YOUNG JIN PARK

Cambridge, MA (02139) • yjpark0105@gmail.com
https://www.linkedin.com/in/young-j-park

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
Engineered an LLM2Vec pipeline with lightweight Llama models, yielding a statistically significant 0.03% CTR uplift for Instagram ads in offline evaluations. — 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

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**), 2026.*
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. **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.
8. **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.
9. **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.
10. **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.
11. 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.
12. **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
13. **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.
14. **Deep Gaussian Process-Based Bayesian Inference for Contaminant Source Localization** (paper)
    Y.J. Park, P.M. Tagade, and H.L. Choi.

IEEE Access, 2018.

15. **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

16. **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
17. **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]
18. **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]
19. **VQ-AR: Vector Quantized Autoregressive Probabilistic Time Series Forecasting** (paper)
    K. Rasul, Y.J. Park, M. Ramström, and K.M. Kim.
20. **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.
21. **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.
22. **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: *Instance-Adaptive Inference-Time Scaling*	Oct. 2025
@Meta: *Uncertainty Calibration of Process Reward Models*	July 2025
@MERL: *Towards Time-Series Foundation Models for Modeling Building Disturbance Inputs*	Aug. 2024
@MIT-IBM Watson AI Lab: *Representation Reliability and Its Impact on Downstream Tasks*	June 2023
@NAVER DEVIEW 2021: *The secrets Behind NAVER's Demand Forecasting: HyperCLOVA*	Nov. 2021

MENTORSHIP

Kai Yun | Massachusetts Institute of Technology (PhD student at MIT), 2026
- *Project: Reasoning Vision-Language-Action Models for Generalizable Autonomous Driving*

Mihika Dusad | Massachusetts Institute of Technology (undergraduate researcher at MIT), 2025
- *Project: Efficient LLM Post-Training 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 (a paper will be submitted to JMLR).*

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).*