Keondo Park

Ph.D Student @ AIoT Lab, Graduate School of Data Science, Seoul National University

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Professional Summary

Ph.D. candidate at Seoul National University researching efficient multimodal AI systems for healthcare and real-world deployment. My recent work focuses on sleep foundation models, time-series representation learning, and on-device AI for physiological signal analysis. Published at top-tier venues including ICML, ICLR, NeurIPS, CVPR, IPSN and SLEEP. My research aims to bridge foundation models, resource-efficient deep learning, and real-world healthcare applications such as sleep monitoring and wearable AI systems. Proven ability to deliver award-winning solutions for real-world domains, highlighted by 1st and 2nd place finishes in Samsung AI Challenges.

Education

Graduate School of Data Science, Seoul National University, Republic of Korea Mar. 22 – Present

Ph.D student in Data Science

- GPA: 4.12/4.3
- Advisor: Prof. Hyung-sin Kim

Graduate School of Data Science, Seoul National University, Republic of Korea Mar. 20 – Feb. 22

M.S. in Data science

- GPA: 4.19/4.3, Summa Cum Laude
- Advisor: Prof. Hyung-sin Kim
- Thesis: LuxMea: Real-time on-device 3D object detection for visually impaired people

Seoul National University, Republic of Korea Mar. 07 – Aug. 13

B.S. in Mathematics

- GPA: 3.84/4.3, Cum Laude

Publications

First-Author Publications

- **Keondo Park**, Younghoon Na, You Rim Choi, Hyunwoo Ryu, Hyun-Woo Shin and Hyung-Sin Kim, SleepMaMi: A Universal Sleep Foundation Model for Integrating Macro- and Micro-structures, International Conference on Machine Learning (ICML 2026), Jul 2026. (Acceptance ratio: 26.6%)
- **Keondo Park**, Joopyo Hong, Wooseok Lee, Hyun-Woo Shin, Hyung-Sin Kim, DistillSleep: Real-Time, On-Device, Interpretable Sleep Staging from Single-Channel EEG, SLEEPJ, Aug 2025,
- **Keondo Park**, You Rim Choi, Inhoe Lee, and Hyung-Sin Kim, PointSplit: Towards On-device 3D Object Detection with Heterogeneous Low-power Accelerators, ACM/IEEE Conference on Information Processing in Sensor Networks (ACM/IEEE IPSN'23), May 2022. (Acceptance ratio: 26.5%)

Co-Author Publications

- Dongik Park, Hyunwoo Ryu, Suahn Bae, **Keondo Park**, and Hyung-Sin Kim, T1: One-to-One Channel-Head Binding for Multivariate Time-Series Imputation, The International Conference on Learning Representations (ICLR 2026), Apr 2026. (Acceptance ratio: 28%)
- Eunsu Baek, **Keondo Park**, Jeonggil Ko, Min-hwan Oh, Taesik Gong, and Hyung-Sin Kim, Position: AI Should Sense Better, Not Just Scale Bigger: Adaptive Sensing as a Paradigm Shift, The Neural Information Processing Systems (NeurIPS 2025), Dec 2025. (Acceptance ratio: 8%)
- Eunsu Baek, **Keondo Park**, Ji-yoon Kim, and Hyung-Sin Kim, Unexplored Faces of Robustness and Out-of-Distribution: Covariate Shifts in Environment and Sensor Domains, IEEE/CVF Computer Vision and Pattern Recognition Conference (CVPR'24), June 2024. (Acceptance ratio: 23.6%)
- Woojung Kim, **Keondo Park**, Kihyuk Sohn, Raphael Shu, Hyung-Sin Kim, Federated Semi-Supervised Learning with Prototypical Networks, arxiv preprint, May 2022.

Patent

- Hyunwoo Shin, Hyungsin Kim, **Keondo Park**, " On-device Real-time Sleep Stage Classification with Single Channel EEG using Low-power NPU", Application, 10-2022-0129609, Nov. 2022.

