

Jihyung Kook

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Seoul, South Korea

RESEARCH INTERESTS

My research interests focus on **data privacy**, particularly in **privacy-preserving machine learning**. I am interested in exploring practical methods for secure and efficient training and unlearning on sensitive data, drawing on cryptographic approaches such as homomorphic encryption as needed, to help ensure trustworthy, and scalable AI.

Keywords: Data Privacy, Privacy-Preserving Machine Learning (PPML), Cryptography

EDUCATION

- **Georgia Institute of Technology** Dec. 2024
M.S. in Computer Science (OMSCS) GA, USA
 - Specialization: Computational Perception & Robotics
- **Sookmyung Women's University** Feb. 2017
B.S in Statistics and Computer Science (Double Major) Seoul, South Korea

PUBLICATIONS

C=CONFERENCE, J=JOURNAL, P=PATENT, S=IN SUBMISSION, T=THESIS

- [J.1] Tae-jung Oh, **Ji-hyung Kook**, Se Young Jung, et al. (2021). **A standardized glucose-insulin-potassium infusion protocol in surgical patients: Use of real clinical data from a clinical data warehouse.** *Diabetes Research and Clinical Practice*, 174, 108756. DOI: 10.1016/j.diabres.2021.108756

RESEARCH EXPERIENCE

- **Privacy-Preserving Machine Learning and Cryptography Lab** Jul. 2025 - Present
Researcher Seoul, South Korea
 - Gained hands-on experience in privacy-preserving machine learning through early experiments with federated learning and homomorphic encryption.
 - Supervisor: [Prof. Eunsang Lee](#)
- **DS@GT Research Club** Sep. 2025 - Present
Georgia Institute of Technology Atlanta, GA, USA
 - Prepared 3 seminar slide decks on LifeCLEF-related research; attended weekly meetings with 40–50 participants and contributed to Q&A discussions to build collaborative research and presentation skills.
- **Course Project (CS 8803 O24 - Intro to Research)** May. 2025 - Jul. 2025
Georgia Institute of Technology Atlanta, GA, USA
 - Proposed a research study applying a Systematic Literature Review (SLR) to homomorphic encryption for privacy-preserving ML, outlining adoption barriers.
 - Gained experience in conducting an SLR and peer review through a collaborative group project and individual proposal feedback.
- **Seoul National University Bundang Hospital** Mar. 2018 - Mar. 2021
Part-time Research Assistant Gyeonggi-do, South Korea
 - Contributed to a publication in *Diabetes Research and Clinical Practice* on a standardized glucose–insulin–potassium infusion protocol by preprocessing and analyzing large-scale clinical datasets (7,000+ patients).
 - Performed an exploratory analysis of continuous glucose monitoring (CGM) data from 55 patients, evaluating data quality and patterns as a preliminary step toward identifying predictors of glycemic control.
 - Supervisor: [Prof. Tae-jung Oh](#)

PROFESSIONAL EXPERIENCE

- **Seoul National University Bundang Hospital** Jul. 2025 - Present
Part-time Research Administrative Assistant Gyeonggi-do, South Korea
 - Managed research administration tasks including payroll processing, publication fees, IRB review fees, and training expenses, ensuring accurate budgeting and compliance with institutional guidelines.
 - Provided on-demand data support for clinical research, including dataset cleaning, merging, and extraction from Electronic Medical Records (EMR), enabling timely analyses and manuscript preparation.
- **KB Kookmin Bank (concurrent with KB Financial Group)** Jul. 2020 - Sep. 2023
Data Analyst, Department of Data Planning Seoul, South Korea
 - Standardized customer data across 7 subsidiaries, organizing records into 8 domains and implementing retention/deletion rules, which improved cross-subsidiary integration and ensured full regulatory compliance.
 - Coordinated bi-monthly cross-subsidiary meetings with data managers to resolve data quality and integration issues, resulting in the cleanup of 20% legacy records and the refresh of 10% high-value datasets, improving reliability of the group database.
 - Delivered group-wide training (7 subsidiaries) and one-on-one coaching on data visualization and automation, improving digital adoption and reporting efficiency.
- **Croquis Inc. (Kakao Style / Zigzag)** Mar. 2018 - Apr. 2020
Junior Data Analyst, Department of Data Seoul, South Korea
 - Automated 17 ETL workflows on PySpark using Python and PySQL to standardize customer analysis criteria across teams, increasing data accuracy by 15% and improving reporting reliability.
 - Analyzed user and transaction data after launching an in-app payment system; improved recommendation algorithms and automated promotion reports, resulting in 23% higher sales (GMV) for early-adopting sellers compared to others.
 - Collaborated with PMs, designers, and engineers to define KPIs focused on expanding Top-100 seller participation (out of 400+ shops), and built Tableau/R-Shiny dashboards to track adoption and performance, supporting strategies to boost overall sales volume.
 - Delivered cross-team training in SQL and Tableau, enhancing organizational data literacy and enabling non-technical staff to use data in decision-making; this reduced the data team's workload by 7% through increased self-service capabilities.

CERTIFICATES & TRAINING

- **Seoul National University 4th Industrial Revolution Academy - Big Data Platform Technology** Jun. 2017 - Feb. 2018
Seoul National University Big Data Institute Seoul, South Korea
 - Completed intensive coursework in Python, SQL/DBMS, distributed systems, data mining, and machine learning/deep learning.
 - Conducted an exploratory study at Seoul National University Bundang Hospital on predictive factors from Continuous Glucose Monitoring (CGM) data, receiving weekly one-on-one mentorship from a professor in endocrinology as well as guidance from a computer science professor and PhD students, gaining early interdisciplinary research training.

SKILLS

- **Programming & Tools:** Python, PyTorch, R, SQL, PySpark, C/C++, Git, Docker, LaTeX
- **Machine Learning & Security:** Privacy-Preserving Machine Learning (Federated Learning, Homomorphic Encryption), Deep Learning, Statistical Modeling
- **Data Visualization:** Matplotlib, ggplot2, R-Shiny, Tableau

VOLUNTEER EXPERIENCE

- **ForCatMung Center** Sep. 2025 - Present
Volunteer Ansan, South Korea
 - Contributed to monthly shelter activities, including cleaning dog and cat kennels, walking dogs, and feeding animals, supporting the care and well-being of rescued pets.
- **2025 Animal Run Seoul** Oct. 2025
Participant Seoul, South Korea
 - Completed a 10 km charity run to raise awareness and donations for endangered animals.