

Haipeng Luo

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Computer Science Department
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RESEARCH INTEREST

Developing practical machine learning algorithms with strong theoretical guarantees, with a focus on online decision making, bandit problems, interactive machine learning, optimization and so on.

EXPERIENCE

07/2017~present Assistant Professor, Computer Science Department, University of Southern California
07/2016~06/2017 Postdoctoral Researcher, Microsoft Research, NYC
03/2016~04/2016 Visiting student, CWI (Centrum Wiskunde & Informatica), Amsterdam
06/2015~08/2015 Research intern, Microsoft Research, NYC
06/2014~08/2014 Research intern, Yahoo Labs, NYC
06/2013~08/2013 Research intern, AT&T Labs, San Francisco

EDUCATION

2011~2016 PhD, Department of Computer Science, Princeton University
Advisor: Robert Schapire Thesis: Optimal and Adaptive Online Learning
M.A. received in 09/2013
2007~2011 B.S., Department of Computer Science, Peking University (double major in Mathematics)

AWARDS

Best student paper award, COLT 2018 (with Dylan Foster, Satyen Kale, Mehryar Mohri, Karthik Sridharan).
Best paper award, NIPS 2015 (with Vasilis Syrgkanis, Alekh Agarwal and Robert E. Schapire).
Best paper award, ICML 2015 (with Alina Beygelzimer and Satyen Kale).
Wu Prize for Excellence, 2015 (awarded to engineering students who have performed at the highest level).
Google Spotlight Presentation Awards, Annual Machine Learning Symposium, 2014, 2015, 2017.
ACM Doctoral Dissertation Award Nominee (one per institution).
Symantec Fellowship finalist, 2015.
Tung OOCL Scholarship, 2010.
Suzhou Industrial Park Scholarship, 2009.
May Fourth Scholarship, 2008.
Silver Medal, 33rd ACM International Collegiate Programming Contest, Asia Regional, 2008.
Bronze Medal, ACM International Collegiate Programming Contest, Beijing Sub-regional, 2008.

GRANTS

NSF CISE Research Initiation Initiative (CRII), 2018.

PUBLICATIONS

Sébastien Bubeck, Yuanzhi Li, Haipeng Luo, Chen-Yu Wei

Improved Path-length Regret bounds for Bandits.

To appear in the 32nd Conference on Learning Theory (COLT 2019).

Yifang Chen, Chung-Wei Lee, Haipeng Luo, Chen-Yu Wei

A New Algorithm for Non-stationary Contextual Bandits: Efficient, Optimal, and Parameter-free.

To appear in the 32nd Conference on Learning Theory (COLT 2019).

Julian Zimmert, Haipeng Luo, Chen-Yu Wei

Beating Stochastic and Adversarial Semi-Bandits Optimally and Simultaneously.

To appear in the 36th International Conference on Machine Learning (ICML 2019).

Haipeng Luo, Chen-Yu Wei and Kai Zheng.

Efficient Online Portfolio with Logarithmic Regret.

In Advances in Neural Information Processing Systems 31 (NeurIPS 2018).

Chen-Yu Wei and Haipeng Luo.

More Adaptive Algorithms for Adversarial Bandits.

In Proceedings of the 31st Conference on Learning Theory (COLT 2018).

Haipeng Luo, Chen-Yu Wei, Alekh Agarwal and John Langford.

Efficient Contextual Bandits in Non-stationary Worlds.

In Proceedings of the 31st Conference on Learning Theory (COLT 2018).

Dylan J. Foster, Satyen Kale, Haipeng Luo, Mehryar Mohri and Karthik Sridharan

Logistic Regression: The Importance of Being Improper.

In Proceedings of the 31st Conference on Learning Theory (COLT 2018). *Best Student Paper Award.*

Dylan J. Foster, Alekh Agarwal, Miroslav Dudik, Haipeng Luo and Robert E. Schapire

Practical Contextual Bandits with Regression Oracles.

In Proceedings of the 35th International Conference on Machine Learning (ICML 2018).

Alekh Agarwal, Haipeng Luo, Behnam Neyshabur and Robert E. Schapire.

Corralling a Band of Bandit Algorithms.

