

Curriculum Vitae : Sungjoo, Lee

Integrated PhD Program in Digital Health
SAIHST (Samsung Advanced Institute for Health Sciences & Technology)
Sungkunkwan University

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EDUCATION

Integrated PhD Program in Digital Health (2017.03 - Present) Sungkunkwan University, South Korea
B.S. in Statistics (2016) Sungshin Women's University, South Korea.
B.S. in Management, Minor (2016) Sungshin Women's University, South Korea

RESEARCH INTERESTS

- Clinical Prediction modeling; machine learning; statistical modeling
- Causal inference in retrospective observational studies; mediation analysis
- Repeated measured data; survival analysis; longitudinal analysis
- Mediation analysis

RECENT PUBLICATIONS

Papers at Refereed Journals (*Co-first author, **Co-corresponding author)

- Lee, S., S. Hong, W.C. Cha**, K. Kim** (2020) Predicting Adverse Outcomes for Febrile Patients in the Emergency Department Using Sparse Laboratory Data: Development of a Time Adaptive Model. *JMIR Medical Informatics*, 8(3):e16117 (SCIE, IF: 3.188). 2020-03-26
- Hong, S, S. Lee, J. Lee, W.C. Cha**, K. Kim** (2020) Prediction of Cardiac Arrest in the Emergency Department Based on Machine Learning and Sequential Characteristics: Model Development and Retrospective Clinical Validation Study. *JMIR Medical Informatics*, 8(8):e15932 (SCIE, IF: 3.188). 2020-08-04
- Park, J.*, Lee, S.*, Kim, K.**, Park, H., Ki, C.S., Oh, Y.L., Shin, J.H., Kim, J.S., Kim, S.W., Chung, J.H. and Kim, T.H.** (2021) TERT Promoter Mutations and the 8th Edition TNM Classification in Predicting the Survival of Thyroid Cancer Patients. *Cancers*, 13(4), p.648 (SCIE, IF: 6.126). 2021-02-03
- Park, J., Lee, S., Park, J., Park, H., Ki, C. S., Oh, Y. L., ... & Kim, T. H. (2021). Proposal of a New Prognostic Model for Differentiated Thyroid Cancer with TERT Promoter Mutations. *Cancers*, 13(12), 2943.

ACADEMIC PRESENTATIONS

- “Predicting the Adverse Outcome of Emergency Febrile Patients Using Sparse Laboratory Data: A Time Adaptive Model”, Presented at *the 3rd Annual SAIHST Symposium*, Hippocrates Hall at Irwon Station Building, Seoul, South Korea, December 23, 2019 (Presenter: S. Lee).
- “Development of a Severity Prediction Model using Laboratory Data for ED Patients with Fever”, Presented at *the Korean Society of Emergency Medicine Fall Conference*, Songdo Convensia, Incheon, South Korea, October 19, 2018 (Presenter: D.Lee).
- “Development of a Severity Prediction Model using Laboratory Data for ED Patients Suspected of Infection: Imbalanced Problem in Prediction Modeling”, Presented at *the Korean Society of Medical Informatics Spring Conference*, Samsung Medical Center, South Korea, June 15, 2018 (Presenter: D.Lee).
- “Possible Difficulties that Early Users of Atlas may Experience,” Presented at *the Korean Society of Medical Informatics Fall Conference*, Health Care Innovation Park, Seoul National University Hospital, South Korea, November 17, 2017(Presenter: D.Lee).

RESEARCH PROJECTS

- Development and Implementation of CDM, FHIR and AI-based Precision Medicine Platform to improve National Medical Quality and Safety for Emergency and Critical Patients (April 2019 – Present)
 - Ministry of Health and Welfare (PI: Kyunga Kim)
 - Conducting qualitative research for hospital quality indicators and developing a management dashboard program
- Development and validation of a score model for predicting time-dependent mortality in very low birth weight Infant (VLBWI) (June 2020 – Feb. 2021)
 - National Research Foundation of Korea, NRF (PI: Myunghee Lee)
 - Statistical model development and calibration; Developing the score system
- The effect of CRT upgrade to overall survival in Pacing-associated Heart Failure patients (Aug. 2020 – May. 2021)
 - Samsung Medical Center (PI: Seungjeong Park)
 - Design and analyses of The Korea National Health Insurance Claim Data
- Effect of UDCA on Hypoglycemic and Abnormality of Lipid Profile in Patients with Type 2 Diabetes (Jan. 2019 – Nov. 2019)
 - Daewoong Pharmaceutical Corporation (PI: Tae Jun Kim)
 - Identification of the effect of UDCA to mortality; Developing statistical models and visualization
- Development and clinical validation of high performance multi-diagnostic technology of genome biomarker (June 2018 – Dec. 2018)
 - Ministry of Health and Welfare (PI: Myungjoo Ahn)
 - Statistical analysis for evaluation of high performance multi-diagnostic technology and comparison with existing technology

- A study on non-parametric propensity score method in unbalance multiple treatment group (Jun. 2021 – Present)
 - National Research Foundation of Korea, NRF (PI: Kyunga Kim)
- Development of Distributed Bio-Health Integrated Data Network Construction Technology based on Precedent Common Data Model (Aug. 2018 – Dec.2018)
 - Korea Ministry of Trade, Industry and Energy (PI: Dongkyung Chang)
 - Case study, explanatory data analysis
- Development of Weather Information and Improvement of Service (June 2016 – Dec. 2016)
 - Korea Meteorological Administration
 - Index case study and data statistical analysis to improve the thermal index service of the Korea Meteorological Administration

OTHER PROFESSIONAL EXPERIENCE

Workshop Assistant

- Clinical Research Methodology Course, Samsung Medical Center, South Korea (Nov. 17, 2018)
 - Basic Python Programming
- Teaching assistant, Sungshin Women's University, South Korea (Sep. – Dec., 2016)
 - Introduction of mathematical statistics

Other Activities

- Clinical Research Methodology Course, Samsung Medical Center, South Korea (Nov. 17, 2018)
- Digital Health Hackathon co-hosted by SAIHST and Digital Healthcare Partners
 - The organizing committee at the 2nd Digital Health Hackathon (Sep. 22-23, 2017)
 - The organizing staff at the 3rd Digital Health Hackathon (Oct. 27-28, 2018)
 - The organizing staff at the 4th Digital Health Hackathon (Oct. 13, 2019)
- A department office assistant, department of statistics, Sungshin Women's University, South Korea (Feb. – Dec., 2016)
- Exchange Student Program California State University, Fullerton (Aug. 2013 – June 2014)

LICENSES CERTIFICATES

- SAS Foundation
 - SAS Certified Advanced Programmer for SAS 9 (2018)
 - SAS Certified Base Programmer for SAS 9 (2015)
- Others
 - MS Office: Specialist Master (2015)
 - ADsP : Advanced Data Analytics Semi-Professional (2020)

HONORS AND AWARDS

- Awarded in the 3rd Annual SAIHST Symposium (Dec. 23, 2019) SAIHST
- Awarded in Statistical Academic Conference (2015-2017) Sungshin Women's University
- Academic Scholarship (2013-2015) Sungshin Women's University
- National Scholarship (2012) Excellent scholarship for science and engineering