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Hyunsu Lee

Department of information and statistics
Chungnam National University
15, Gwanjeo-dong-ro 90beon-gil, Seo-gu,
Daejeon, Korea, 35379

Phone : +82-10-8912-1530
E-mail : hyunsu1762@gmail.com
Nationality : Korean
Military : Satisfied

EDUCATION

Undergraduate Student — Mar 2020 – Present
- Bach of Science in Information and Statistics — Degree expected August 2026
- Chungnam National University, Daejeon, Republic of Korea
- GPA : 3.76/4.5

RESEARCH EXPERIENCES

Undergraduate Research Assistant, Data Science Lab — Feb 2025 – Aug 2025
- Supported data preprocessing and documentation for medical datasets, improving clarity and workflow efficiency

University Administrative AI Document Review Automation, (Generation-type AI Challenge, CNU) — Apr 2025 – Aug 2025
- Developed an end-to-end AI chatbot and OCR system to automate university document review
- Built an integrated web platform connecting React frontend and Spring Boot backend

Detection of Air Pollution Emission Sources Using Satellite Image, National Information Society Agency (NIA) Data Creator Camp — Jun 2025 – Nov 2025
- Applied YOLOv8, ResNet, and U-Net Models on satellite data to identify emission sources
- Explored multimodal integration for environmental and ESG-related insights

Intern, Korean Astronomy and Space Science Institute (KASI) — Jul 2025 – Aug 2025
- Built preprocessing and integration pipelines for multi-source solar wind observation data.
- Evaluated deep learning and regression models using correlation analysis and feature importance metrics

RESEARCH INTERESTS

Main field: Data Science, Statistical Analysis, Artificial Intelligence

Current focus: Statistical modeling, machine learning, and intelligent computing

SKILLS

Programming languages: R, Python

PUBLICATIONS

1. J.-J. Suh, J.-H. Son, **H.-S. Lee**, K.-S. Lee, J.-Y. Kim, “Prediction of Heavy Ion Charge State Ratios and Elemental Composition of Solar Wind Using Deep Learning”

(In preparation)

PRESENTATIONS

1. J.-J. Suh, J.-H. Son, **H.-S. Lee**, K.-S. Lee, J.-Y. Kim, "Prediction of Heavy Ion Charge State Ratios and Elemental Composition of Solar Wind Using Deep Learning", Korean Space Science Society, Jeju, October 2025

HONORS AND AWARDS

- Korea Microsoft Award, (Generation type AI Challenge - Chungnam National University) Sep 2025
- Completion Certificate Awarded, (Data Creator Camp - National Information Society Agency, NIA) Nov 2025

SUMMARY

My study in data science was sparked by a fascination with uncovering meaningful insights from complex, imperfect real-world data. In 2025, I gained hands-on experience preprocessing and analyzing diverse datasets from satellite imagery for air pollution detection to deep learning models applied to space science data. These projects exposed me to the challenges of noisy data, multimodality, and bridging theory with practice.

While I have solid grounding in statistical theory and computational techniques, my experience revealed the ongoing need to improve model interpretability and robustness, especially when working with heterogeneous scientific datasets. This realization motivates me to deepen my knowledge in both AI and statistical methods, focusing on practical, explainable approaches rather than purely algorithmic optimization.

I am eager to contribute to interdisciplinary research environments where data science can be applied thoughtfully to real problems by integrating domain knowledge with advanced analytics. By collaborating with experts and continuing my studies, I aspire to develop solutions that address complex scientific challenges and yield actionable insights.

To Build these foundations, I am committed to fostering a deep understanding of both theoretical frameworks and their practical applications. I seek to cultivate an adaptive mindset that embraces challenges as opportunities for innovation, contributing to research that is not only technically sound but also impactful in diverse domains.