Gautam Goel

Research Interests	Machine learning, optimization, and control, especially (i) online learning and sequential decision-making, and (ii) integrating machine learning with dynamics and control.

Education

Caltech
Ph.D. in Computing and Mathematical Sciences (CMS)   2015 -
Advisor: Babak Hassibi

Georgia Tech
Bachelor of Science in Applied Mathematics   2015

Awards

Named a Rising Star in Data Science by the University of Chicago	2021
Amazon AI4Science 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. *Regret-optimal control in dynamic environments.*

Gautam Goel and Babak Hassibi. *The Power of Linear Controllers in LQR Control.*

Journal Papers

Gautam Goel and Babak Hassibi. *Competitive Control.* Under consideration at Transactions of Automatic Control (TAC).

Gautam Goel and Babak Hassibi. *Regret-optimal Estimation and Control.* Under consideration at Transactions of Automatic Control (TAC) Special Issue on Learning and Control.

Conference Papers

Gautam Goel and Babak Hassibi. *Regret-optimal measurement-feedback control.* L4DC 2021.

Yiheng Lin, **Gautam Goel**, and Adam Wierman. *Online Optimization with Predictions and Non-convex Losses.* Sigmetrics 2020.

Gautam Goel*, Yiheng Lin*, Haoyuan Sun*, and Adam Wierman. *Beyond Online Balanced Descent: An Optimal Algorithm for Smoothed Online Optimization.* NeurIPS 2019 (Spotlight). *Equal contribution.

Gautam Goel and Adam Wierman. *An Online Algorithm for Smoothed Regression and LQR Control.* AISTATS 2019.

Niangjun Chen*, **Gautam Goel*** and Adam Wierman. *Smoothed Online Convex Optimization in High Dimensions.* COLT 2018. *Equal contribution.

Gautam Goel, Niangjun Chen and Adam Wierman. *Thinking Fast and Slow: Optimization Decomposition Across Timescales.* CDC 2017.

Workshop Papers	**Gautam Goel** and Adam Wierman. *An Online Algorithm for Smoothed Regression and LQR Control.* Real-world Sequential Decision Making Workshop, ICML 2019, and Mathematical Aspects of Performance Modelling (MAMA) Workshop, Sigmetrics 2019.
	Gautam Goel, Niangjun Chen, and Adam Wierman. *Smoothed Online Convex Optimization in High Dimensions.* Mathematical Aspects of Performance Modelling (MAMA) Workshop, Sigmetrics 2018.
	Gautam Goel, Niangjun Chen and Adam Wierman. *Thinking Fast and Slow: Optimization Decomposition Across Timescales.* Mathematical Aspects of Performance Modelling (MAMA) Workshop, Sigmetrics 2017.
Reviewing	ICLR
	NeurIPS
	IEEE Transactions on Networking
	IEEE Transactions on Automatic Control
	IEEE Transactions on Information Theory
Invited Talks	UC Santa Barbara, July 2021. Host: Yu-Xiang Wang
	Google DeepMind/University of Alberta, February 2021. Host: Csaba Szepesvári
	Conference on Information Sciences and Systems (CISS) 2019 at Johns Hopkins University.
	Applied Probability Society (APS) 2018 at Northwestern University. Session on Smart Grid.
Teaching Experience	EE 170, Mathematics of Signal Processing (Spring 2021)
	EE 164, Adaptive Signal Processing (Spring 2020)
	CS 165, Foundations of Machine Learning and Statistical Inference (Winter 2018)
	ACM 104, Applied Linear Algebra (Fall 2017)
Student Mentoring	Yiheng Lin (Tsinghua University → Caltech)
	Haoyuan Sun (Caltech → MIT)