Awards

- **2nd Place** at the 2025 Samsung Research AI Challenge (Topic: Multimodal AI models that can understand users' daily photos).
- **Best Paper** Award at the 2025 summer Korean AI Conference: DistillSleep: Real-Time, On-Device, Interpretable Sleep Staging from Single-Channel EEG.
- **1st Place** at the 2023 Samsung AI Challenge (Topic: Camera-Invariant Domain Adaptation).
- **Best Paper** Award at the 2022 summer Korean AI Conference: Federated Semi-Supervised Learning with Prototypical Networks.
- **2nd place** at the 2022 national AI competition (Semi-supervised image segmentation).
- **2nd place** at the 2022 Naver AI Rush (Landmark detection).
- **Best Paper** Award at the 2022 Korean Sleep Medicine Conference: "On-device Real-time Sleep Stage Classification with Single Channel EEG using Low-power NPU".
- **Excellence award** at the 2022 k-ium medical AI competition.
- BK outstanding graduate student in 2022.
- 4th place at the 2021 national AI competition (lightweight object detection).
- 2021 GSDS (Graduate School of Data Science) InnoJam winner: LuxMea: On-device 3D object detection for visually impaired people.

Experiences

NRF Korea Young Researcher (Research project) Mar. 23 – Present

- Joint design of application, deep learning and systems for on-device deep video understanding.
- Participating researcher

SNU Creative-Pioneering Researcher (Research project) Aug. 22 – Jul. 25

- Ambient Healthcare: IoT-based personalized edge AI system for remote patient monitoring.
- Participating researcher

SNU Education and Research in Medical AI program Aug. 22 – Present

- Collaboration with Prof. Hyunwoo Shin from Seoul National University Hospital.
- Research area: Sleep AI, at-home sleep monitoring with on-device AI.

SK Hynix (Research project) Dec. 20 – Sep. 21

- Real time fault detection of time series data, collected during semiconductor production.
- Participating researcher

Milliman, Inc, Republic of Korea (Employed) Jan. 13 – Feb. 20

(Global consulting company specialized in actuarial services.)

Consulting Actuary

- Developed large-scale actuarial forecasting systems for insurance cash-flow prediction using MG-ALFA and Prophet
- Designed and implemented enterprise data warehouse pipelines using Oracle
- Developed internal web-based systems for assumption management and data visualization using NodeJS, C#, and Tableau
- Participated in projects involving M&A / New insurance product development / Asset-Liability Management (ALM)

Milliman UK, Birmingham, United Kingdom (Secondment) Feb. 16 – Jan. 17

Data Engineer

- Developed ETL pipelines for regulatory reporting under Solvency II using Pig and Hadoop
- Built management analytics and visualization systems using Power BI and R
- Received the Challenger Award (Outstanding Employee Award) in 2016

Technical Skills

Programming: Python, NodeJS, C/C++, C#, Javascript, SQL

ML Frameworks: Tensorflow/PyTorch,

System & Tools: Linux, Oracle, Haddop, Tableau, Power BI

Languages: Korean (Native), English (TOEFL iBT 103), French (DELF A1)

Certifications: ASA (Associate of Society of Actuary, 2019), CFA(Chartered Financial Analyst, 2018)

Academic Service & Leadership

Teaching:

- Teaching Assistant, Computing for Data Science (C++): 2023 Spring
- Teaching Assistant, Computing Foundation for Data Science (Python/C): 2021 Winter bootcamp, 2021 Spring
- Teaching Assistant, Ambient On-Device AI (From scratch): 2021 Spring, 2022 Summer bootcamp

Talks

- SNU AI Med Seminar in 2022: On-device Real-time Sleep Stage Classification with Single Channel EEG using Low-power NPU.
- ExploreCSR by Google in 2023: Life, Research and Career plan at Graduate School.

Reviewer

- Served as a reviewer for CVPR, ICML, IEEE JBHI and IEEE TAI.

Leadership

- Head of Lab server administration, AIoT (2020-2023): From zero to four GPU nodes (16 GPUs)
- Lab leader, 2020-2021.

Others

- Class project introduced in the press, 2020: On-device mask detection using Google Coral EdgeTPU (https://www.mk.co.kr/news/it/view/2020/06/669932/)
- Class project, 2022: On-device Real-time Sleep Stage Classification with Single Channel EEG on Coral for daily sleep monitoring (link to video)