In Proceedings of the 30th Conference on Learning Theory (COLT 2017).

Miroslav Dudik, Nika Haghtalab, Haipeng Luo, Robert E. Schapire, Vasilis Syrgkanis and Jennifer Wortman Vaughan.

Oracle-Efficient Online Learning and Auction Design.

In the 58th Annual Symposium on Foundations of Computer Science (FOCS 2017).

Alekh Agarwal, Akshay Krishnamurthy, John Langford, Haipeng Luo and Robert E. Schapire.

Open Problem: First-Order Regret Bounds for Contextual Bandits.

In Proceedings of the 30th Conference on Learning Theory (COLT 2017).

Haipeng Luo, Alekh Agarwal, Nicolò Cesa-Bianchi and John Langford.

Efficient Second Order Online Learning via Sketching.

In Advances in Neural Information Processing Systems 29 (NIPS 2016).

Vasilis Syrgkanis, Haipeng Luo, Akshay Krishnamurthy and Robert E. Schapire.

Improved Regret Bounds for Oracle-Based Adversarial Contextual Bandits.

In Advances in Neural Information Processing Systems 29 (NIPS 2016).

Elad Hazan and Haipeng Luo.

Variance-Reduced and Projection-Free Stochastic Optimization.

In Proceedings of the 33rd International Conference on Machine Learning (ICML 2016).

Vasilis Syrgkanis, Alekh Agarwal, Haipeng Luo and Robert E. Schapire.

Fast Convergence of Regularized Learning in Games.

In Advances in Neural Information Processing Systems 28 (NIPS 2015). ***Best Paper Award.***

Alina Beygelzimer, Satyen Kale and Haipeng Luo

Optimal and Adaptive Algorithms for Online Boosting.

In Proceedings of the 32nd International Conference on Machine Learning (ICML 2015). ***Best Paper Award.***

Alina Beygelzimer, Elad Hazan, Satyen Kale and Haipeng Luo.

Online Gradient Boosting.

In Advances in Neural Information Processing Systems 28 (NIPS 2015).

Haipeng Luo and Robert E. Schapire.

Achieving All with No Parameters: AdaNormalHedge.

In Proceedings of the 28th Conference on Learning Theory (COLT 2015).

Haipeng Luo and Robert E. Schapire.

A Drifting-Games Analysis for Online Learning and Applications to Boosting.

In Advances in Neural Information Processing Systems 27 (NIPS 2014).

Haipeng Luo, Patrick Haffner and Jean-Francois Paiement.

Accelerated Parallel Optimization Methods for Large Scale Machine Learning.

In the 7th NIPS Workshop on Optimization for Machine Learning, 2014.

Haipeng Luo and Robert E. Schapire.

Towards Minimax Online Learning with Unknown Time Horizon.

In Proceedings of the 31st International Conference on Machine Learning (ICML 2014).

Weijia Song, Zhen Xiao, Qi Chen, and Haipeng Luo.

Adaptive Resource Provisioning for the Cloud Using Online Bin Packing.

IEEE Transactions on Computers, 63:2647-2660, 2013.

Zhen Xiao, Qi Chen and Haipeng Luo.

Automatic Scaling of Internet Applications for Cloud Computing Services.

IEEE Transactions on Computers, 63:1111-1123, 2012.

SERVICES

PC Member: COLT 2019, ICML 2019, NeurIPS 2019, 2018, ALT 2019, 2017

Conference Review: ICML 2018, 2017, 2016, NeurIPS 2017, 2016, AISTATS 2019, 2017, 2016, COLT 2018, 2017, 2016, SODA 2017, 2016, IJCAI 2015, 2013

Journal Review: JMLR, Machine Learning, Mathematical Programming, IEEE Transactions on Signal Processing, IEEE Transactions on Information Forensics & Security, Theoretical Computer Science

TEACHING

Instructor, Machine Learning (CSCI 567), USC, Fall 2018

Instructor, Introduction to Online Optimization/Learning, Peking University, Summer 2018

Instructor, Introduction to Online Learning (CSCI 699), USC, Fall 2017

Teaching assistant, Artificial Intelligence (COS 402), Princeton, Fall 2012, 2013