Youngeun Nam

Post-Doctoral Researcher – KAIST

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RESEARCH INTERESTS

Data Quality Issues for Deep Learning / Data-Centric AI, Mobility and Stream Data Mining, Deep Learning-Based Big Data Analysis, Large-Scale Distributed Deep Learning / Agentic AI / Time Series

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST) **Daejeon, Korea**
Ph.D., Computer Science *Mar. 2022–Feb. 2026*
Advisor: Prof. Jae-Gil Lee

Korea Advanced Institute of Science and Technology (KAIST) **Daejeon, Korea**
M.S., Industrial and Systems Engineering, Graduate School of Data Science *Mar. 2020–Feb. 2020*
Advisor: Prof. Jae-Gil Lee

Pohang University of Science and Technology (POSTECH) **Pohang, Korea**
B.S., Industrial and Management Engineering *Mar. 2013–Feb. 2017*
Cum Laude

PROFESSIONAL EXPERIENCE

University of Toronto **Toronto, Canada**
Postdoctoral Fellow, Department of Mechanical and Industrial Engineering *May 2026–Apr. 2027*
Advisor: Prof. Eldan Cohen

KAIST **Daejeon, Korea**
Post-Doctoral Researcher, Information & Electronics Research Institute *Mar. 2026–present*
Advisor: Prof. Jae-Gil Lee

LG AI Research **Seoul, Korea**
Research Internship, Data Intelligence Lab *Sept. 2025–Feb. 2026*

Fitogether Inc. **Seoul, Korea**
Data Analyst, Data Analysis Team *Sep. 2018–Nov. 2019*

Hyundai Autoever **Seoul, Korea**
Software Engineer, Financial Operations Team *Jan. 2017–Dec. 2017*

AWARDS AND HONORS

- Outstanding Reviewer (top 10%), KDD February, 2025
- Outstanding Reviewer (top 10%), KDD August, 2025
- Excellence in Character Scholarship ($700), 2024
- Young-Han Kim Global Leader Scholarship ($2,800), 2024
- School of Computing, KAIST, Outstanding Teaching Assistant Award, 2023 Spring

- The Thirty-Seventh AAAI Conference on Artificial Intelligence Scholarship ($500), 2023
- Department of Industrial and Systems Engineering, KAIST, Scholarship ($700), 2021
- FIELD Silver Award, Future Industrial Engineering Leaders and Dreamers Camp, 2016

PUBLICATIONS

International Conference Proceedings (Peer Reviewed)

[1] Kim, J., Yoon, S., Le, X., **Nam, Y.**, Kim, D., Song, H., and Lee, J., "QuDAR: Query-Wise Dual-Perspective Adaptive Retrieval," *Proceedings of the Annual Meeting of the Association for Computational Linguistics* (*ACL*), San Diego, California, July 2026 (**top conference**, acceptance rate: 19.0%).

[2] **Nam, Y.***, Na, J.*, Yoon, S., Song, H., Lee, J., and Lee, B. S., "Bi-Modal Learning for Networked Time Series," *Proceedings of the 31st ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (*KDD*), Toronto, Canada, pp. 2162–2173, Aug. 2025 (**top conference**, acceptance rate: 18.4%).

[3] Na, J., **Nam, Y.**, Kang, J., and Lee, J., "Mitigating Source Label Dependency in Time-Series Domain Adaptation under Label Shifts," *Proceedings of the 31st ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (*KDD*), Toronto, Canada, pp. 2150–2161, Aug. 2025 (**top conference**, acceptance rate: 18.4%).

[4] Na, J.*, **Nam, Y.***, Yoon, S., Song, H., Lee, B. S., and Lee, J., "Mobility Networked Time-Series Forecasting Benchmark Datasets," *Proceedings of the 19th International AAAI Conference on Web and Social Media* (*ICWSM*), Copenhagen, Denmark, pp. 2539–2549, June 2025 (dataset track).

[5] Bae, M., Shin, Y., **Nam, Y.**, Lee, Y. S., and Lee, J., "Semi-Supervised Learning for Time Series Collected at a Low Sampling Rate," *Proceedings of the 30th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (*KDD*), Barcelona, Spain, pp. 59–70, Aug. 2024 (**top conference**, acceptance rate: 20.0%).

[6] **Nam, Y.**, Yoon, S., Shin, Y., Bae, M., Song, H., Lee, J., and Lee, B. S., "Breaking the Time-Frequency Granularity Discrepancy in Time-Series Anomaly Detection," *Proceedings of the ACM Web Conference* (*TheWebConf*), Singapore, Singapore, pp. 4204–4215, May 2024 (**top conference**, acceptance rate: 20.2%).

