

Gautam Goel

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Research Interests	I am broadly interested in machine learning, optimization, and analysis of algorithms, especially 1) online learning and online decision making; 2) integrating machine learning with dynamics and control; 3) beyond-worst-case analysis of algorithms, and 4) randomized algorithms.	
Education	Caltech Ph.D. in Computing and Mathematical Sciences (CMS)	2015 - 2021 (expected)
	Georgia Tech Bachelor of Science in Applied Mathematics	2011 - 2015
Awards	Amazon AI Fellowship	2018
	National Science Foundation Graduate Research Fellowship	2015
	Georgia Tech School of Mathematics Outstanding Junior Award	2014
	Goldwater Scholarship	2013
Preprints	Gautam Goel and Babak Hassibi (2020). The Power of Linear Controllers in LQR Control. Under consideration at COLT 2020.	
Conference Publications	Yiheng Lin, Gautam Goel, and Adam Wierman (2020). Online Optimization with Predictions and Non-convex Losses. Accepted at Sigmetrics 2020.	
	Gautam Goel, Yiheng Lin, Haoyuan Sun, and Adam Wierman (2019). Beyond Online Balanced Descent: An Optimal Algorithm for Smoothed Online Optimization. Accepted at NeurIPS 2019 with spotlight (top 2.5% of submissions).	
	Gautam Goel and Adam Wierman (2019). An Online Algorithm for Smoothed Regression and LQR Control. Appeared in AISTATS 2019. Extended abstract appeared at Mathematical Aspects of Performance Modelling (MAMA) workshop at Sigmetrics 2019, and also at Real-world Sequential Decision Making Workshop at ICML 2019.	
	Niangjun Chen, Gautam Goel and Adam Wierman (2018). Smoothed Online Convex Optimization in High Dimensions. Appeared in COLT 2018. Extended abstract appeared at Mathematical Aspects of Performance Modelling (MAMA) workshop at Sigmetrics 2018.	
	Gautam Goel, Niangjun Chen and Adam Wierman (2017). Thinking Fast and Slow: Optimization Decomposition Across Timescales. Appeared in CDC 2017. Extended abstract appeared at Mathematical Aspects of Performance Modelling (MAMA) workshop at Sigmetrics 2017.	
Invited Talks	Conference on Information Sciences and Systems (CISS) 2019 at Johns Hopkins University. Session on Online Optimization Learning: Theory Applications.	
	Applied Probability Society (APS) 2018 at Northwestern University. Session on Smart Grid.	
Teaching Experience	Head TA for CS 165, Foundations of Machine Learning and Statistical Inference (Taught Winter 2018 by Anima Anandkumar). Responsibilities included creating homework assignments	

and projects, helping create lecture slides, holding recitations on related material, and teaching students during weekly office hours.

TA for ACM 104, Applied Linear Algebra (Taught Fall 2017 by Konstantin Zuev). Responsibilities included grading and teaching students during weekly office hours.

**Student
Mentoring**

Yiheng Lin (B.S. Student from Tsinghua University). Worked with Yiheng on a research project that led to a paper on online learning which appeared at NeurIPS 2019. A subsequent project led to a paper at Sigmetrics 2020.

Haoyuan Sun (B.S. Student from Caltech). Worked with Haoyuan on a research project that led to a paper on online learning which appeared at NeurIPS 2019.