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

Applied Scientist II, Amazon Web Service (AWS) AI Labs, Jun. 2020 – present.
— Time-series forecasting, sequential decision making, reinforcement learning.

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 Optimal Control.

Publications

Refereed Journals and Conference Proceedings

1. **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.

2. 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.

3. **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.

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

5. **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.

6. **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.

7. 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

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

9. **Y. Park**, M. Zitnik, J. Leskovec, S. Boyd. Structured Neural Network for Learning Undirected Graphical Models. In preparation.

10. 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	Amazon (AWS) AI Labs, Palo Alto
2020	Facebook AI, Menlo Park
2020	Rakuten Research, San Mateo
2019	Adobe Research, San Jose
2019	Hyundai AI Lab, Seoul, Korea
2018	Hyundai Global Forum, San Diego
2017	Kakao Brain, Bundang, Korea
2017	Bosch AI, Palo Alto

Open-source Software & Code

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).*

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.

Relevant Coursework

Machine Learning Artificial Intelligence: Principles and Techniques, Machine Learning, Statistical Learning Theory, Reinforcement Learning, Dynamic Programming and Optimal Control

Optimization Convex Optimization I, Convex Optimization II, Introduction to Optimization Theory, Large-scale Numerical Optimization, Numerical Linear Algebra

Information Theory Information Theory, Universal Schemes in Information Theory, Network Information Theory, Information Theory and Statistics.

Statistics/Mathematics Theory of Probability I, Theory of Statistics II, Real Analysis I & II, Lebesgue Integral, Differential Geometry.

List of Collaborators

Stephen P. Boyd, Professor (Department Chair), Electrical Engineering, Stanford University

Jure Leskovec, Associate Professor (Chief Scientist at Pinterest), Computer Science, Stanford University

Tsachy Weissman, Professor, Electrical Engineering, Stanford University

Michael Saunders, Research Professor, Computational Mathematical Engineering, Stanford University

John Fox, Adjunct Professor, Applied Physics, Stanford University

Ernest K. Ryu, Assistant Professor, Mathematics, Seoul National University

Marinka Zitnik, Assistant Professor, Biomedical Informatics, Harvard University

Bill Dally, Professor (Senior Vice President at Nvidia), Electrical Engineering, Stanford University

Suju Rajan, Senior Director, LinkedIn

Mohak Shah, Vice President, LG Electronics North America

Zheng Wen, Research Scientist, Deepmind Google