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 with explainability, causality, and sequential decision making.

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 Scientist, Stanford InfoLab, Jan.– Aug. 2016.
— Event detection and information retrieval from time-series data (DARPA project)

Research Interest

Optimization, Machine Learning, Time-series Analysis, Reinforcement Learning and Decision making.

Publications

Preprints under Review

1. X. Jin, **Y. Park**, Y. Wang, D, Robinson. Attention-based Domain Adaption for Time Series Forecasting. Under review in *International Conference on Machine Learning (ICML), 2021.*

2. Y. Lu, **Y. Park**, L. Cheng, Y. Wang, D. Foster. Variance Reduction in Training Forecasting Models with Subgroup Sampling. Under review in *International Conference on Machine Learning (ICML), 2021.*

Refereed Journals and Conference Proceedings

3. **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.

4. 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.

5. **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.

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

7. **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.

8. **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.

9. 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

10. **Y. Park**, Y. Wang, D, Robinson. Learning the Quantile Function without Quantile Crossing: Regret Analysis and Forecasting Applications. In preparation to submit in *Neural Information Processing Systems (NeurIPS)*.

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

12. J. Kim, **Y. Park**, J. Fox, S. Boyd, W. Dally. Multi-Forecast Model Predictive Control of Plug-in Hybrid Vehicle with Battery Model. In preparation.

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

Professional Service

Reviewer *Neural Information Processing Systems (NeurIPS), International Conference on Machine Learning and Applications (ICMLA) , Optimization Letter, 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
Bill Dally, Professor (Senior Vice President at Nvidia), Electrical Engineering, Stanford

Industry

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