Junmo Kim

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RESEARCH INTEREST

Medical Informatics

I'm interested in leveraging electronic health records and diverse types of medical data through artificial intelligence, to prevent disease progression, alleviate medical workforce shortage, and reduce healthcare expenditures.

- Electronic Health Records Foundation Models
- Observational Medical Outcomes Partnership Common Data Model
- AI in Electrocardiogram

EDUCATION

Seoul National University

- Ph.D. in Interdisciplinary Program in Bioengineering — Mar 2021 – Feb 2026 (expected)
  - Research Interest: Medical Informatics
  - Advisor: Prof. Kwangsoo Kim, Prof. Hyung-Jin Yoon

Korea University

- B.S. in Industrial Management Engineering, Mathematics — Mar 2015 – Feb 2021

POSITIONS

Seoul National University Hospital, Seoul, Republic of Korea — Jul 2020 – Present

- Research Assistant in Biomedical Research Institute
  - Advisor: Prof. Kwangsoo Kim
  - Project: Development of artificial intelligence-based pharmacovigilance prediction model
  - Project: Research on Support Systems for the Healthcare Social Safety Net
  - Project: AI-based lipid profile prediction and cardiovascular disease risk assessment
  - Project: Continual learning framework for multicenter study using electrocardiogram

Korea University, Seoul, Republic of Korea — Jun 2018 – Apr 2020

- Intern Researcher in Mathematical Optimization and Operation Research Lab
  - Host: Prof. Hong Seo Ryoo
  - Project: Optimization of semiconductor automatic logistic system
  - Project: Logical analysis of economic factors for short-term forecasting of airline demand

PUBLICATIONS

C: Conference; J: Journal
(*: Equal contribution)

IN PREPARATION

[C1] MedRep: Medical Concept Representation for General Electronic Health Record Foundation Models (**Link**)
Junmo Kim, Namkyeong Lee, Jiwon Kim, Kwangsoo Kim
arXiv (2025)

[J8] Pretrained Patient Trajectories for Adverse Drug Event Prediction Using Common Data Model-based Electronic Health Records (**Link**)
Junmo Kim, Joo Seong Kim, Ji-Hyang Lee, Min-Gyu Kim, Taehyun Kim, Chaeeun Cho, Rae Woong Park, and Kwangsoo Kim
Communications Medicine (Accepted) (2025)

PUBLISHED

[J7] Prediction of reduced left ventricular ejection fraction using atrial fibrillation or flutter electrocardiograms: A machine-learning study (**Link**)
Soonil Kwon, SooMin Chung, So-Ryoung Lee, Kwangsoo Kim, **Junmo Kim**, Dahyeon Baek, Hyun-Lim Yang, Eue-Keun Choi, and Seil Oh
Digital Health (2025)

[J6] Identifying potential medical aid beneficiaries using machine learning: A Korean Nationwide cohort study (**Link**)
Junmo Kim, Su Hyun Park, Hyesu Lee, Su Kyoung Lee, Jihye Kim, Suhyun Kim, Yong Jin Kwon, and Kwangsoo Kim
International Journal of Medical Informatics (2025)

[J5] Deep learning-based prediction of Clostridioides difficile infection caused by antibiotics using longitudinal electronic health records (**Link**)
Junmo Kim*, Joo Seong Kim*, Sae-Hoon Kim, Sooyoung Yoo, Jun Kyu Lee, and Kwangsoo Kim
npj Digital Medicine (2024)

[J4] Continual learning framework for a multicenter study with an application to electrocardiogram (**Link**)
Junmo Kim, Min Hyuk Lim, Kwangsoo Kim, and Hyung-Jin Yoon
BMC Medical Informatics and Decision Making (2024)

[J3] Deep learning-based long-term risk evaluation of incident type 2 diabetes using electrocardiogram in a non-diabetic population: a retrospective, multicentre study (**Link**)
Junmo Kim, Hyun-Lim Yang, Su Hwan Kim, Siun Kim, Jisoo Lee, Jiwon Ryu, Kwangsoo Kim, Zio Kim, Gun Ahn, Doyun Kwon, and Hyung-Jin Yoon
eClinicalMedicine (2024)

[J2] Risks of complicated acute appendicitis in patients with psychiatric disorders (**Link**)
Junmo Kim*, Chaeyoung Yang*, Hyung Joon Joo, Rae Woong Park, Ga Eun Kim, Daeho Kim, Joonho Choi, Jun Ho Lee, Eunkyung Kim, Seon-Cheol Park, Kwangsoo Kim, and Il Bin Kim
BMC Psychiatry (2022)

[J1] Real-Time Evaluation of Cerebral Autoregulation Based on Near-Infrared Spectroscopy to Predict Clinical Outcome after Bypass Surgery in Moyamoya Disease (**Link**)
Junmo Kim, Eun-Jin Ha, Hee-Soo Kim, Eun-Young Park, Hyung-Chul Lee, Yoon-Hee Choo, Youngbo Shim, Kwangsoo Kim, Keewon Kim, and Seung-Bo Lee
BioMed Research International (2022)

AWARDS & SCHOLARSHIPS

Youlchon Foundation AI for All Fellowship, AI Institute in Seoul National University 2021 – Present

Veritas Scholarship, Korea University Spring 2019

- Research on optimization of semiconductor automatic logistic system
  - Advisor: Prof. Hong Seo Ryoo

REFERENCES

Prof. Kwangsoo Kim
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Adjunct Associate Professor, Department of Medicine, College of Medicine, Seoul National University
E-mail: kwangsookim@snu.ac.kr

Prof. Hyung-Jin Yoon
Professor, Department of Human Systems Medicine, Seoul National University College of Medicine
E-mail: hjyoon@snu.ac.kr

Prof. Rae Woong Park
Professor, Department of Biomedical Informatics, Ajou University School of Medicine
E-mail: veritas@ajou.ac.kr

[*CV compiled on 2025-04-25*]