

YOUNG JIN PARK

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ABOUT ME

I build more **reliable and efficient AI** systems at scale. From robotics to recommender systems to LLMs, I've consistently tackled each era's most critical challenges with cutting-edge solutions. Currently pursuing my PhD at MIT while leveraging **4+ years** of experience deploying **billion-scale** models at **Meta** and **NAVER**, specialized in translating cutting-edge research into high-impact product. My broader PhD work centers on quantifying instance-level reliability in foundation models to understand what models are truly confident about.

RESEARCH FOCUS

AREAS: World Modeling, End-to-End Autonomy, Large Reasoning Models, AI Safety & Alignment, Personalization
TOPICS: Uncertainty Quantification, Sequential Decision Making, Inference-time Scaling, Reward Modeling

TECHNICAL SKILLS

DEEP LEARNING: Transformers (LLMs, VLMs), Model Calibration, Reinforcement Learning, Time-Series
ENGINEERING: Systems (vLLM, TRL, Distributed Training), SQL (Hive, Presto, Spark), Workflow Orch. (Airflow)

PROFESSIONAL EXPERIENCE

Research Engineer @ NAVER AI LAB | CLOVA Seongnam-si, Korea
Developed and deployed enterprise AI systems for Asia's top-tier companies including Feb 2019 – Aug 2022
NAVER, LINE, and CJ Logistics. Delivered production solutions for recommendation and demand forecasting systems serving millions of daily users.

ADDITIONAL INDUSTRY RESEARCH EXPERIENCE

ML SWE Intern @ META Menlo Park, CA
Designed LLM features for Instagram ads; offline evaluation showed +0.03% CTR uplift. May 2025 – Aug 2025

Visiting Student Researcher @ MIT-IBM WATSON AI LAB Cambridge, MA
Improved test-time scaling efficiency for LLM reasoning via reward model calibration. Mar 2024 – May 2025
Developed uncertainty quantification tools for pre-trained embedding models.

Research Intern @ MITSUBISHI ELECTRIC RESEARCH LABORATORIES (MERL) Cambridge, MA
Developed time-series foundation models for complex temporal dynamics. May 2024 – Aug 2024

EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT) Cambridge, MA
Ph.D. Candidate in Mechanical Eng. (Focus: Machine Learning, GPA: 5.0/5.0) Sept. 2022 – May 2026

KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY (KAIST) Daejeon, Korea
M.S. in Aerospace Eng. (Focus: Machine Learning, GPA: 4.12/4.3) Feb. 2017 – Feb. 2019

KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY (KAIST) Daejeon, Korea
B.S. in Aerospace Eng. & Mathematical Sciences (GPA: 4.03/4.3) Mar. 2013 – Feb. 2017

SELECTED HONORS & AWARD

Wunsch Foundation Award for excellence in a graduate student | Dept. of MechE., MIT July 2024

Daishin Songchon Foundation Scholarship Feb. 2023

Best Poster Awards | NeurIPS ICBINB Workshop Dec. 20220

M.S. Outstanding Paper Award | Dept. of Aerospace Engineering, KAIST Oct. 2019

KAIST Presidential Fellowship – Awarded to the top 10 students of the Class of 2017 Mar. 2013

PUBLICATIONS | Full publication list available at [Google Scholar]

*Authors contributed equally.

Selected Publications

1. **Know What You Don't Know: Uncertainty Calibration of Process Reward Models** ([paper](#), [slides](#), [project](#))
Y.J. Park, K. Greenewald, K. Alim, H. Wang, and N. Azizan.
In *Neural Information Processing Systems (NeurIPS)*, 2025.
2. **Test-Time Scaling in Clinical Decision Making: An Empirical and Analytical Investigation** ([paper](#))
J.Y. Byun, Y.J. Park, N. Azizan, and R. Chellappa.
In *Medical Imaging with Deep Learning (MIDL)*.
3. **Quantifying Representation Reliability in Self-Supervised Learning Models** ([paper](#), [slides](#), [poster](#))
Y.J. Park, H. Wang, S. Ardeshir, and N. Azizan.
In *Conference on Uncertainty in Artificial Intelligence (UAI)*, 2024. [Spotlight @ 2023 RSS Workshop]
4. **A Large-Scale Ensemble Learning Framework for Demand Forecasting** ([paper](#), [slides](#))
Y.J. Park, D. Kim, F. Odermatt, J. Lee, and K.M. Kim.
In *IEEE International Conference on Data Mining (ICDM)*, 2022. [Oral Presentation]
5. **Distilling a Hierarchical Policy for Planning & Control via Representation and Reinforcement Learning** ([paper](#))
J.S. Ha*, Y.J. Park*, H.J. Chae, S.S. Park, and H.L. Choi.
In *IEEE International Conference on Robotics and Automation (ICRA)*, 2021.