[7] **Nam, Y.**, Trirat P., Kim, T., Lee, Y., and Lee, J., "Context-Aware Deep Time-Series Decomposition for Anomaly Detection in Businesses," *Proceedings of European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases* (*ECML PKDD*), Torino, Italy, pp. 330–345, Sept. 2023 (applied data science track, acceptance rate: 24.3%).

[8] Trirat, P.*, **Nam, Y.***, Kim, T., and Lee, J., "AnoViz: A Visual Inspection Tool of Anomalies in Multivariate Time Series," *Proceedings of the 37th AAAI Conference on Artificial Intelligence* (*AAAI*), Washington, D.C., pp. 16488–16490, Feb. 2023 (**top conference**, demonstration program).

[9] Kim, D., Min, H., **Nam, Y.**, Song, H., Yoon, S., Kim, M., and Lee, J., "COVID-EENet: Predicting Fine-Grained Impact of COVID-19 on Local Economies," *Proceedings of the 36th AAAI Conference on Artificial Intelligence* (*AAAI*), Online, pp. 11971–11981, Feb. 2022 (**top conference**, oral presentation, acceptance rate: 15.0%).

[10] Kim, M., Kang, J., Kim, D., Song, H., Min, H., **Nam, Y.**, Park, D. Lee, J., "Hi-COVIDNet: Deep Learning Approach to Predict Inbound COVID-19 Patients and Case Study in South Korea," *Proceedings of the 26th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (*KDD*), Online, pp. 3466–3473, Aug. 2020 (**top conference**, AI for COVID track).

Domestic Conference Proceedings (Peer Reviewed)

[1] Shin, H., Kang, J., Akbar, I., Choi, S., **Nam, Y.**, Lee, J., "An Empirical Investigation of Deep Learning Models for Defect Classification in Solar Cells Electroluminescence," *Korea Computer Congress*, pp. 608–610, June 2023.

[2] Kim, T., Bae, M., Jung, H., **Nam, Y.**, Shin, Y., Min, H., "User-Adaptive Ranking System on Mobile Trading Applications," *Korea Computer Congress*, pp. 1459–1461, June 2022.

[3] Na, J., Kang, J., Bae, M., **Nam, Y.**, Lee, J., "Vessel Trajectory Periodic Pattern Mining by Using AIS Data," *Korea Computer Congress*, pp. 111–113, Dec. 2021.

[4] **Nam, Y.**, Kang, J., Lee, J., "ActiveBoostThief: Model Extraction Attack Using Reliable Active Learning," *Korea Computer Congress*, pp. 594–596, June 2021.

International Journals (Peer Reviewed)

[1] Trirat, P., Shin, Y., Kang, J., **Nam, Y.**, Na, J., Bae, M., Kim, J., Kim, B., Lee, J., "Universal Time-Series Representation Learning: A Survey," *Under review at ACM Computing Surveys*.

Patents

[1] Lee, J., Kim, D., Min, H., **Nam, Y.**, Song, H., Yoon, S., and Kim, M., "Apparatus and Method for Predicting Economic Impact of Mass Infections Based on Deep Neural Networks," Korean Patent No: 10-2583776-0000, Sept. 22, 2023.

[2] Lee, J., Kim, M., Kang, J., Kim, D., Song, H., Min, H., **Nam, Y.**, and Park, D., "Method and Apparatus for Predicting Imported Infectious Disease Information Based on Deep Neural Networks," U.S. Patent No: US11557401 B2, Jan. 17, 2023.

[3] Lee, J., Kim, M., Kang, J., Kim, D., Song, H., Min, H., **Nam, Y.**, and Park, D., "Method and Apparatus for Predicting Confirmed Patients of Infectious Disease Based on Deep Neural Networks," Korean Patent No: 10-2349270-0000, Jan. 5, 2022.

RESEARCH GRANTS

[SW Star Lab] DB4DL: High-Usability and Performance In-Memory Distributed DBMS for Deep Learning:
Ministry of Science and ICT *Apr. 1, 2020–Dec. 31, 2027*
Participant Total: 2M USD
We are developing an in-memory distributed DBMS in support of deep learning, focusing on data preparation (preprocessing) technologies in the first stage and distributed deep-learning technologies in the second stage.

Robust, Fair, Extensible Data-Centric Continual Learning:
Ministry of Science and ICT *Apr. 1, 2022–Dec. 31, 2026*
Participant Total: 4M USD
We are developing continual learning (lifelong learning) methodologies which are robust to data noise, fair to data bias, and extensible to graph data, in support of data-centric AI. This project is conducted by four KAIST professors and SIA.

