

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 NAVER, LINE, and CJ Logistics. Delivered production solutions for recommendation and demand forecasting systems serving millions of daily users.	Feb 2019 – Aug 2022

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. Developed uncertainty quantification tools for pre-trained embedding models.	Mar 2024 – May 2025
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

*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.

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