Additional Publications

6. **Uncertainty-Aware Meta-Learning for Analytically Tractable Posterior** ([paper](#))
Y.J. Park*, C. Almecija*, A. Sharma, and N. Azizan
In *Conference on Artificial Intelligence and Statistics (AISTATS)*, 2026.
7. **Distributional Process Reward Models: Calibrated Prediction of Future Rewards via Conditional Optimal Transport**
R. Ma, Y.J. Park, D. Hadfield-Menell, K. Greenewald.
In *International Conference on Machine Learning (ICML)*, 2026, under review.
8. **Quantifying the Reliability of Predictions in Detection Transformers** ([paper](#), [slides](#))
Y.J. Park*, C. Sobolewski*, and N. Azizan.
IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2025, in revision.
9. **Probabilistic Forecasting for Building Energy Systems using Time-Series Foundation Models** ([paper](#))
Y.J. Park, F. Germain, J. Liu, Y. Wang, T. Akino, G. Wichern, N. Azizan, C. Laughman, and A. Chakrabarty.
Energy and Buildings, 2025.
10. **Online Gaussian Process SSM: Learning and Planning for Partially Observable Dynamical Systems** ([paper](#))
S.S. Park, Y.J. Park, Y. Min, and H.L. Choi.
International Journal of Control, Automation and Systems, 2022.
11. **Interpretable Unsupervised Learning of Nonparametric SSM for Multi-modal Dynamics** ([paper](#))
Y.J. Park, S.S. Park, and H.L. Choi.
Journal of Aerospace Information Systems, 2021.
12. **A Neural Process Approach for Probabilistic Reconstruction of No-Data Gaps in Lunar DEMs** ([paper](#))
Y.J. Park, and H.L. Choi.
Aerospace Science and Technology, 2021.
13. **Tripartite heterogeneous graph propagation for large-scale social recommendation** ([paper](#))
K.M. Kim*, D. Kwak*, H. Kwak*, Y.J. Park*, S. Sim, J.H. Cho, M. Kim, J. Kwon, N. Sung, and J.W Ha.
In *ACM Recommender Systems (RecSys), Late-Breaking Results*, 2019
14. **Adaptive Path-Integral Autoencoders: Representation Learning and Planning for Dyn. Sys.** ([paper](#), [video](#))
J.S. Ha, Y.J. Park, H.J. Chae, S.S. Park, and H.L. Choi.
In *Neural Information Processing Systems (NeurIPS)*, 2018.

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15. **Deep Gaussian Process-Based Bayesian Inference for Contaminant Source Localization** ([paper](#))
Y.J. Park, P.M. Tagade, and H.L. Choi.
IEEE Access, 2018.
16. **Efficient Sensor Network Planning Method using Approximate Potential Game** ([paper](#))
S.J. Lee, Y.J. Park, and H.L. Choi.
International Journal of Distributed Sensor Networks, 2018.
- Technical Reports and Workshop Papers
17. **One4all User Representation for Recommender Systems in E-commerce** ([paper](#))
K. Shin, H. Kwak K.M. Kim, M. Kim, Y.J. Park, J. Jeong, and S. Jung
18. **Adaptive Memory using Dynamic Graph Networks for Staleness Problem in RecSys** ([paper](#))
I.J. Kwon, K.M. Kim, J. Jeong, K. Shin, Y.J. Park, and B.T. Zhang.
In *Knowledge Discovery and Data mining (KDD), Workshop on OARS*, 2021. [Spotlight]
19. **A Worrying Analysis of Probabilistic Time-series Models for Sales Forecasting** ([paper](#))
S. Jung*, K.M. Kim*, H. Kwak*, and Y.J. Park*.
In *Neural Information Processing Systems (NeurIPS), ICBINB Workshop, PMLR*, 2020. [Best Poster Awards]
20. **VQ-AR: Vector Quantized Autoregressive Probabilistic Time Series Forecasting** ([paper](#))
K. Rasul, Y.J. Park, M. Ramström, and K.M. Kim.
21. **Hop Sampling: A Simple Regularized Graph Learning for Non-Stationary Environments** ([paper](#))
Y.J. Park, K. Shin, and K.M. Kim.
In *Knowledge Discovery and Data mining (KDD), Workshop on MLG*, 2020.
22. **Multi-Manifold Learning for Large-scale Targeted Advertising System** ([paper](#))
K. Shin, Y.J. Park, and K.M. Kim.
In *Knowledge Discovery and Data mining (KDD), AdKDD Workshop*, 2020.
23. **div2vec: Diversity-Emphasized Node Embedding** ([paper](#))
J. Jeong, J.M. Yun, H. Keam, Y.J. Park, Z. Park, and J. Cho.
In *ACM Recommender Systems (RecSys), Workshop on the IRS*, 2020.

SELECTED PRESENTATIONS

@Red Hat AI: <i>Instance-Adaptive Inference-Time Scaling</i>	Oct. 2025
@Meta: <i>Uncertainty Calibration of Process Reward Models</i>	July 2025
@MERL: <i>Towards Time-Series Foundation Models for Modeling Building Disturbance Inputs</i>	Aug. 2024
@MIT-IBM Watson AI Lab: <i>Representation Reliability and Its Impact on Downstream Tasks</i>	June 2023
@NAVER DEVVIEW 2021: <i>The secrets Behind NAVER's Demand Forecasting: HyperCLOVA</i>	Nov. 2021

MENTORSHIP

- Mihika Dusad | Massachusetts Institute of Technology (undergraduate researcher at MIT), 2025
· *Project: LLM inference-time scaling leveraging model uncertainty and reward models.*
- Addison Kristanto Julistiono | Massachusetts Institute of Technology (MEng student at MIT), 2025
· *Project: Ensemble-free Quantification for Representation Reliability*
- Carson Sobolewski | University of Florida (summer intern at MIT), 2024
· *Project: Uncertainty quantification in object detection Transformer (a paper is in revision at IEEE TPAMI).*
- Frédéric Odermatt (ETH Zürich MSc, intern at NAVER CLOVA), 2021-2022
· *Project: A large-scale deep forecasting models (published a paper in ICDM 2022).*
- Donghyun Kim (Seoul National University, intern at NAVER CLOVA), 2021-2022
· *Project: An ensemble framework for demand forecasting (published a paper in ICDM 2022).*