Research on Core Technologies for Crowd Management Systems Using AI and Mobility Big Data:
National Research Foundation of Korea (NRF) *Mar. 1, 2023–Feb. 28, 2026*
Participant Total: 400K USD
We are developing core technologies for crowd management systems, which can quickly identify anomaly situations from vast amount of cellular network data.

Online Deep Learning Technology for Anomaly Detection from Sensor Stream Big Data:
Samsung Electronics Co., Ltd. *Sept. 16, 2020–Sept. 15, 2025*
Participant Total: 300K USD
We developed various algorithms for discovering outliers in big-data sensor streams, which exploit online deep learning methodologies for evolving data streams.

Real-time Service Incident Prediction:
Samsung Electronics Co., Ltd. *July 1, 2021–July 30, 2023*
Participant Total: 100K USD
We developed an algorithm of predicting and recognizing real-time service incidents thorough real-time multivariate time-series forecasting and anomaly detection.

Development of a Platform for Game-based Athlete Bio and Position Data Collection and Analytics:
Ministry of Trade, Industry and Resources (Korea) *Jan. 1, 2020–Dec. 31, 2020*
Participant Total: 334K USD
We developed a wearable-based sports analytics platform for real-time collection and analysis of athletes' positional and physiological data (e.g., GPS and heart rate), supporting performance evaluation and data-driven sports operations.

Wearable–Vision Fusion Sports Data Analytics IoT Platform Development:
Ministry of SMEs and Startups (Korea) *Oct. 1, 2019–Sep. 30, 2020*
Participant Total: 362K USD
We developed an IoT-based sports analytics platform integrating wearable sensor data and multi-camera video streams to enable real-time player tracking, automated camera control, and event-driven performance analysis in soccer.

AI-based Sports Big Data Analytics Algorithms and Core Technology Development:
Ministry of SMEs and Startups (Korea) *June 1, 2019–May 31, 2020*
Participant Total: 88.8K USD
We developed AI-based sports big data analytics algorithms for soccer, including automated match situation recognition, training intensity and fatigue diagnosis using GPS/IMU data, tactical performance evaluation, and injury risk prediction.

ACADEMIC SERVICE

Program Committee Member:

- Artificial Intelligence and Statistics (AISTATS), *2025*
- International Conference on Learning Representations (ICLR), *2025, 2026*
- Asian Conference on Machine Learning (ACML), *2024*
- Conference on Neural Information Processing Systems (NeurIPS) Datasets and Benchmarks, *2025*
- Conference on Neural Information Processing Systems (NeurIPS), *2024*
- ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), *2024, 2025 Aug., 2025 Feb., 2026 Feb.*
- ACM International World Wide Web Conference (TheWebConf), *2024, 2025*

ACADEMIC EXPERIENCE

Teaching Assistant

KAIST
[*CS584*] *Human-Computer Interaction* *Sep. 2024–Dec. 2024*
Advisor: Prof. Geehyuk Lee

KAIST
[*CS360*] *Introduction to Database* *Sep. 2023–Dec. 2023*
Advisor: Prof. Jae-Gil Lee

KAIST
[*CS564*] *Data Science Methodology,* ***Outstanding Teaching Assistant Award*** *Mar. 2023–June 2023*
Advisor: Prof. Jae-Gil Lee

KAIST
[*CS564*] *Data Science Methodology* *Sep. 2022–Dec. 2022*
Advisor: Prof. Jae-Gil Lee

KAIST
[*CS492(D)*] *Special Topics in Computer Science<Introduction to Data Science>* *Mar. 2022–June 2022*
Advisor: Prof. Jae-Gil Lee

Research Internship

Seoul National University (SNU) **Seoul, Korea**
Data Mining Lab *June 2018–Aug. 2018*
Advisor: Prof. Sungzoon Cho

Pohang University of Science and Technology (POSTECH) **Pohang, Korea**
Experience Design & Engineering Lab *Sep. 2015–Dec. 2015*
Advisor: Prof. Sungho Han

Activities

POSTECH **Pohang, Korea**
Management Strategy Student Association (MSSA) *Sep. 2014–Dec. 2016*
Sponsor: 3M Korea, POSCO

Korea University **Seoul, Korea**
Future Industrial Engineering Leaders and Dreamers (FIELD Camp) *Aug. 2014*
Silver Award in Competition

KAIST **Daejeon, Korea**
International Conference for the Integration of Science, Technology and Society *Aug. 2014*
ICIST-KAIST Delegates