OTHERS

1. G-UNETR++: A gradient-enhanced network for accurate and robust liver segmentation from CT images - **Draft (Medical Image Analysis)**
2. FMST-NeRF: Fast Multi-Style Transfer of Neural Radiance Fields for 3D Real-Scene – **Draft (Image and Vision computing)**