# HyoBin, Kim

✉ hyobinkim@gmail.com
🏠 https://rose2gyqls.github.io

## ABOUT

My research interests lie at the intersection of **multimodal deep learning**, **biosignal processing**, and **medical artificial intelligence**. I focus on interpreting complex human data, ranging from raw physiological signals to unstructured clinical information. My primary objective is to bridge the gap between theory and practice by translating cutting-edge AI research into robust, deployable systems that advance **healthcare** and **human-AI interaction**.

## RESEARCH EXPERIENCE

**BMI (Bio-Medical Informatics) Lab**

Seoul National University Hospital | July, 2025 to present
- Clinical Knowledge Graph Construction from NICE Guidelines using LangGraph and Neo4j
- MapOMOP: LLM-Driven Medical Terminology Standardization and Mapping to OMOP CDM
- Explainable Atrial and Ventricular Arrhythmia Classification using Clinical Holter ToF(Tetralogy of Fallot) Data
- Development of a Large-Scale Foundation Model for Continuous Holter Biosignal Analysis

**LAMDA (Learning and Mining from Multimodal Dataset) Lab**

Sungkyunkwan University, Department of Applied Artificial Intelligence | May, 2023 to August, 2025
- Δ DELTA: Language Diffusion-based EEG-to-Text Architecture (Master's Thesis)
- Development of Game-Based Digital Therapeutics (DTx) Technology for Adolescent Mental Health Management (with. KOCCA)
- Research on Signal and Natural Language-Based Recommendation Systems (with. Doosan)
- [AAI3029] Teaching Assistant for Conversation agent design and application Course (Spring, 2025)
- [DIM5005] Teaching Assistant for Immersive Media and Digital Humans Course (Fall, 2024)
- [URP] Teaching Assistant for Undergraduate Research Program (Winter, 2023 & Summer, 2024)

## SELECTED PUBLICATIONS

### International Publications

**[c8]** *Kim, Hyobin*, et al. "EEG-to-Text as Restoration: A Discrete Diffusion Framework for Robust BCI." IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP). 2026.

**[c7]** *Kim, Hyobin*, et al. "EEG-Informed Neuroadaptive Language Model for CBT." The 41st ACM/SIGAPP Symposium On Applied Computing (SAC). 2026.

**[c6]** *Kim, Hyobin*, et al. "Δ DELTA: Language Diffusion-based EEG-to-Text Architecture." NeurIPS 2025 Workshop on Foundation Models for the Brain and Body (NeurIPSW). 2025.

**[c5]** *Kim, Hyobin*, et al. "Biosensing-Driven Cognitive Augmentation: Real-Time Mind Wandering Detection and Robot Intervention." Companion of the 2025 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiCompW). 2025.

## CERTIFICATE & AWARDS

- 2023.02 | Computer Proficiency Certification Level 1
- 2022.06 | Industrial Engineer Information Processing
- 2021.10 | Network Manager Level 2
- 2020.01 | SAFe Scrum Master

- 2025.09 | Encouragement Award, Korean Society of Digital Health
- 2024.12 | Sungkyunkwan University Simsan Scholarship
- 2024.11 | Excellence Award, BOAZ Hackathon
- 2024.11 | Finalist, KRX Financial Language Model Competition

## EDUCATION

**Sungkyunkwan University**

**M.S.** Dept. of Applied Artificial Intelligence (2023.08 - 2025.08)
- GPA: 4.30 / 4.50

**Soongsil University**

**B.S.** Dept. of Computer Science and Engineering (2020.03 - 2023.08)
- GPA: 4.41 / 4.50 *(Summa Cum Laude)*

# HyoBin, Kim

hyobinkim@gmail.com

https://rose2gyqls.github.io

## OTHER PROJECT

### Hana Bank Agile Transformation Project (with. The Boston Consulting Group (BCG))

Project Research Inc. | July, 2021 to September, 2021
- Analyzed Agile adaptability using various metrics and identified improvement points
- Experienced the process of identifying value in data and improving the current situation

### NH Nonghyup Bank Agile Transformation Project

Project Research Inc. | May, 2020 to December, 2022
- Visualized data on Agile cultural progress using PowerBI and identified areas for improvement
- Gained experience in the entire process, from data collection and organization to visualization

### LSE Agile Transformation Assessment Project

Project Research Inc. | February, 2020 to May, 2020
- Conducted BI analysis on Agile suitability and derived suitability results
- Understood and analyzed raw data to extract insights and generate BI outputs

## PUBLICATIONS

### Domestic Publications

[c4] S. Kim, J. Kim, *H. Kim* and K. Kim. "Construction of clinical practice guidelines-based knowledge graphs aligned with omop cdm." Korean Society of Digital Health, 2025.

[c3] J. Lee*, *H. Kim\**, S. Hwang*, J. Kim*, M. Song* and H. Oh. "EEG-Based Group Contrastive Learning Framework for Neuroadaptive CBT Response Generation." Korea Artificial Intelligence Conference, 2025, 453-454.

[c2] *Kim, Hyo-bin* and Hayoung Oh. "Mix-Interest: Augmentation in Sequence Data by Mixing the Interest for Sequential Recommendation System." Korea Computer Congress, 2025, 221-223.

[c1] *Kim, Hyo-Bin*, and Ha-Young Oh. "Designing and Implementing Real-Time Multimodal Virtual Human for Alexithymia." Annual Conference of KIPS. Korea Information Processing Society, 2025.