Youngsuk Park

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Education

Ph.D. Electrical Engineering, Stanford University, 2020.
— Advisors: Stephen P. Boyd and Jure Leskovec.
— Dissertation: Topics in Convex Optimization for Machine Learning.

M.S. Electrical Engineering, Stanford University, 2016.

B.S. Summa Cum Laude. Electrical Engineering (Major) and Mathematics (Minor), KAIST, 2013.

Employment

Machine Learning Scientist, Amazon Web Service (AWS) AI Labs, Jun. 2020 – present.
— Time series forecasting in topics of uncertainty quantification, robustness, domain adaptaion, representation learning, causality and explainability.
— Product delivery to Amazon Forecast as co-owners with engineering/PM teams.
— Organizer of science group seminars across forecasting, anomaly detection, and labor planing teams.

Research Intern, Adobe Research, Jun.–Sept. 2019.
— Reinforcement learning for continuous space tasks with cloud resource management application.

Research Intern, Criteo Artificial Intelligence Lab, Jun.–Sept. 2018.
— Off-policy reinforcement learning with applications in advertisement recommendation system.

Research Intern, Bosch Center for Artificial Intelligence, Jun.–Sept. 2017.
— Diagonal spectral stepsize selection for solving machine learning problems.

Research Interest

Machine Learning, Time-series, Optimization, Explainability, Robustness, and Decision making.

Publications

Preprints under Review

1. X. Jin, **Y. Park**, Y. Wang, D. Robinson. Domain Adaptation for Time Series Forecasting via Attention Sharing. Under review.
2. A. Jambulapati, **Y. Park**, H. Hassan, Y. Wang. Temporal-consistent Optimal Transport for Time Series Alignment. Under review.
3. A. Jambulapati, H. Hassan, **Y. Park**, Y. Wang. Testing Causality of High-Dimensional Gaussians.. Under review.

Refereed Journals and Conference Proceedings

4. **Y. Park**, D. Robinson, Y. Wang, J. Gasthaus. Learning Quantile Functions without Quantile Crossing for Distribution-free Time Series Forecasting. *Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2022.

5. T. Yoon, **Y. Park**, Y. Wang. Robust Probabilistic Forecasting via Randomized Smoothing. *Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2022.

6. K. Kan, F. Aubet, T. Januschowski, **Y. Park** K. Bendis, J. Gasthaus. Multivariate Quantile Functions for Forecasting. *Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2022. **Selected as an oral, 2.6% of all submissions.**

7. Y. Lu, **Y. Park**, L. Cheng, Y. Wang, D. Foster. Variance Reduced Training with Stratified Sampling for Forecasting Models. *Proceedings of International Conference on Machine Learning (ICML)*, 2021.

8. **Y. Park**, R. Rossi, Z. Wen, G. Wu, H. Zhao. Structured Policy Iteration for Linear Quadratic Regulator. *Proceedings of International Conference on Machine Learning (ICML)*, 2020.

9. J. Kim, **Y. Park**, J. Fox, S. Boyd, W. Dally. Optimal Operation of a Plug-in Hybrid Vehicle with Battery Thermal and Degradation Model. *Proceedings of the American Control Conference (ACC)*, 2020.

10. **Y. Park**, S. Dhar, S. Boyd, M. Shah. Variable Metric Proximal Gradient Method with Diagonal Barzilai-Borwien Stepsize. *Proceedings of International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2020.

11. **Y. Park**, E. K. Ryu. Linear Convergence of Cyclic SAGA. *Optimization Letters*, 2020.

12. **Y. Park**, K. Mahadik, R. Rossi, G. Wu, H. Zhao. Linear Quadratic Regulator for Resource-Efficient Cloud Services. *Proceedings of ACM Symposium on Cloud Computing (SOCC)*, 2019.

13. **Y. Park**, D. Hallac, S. Boyd, J. Leskovec. Learning the Network Structure of Heterogeneous Data via Pairwise Exponential Markov Random Fields. *Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2017.

14. D. Hallac, **Y. Park**, S. Boyd, J. Leskovec. Inferring Time Varying Networks via Graphical Lasso. *Proceedings of ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2017.

Working Papers

15. H. Maei, **Y. Park**. Convergent Actor-Critic under Off-policy and Function Approximation. In preparation.

16. S. Gupta, **Y. Park**, Y. Wang. Causal Discovery via Time Varying Graphical Lasso. Working draft.

Teaching Experience

Head TA, Convex Optimization II, Winter 2015. Stanford.

Guest lecturer, Convex Optimization II, Winter 2015. Stanford.

Talks and Seminars

2020 School of Data Science, Seoul National University (SNU), S. Korea
2020 Amazon Web Service (AWS) AI Labs, Palo Alto
2020 Facebook AI, Menlo Park
2020 Rakuten Research, San Mateo
2019 Adobe Research, San Jose
2019 Hyundai AI Labs, Seoul, Korea
2018 Hyundai Global Forum, San Diego
2017 Kakao Brain, Bundang, Korea
2017 Bosch AI, Palo Alto

Open-source Software & Code

GluonTS: Probabilistic Time Series Modeling in Python
SnapVX: Python-based Convex Optimization Solver for Problems Defined on Graphs
TVGL: Time-series Analysis via Time Varying Graphical Lasso
PEMRF: Graphical Structure Inference via Pairwise Expoential Markov Random Field

Professional Service

Reviewer *Neural Information Processing Systems (NeurIPS), International Conference on Machine Learning (ICML), International Conference on Artificial Intelligence and Statistics (AISTATS), International Conference on Representation Learning (ICLR),Journal of Machine Learning Research (JMLR), SIAM Journalon Mathematics of Data Science (SIMODS), Neural Processing Letter (NEPL), Journal of Artificial Intelligence Research (JAIR), Journal of Scientific Computing (JOSC).*

Community President of Korean Electrical Engineering Association at Stanford, Member of Korean Gates Society at Stanford, Committee of Stanford-KAIST-Silicon Valley Association

Honors & Awards

Best Presenter Award in Artificial Intelligence Session, Hyundai Global Forum, 2018.

Kwanjeong Graduate Fellowship, 2013–2015.

Fulbright Graduate Fellowship (Declined), 2013.

National Science and Engineering Scholarship, KOSAF, 2006–2009.

Department Merit-based Scholarship, KAIST, 2007–2009.

List of Collaborators

Academia

Stephen P. Boyd, Professor (Department Chair), Electrical Engineering, Stanford
Jure Leskovec, Associate Professor (Chief Scientist at Pinterest), Computer Science, Stanford
Tsachy Weissman, Professor, Electrical Engineering, Stanford
Michael Saunders, Research Professor, Computational Mathematical Engineering, Stanford
Ernest K. Ryu, Assistant Professor, Mathematics, Seoul National University
Hongseok Namkoong, Assistant Professor, Decision, Risk, and Operations, Columbia B School

Industry

Yuyang Wang, Principal Applied Scientist, AWS
Dean Foster, Senior Principal Applied Scientist, Amazon
Dominik Janzing, Principal Applied Scientist, AWS
Suju Rajan, Senior Director, LinkedIn
Mohak Shah, Vice President, LG Electronics North America
Zheng Wen, Research Scientist, Google Deepmind