Won Jun Kim M.D.

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Education

Korea Advanced Institute of Science and Technology, MS in Artificial Intelligence — 2023 - Present

- Advised by Prof. Jong Chul Ye (*Bio-imaging, Signal Processing, and Learning Lab*)

Korea University, Bachelor of Medicine / Medical Doctor — 2013 - 2019

Publications †Equal contribution

[1] **Derivative-Free Diffusion Manifold-Constrained Gradients for Unified XAI** — arXiv preprint

Won Jun Kim†, Hyungjin Chung†, Jaemin Kim†, Sangmin Lee, Byeongsu Sim, Jong Chul Ye

[2] **LLM-CXR: Instruction-Finetuned LLM for CXR Image Understanding and Generation** (Citations: 16) — ICLR 2024

Suhyeon Lee†, ***Won Jun Kim***†, Jinho Chang, Jong Chul Ye

[3] **Association between adiposity and cardiovascular outcomes: an umbrella review and meta-analysis of observational and Mendelian randomization studies** (Citations: 204) — Eur Heart J 2021

Min Seo Kim, ***Won Jun Kim***, Amit V Khera, Jong Yeob Kim, Dong Keon Yon, Seung Won Lee, Jae Il Shin, Hong-Hee Won

[4] **Comprehensive Learning Curve of Robotic Surgery: Discovery From a Multicenter Prospective Trial of Robotic Gastrectomy** (Citations: 114) — Ann Surg 2021

Min Seo Kim, ***Won Jun Kim***, Woo Jin Hyung, Hyoung-Il Kim, Sang-Uk Han, Young-Woo Kim, Keun Won Ryu, Sungsoo Park

[5] **Comparative efficacy and safety of pharmacological interventions for the treatment of COVID-19: A systematic review and network meta-analysis** (Citations: 198) — PLoS Medicine 2020

Min Seo Kim, Min Ho An, ***Won Jun Kim***, Tae-Ho Hwang

Invited Talks

Vision-language models for medical images

Seoul National University College of Medicine, Department of Radiology

- Discussion of LLM-CXR and training large language models in the medical image domain

Achieving vision-language alignment in pretrained LLMs

Electronics and Telecommunications Research Institute (ETRI), Korea

- Discussion of LLM-CXR and finetuning the token space of an LLM to achieve vision-language alignment

Grant Projects

Plug-and-Play Explanation and Verification of Explanation Modules for Classification Neural Networks

Institute of Information & Communications Technology Planning & Evaluation (IITP) grant funded by Korea government Ministry of Science and ICT

- Development of an open-source XAI algorithm and software, in particular a model-agnostic feature attribution method that leverages diffusion models to ground the attributions to the image manifold.

Automated Computer-assisted Diagnosis (CAD) Module for Lung Nodule Screening

Korea Medical Device Development Fund grant funded by Korea government Ministry of Science and ICT; Ministry of Trade, Industry, and Energy; Ministry of Health & Welfare; Ministry of Food and Drug Safety

- Development of a high-accuracy lung nodule detection software for cancer screening with plain chest radiographs, using a custom self-supervised training scheme for the vision transformer.

Awards & Scholarships

- Dongwon-KAIST scholarship (full scholarship for tuition and stipend) 2023-present
- Korea University Academic Excellence Award (GPA 4.5/4.5) 2019

Teaching Experience

AI619 Medical Imaging and Signals (TA for Prof. Jong Chul Ye) Fall 2024

Other Experiences

Gangneung Correctional Institution 2019-2021

- Infirmary physician for convicts and inmates

Hongseong Public Health Center 2021-2022

- Primary care in medically underserved areas & COVID-19 pandemic response

Languages & Skills

- English: fluent (TOEFL iBT 119/120) | Korean: native | Japanese: conversational
- Proficient in Python, PyTorch, LaTeX