Junmo Kim

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RESEARCH INTEREST

Medical AI

I'm interested in leveraging artificial intelligence and multimodal biomedical data to discover new clinical and biological knowledge.

- Large Multimodal Electronic Health Records Foundation Models
- Discovering new clinical and biological knowledge through AI
- Enhancing generalizability of medical AI models through OMOP CDM

POSITIONS

Stanford University, Stanford, California, United States — Mar 2026 – Present

- Postdoctoral Scholar in the Department of Anesthesiology, Pain, and Perioperative Medicine
  - Advisor: Prof. Nima Aghaeepour
  - Conducting research on multimodal EHR foundation models using Omics data.

Seoul National University Hospital, Seoul, Republic of Korea — Jul 2020 – Feb 2026

- Research Assistant in Biomedical Research Institute
  - Advisor: Prof. Kwangsoo Kim
  - Designed 'MedRep', a novel medical concept representation framework for general EHR foundation models, enablingtransferable patient embeddings across heterogeneous clinical datasets.
  - Built an OMOP CDM-based EHR foundation model to predict diverse adverse drug events across multiple hospitals,demonstrating cross-institutional generalizability.
  - Developed multimodal EHR + ECG foundation model for cardiovascular disease prediction, integrating structured clinicalrecords with 12-lead ECG signals.
  - Engineered deep learning pipelines for pharmacovigilance: predicted C. difficile infections and cutaneous adverse drugreactions from longitudinal EHR data.
  - Led IRB/DRB compliance processes and managed large-scale clinical data across 5+ hospital sites under strict privacyprotocols.

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

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

EDUCATION

Seoul National University

- Ph.D. in Bioengineering — Mar 2021 – Feb 2026
  - Dissertation title: Toward Multimodal Electronic Health Record Foundation Models
  - Advisor: Prof. Kwangsoo Kim, Prof. Hyung-Jin Yoon

Korea University

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

PUBLICATIONS

(*: Equal contribution)

IN PREPARATION

[11] Multimodal Electronic Health Record Foundation Models with Electrocardiogram for Cardiovascular Disease Prediction (**Link**)
Junmo Kim, Young-Kwan Kim, Kwangsoo Kim
npj Digital Medicine (Under Review) (2025)

[10] Deep Learning-based Prediction of Peptic Ulcer Diseases Caused by Nonsteroidal Anti-inflammatory Drugs Using Longitudinal Electronic Health Records
Joo Seong Kim*, **Junmo Kim***, Hyunsoo Chung*, Chaiho Shin, Sae-Hoon Kim, Sooyoung Yoo, Sang Hyub Lee, Kwangsoo Kim
Scientific Reports (Under Review) (2025)

PUBLISHED

[9] MedRep: Medical Concept Representation for General Electronic Health Record Foundation Models (**Link**)
Junmo Kim, Namkyeong Lee, Jiwon Kim, Kwangsoo Kim
Journal of the American Medical Informatics Association (2026)

[8] Prediction of Antibiotic-Associated Cutaneous Adverse Drug Reactions Using Electronic Health Record Foundation Models (**Link**)
Junmo Kim*, Kyunghoon Kim*, Jeong-Eun Yun, Yu-Kyoung Hwang, Min-Gyu Kang, Seok Kim, Sooyoung Yoo, Chaiho Shin, Suhyun Kim, Kwangsoo Kim, Sae-Hoon Kim
npj Digital Medicine (2026)

[7] 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 (2025)

[6] 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)

[5] 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)

[4] 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)

[3] 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)

[2] 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)

[1] 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 – 2025
- KRW 20,000,000 (USD 15,000) annually

Veritas Scholarship, Korea University Spring 2019
- Research on optimization of semiconductor automatic logistic system
  - Advisor: Prof. Hong Seo Ryoo

REFERENCES

Prof. Nima Aghaeepour
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Professor, Department of Biomedical Data Sciences, Stanford University
Professor, Department of Pediatrics, Stanford University
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E-mail: veritas@ajou.ac.kr

[*CV compiled on 2026-04-05*]