

# Rahul Kidambi

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Google Scholar; Github; dblp.

## Research Interests

Applications and Algorithms for Machine Learning, Deep Learning and Optimization.

## Publications

(\*) represents alphabetical ordering of authors (as in CS Theory papers).

- ↗ (\*) Rong Ge, Sham M. Kakade, *Rahul Kidambi*, Praneeth Netrapalli, “**The Step Decay Schedule: A Near-Optimal Geometrically Decaying Learning Rate Procedure**”, In Neural Information Processing Systems (**NeurIPS**), 2019.
- ↗ (\*) Rong Ge, Prateek Jain, Sham M. Kakade, *Rahul Kidambi*, Dheeraj M. Nagaraj, Praneeth Netrapalli “**Open Problem: Do Good Algorithms Necessarily Query Bad Points?**”, Conference on Learning Theory (**COLT**), 2019.
- ↗ *Rahul Kidambi*, Praneeth Netrapalli, Prateek Jain, Sham M. Kakade, “**On the Insufficiency of existing momentum schemes for Stochastic Optimization**”, in International Conference on Learning Representations (**ICLR**) 2018. **Oral Presentation (23/1002  $\approx$  2% Acceptance Rate)**. Also at Info. Theory Appl (ITA) Workshop, 2018.
- ↗ (\*) Prateek Jain, Sham M. Kakade, *Rahul Kidambi*, Praneeth Netrapalli, Aaron Sidford, “**Accelerating Stochastic Gradient Descent for Least Squares Regression**”. Conference on Learning Theory (**COLT**), 2018.
- ↗ (\*) Prateek Jain, Sham M. Kakade, *Rahul Kidambi*, Praneeth Netrapalli and Aaron Sidford, “**Parallelizing Stochastic Gradient Descent for Least Squares Regression: mini-batching, averaging, and model misspecification**”, Journal of Machine Learning Research (**JMLR**), 2018.
- ↗ (\*) Prateek Jain, Sham M. Kakade, *Rahul Kidambi*, Praneeth Netrapalli, Venkata Krishna Pillutla, Aaron Sidford, “**A Markov Chain Theory Approach to Characterizing the Minimax Optimality of Stochastic Gradient Descent (for Least Squares)**”, Invited paper at Foundations of Software Technology and Theoretical Computer Science (**FSTTCS**), 2017.
- ↗ *Rahul Kidambi*, Sreeram Kannan, “**On Shannon capacity and causal estimation**”, Invited paper at **Allerton** Conference on Communication, Control and Computing, 2015.
- ↗ Jennifer Gillenwater, Rishabh Iyer, Bethany Lusch, *Rahul Kidambi*, Jeff Bilmes, “**Submodular Hamming Metrics**”, in Neural Information Processing Systems (**NeurIPS**), 2015. Spotlight presentation.
- ↗ *Rahul Kidambi*, Min-Chi Shih, Kenneth Rose, “**Deformable Trellises over Factor Graphs for Robust Microtubule Tracking in Clutter**”, in International Symposium on Biomedical Imaging (**ISBI**), 2012.

## Education

- **Doctor of Philosophy** - PhD, ECE, University of Washington, Seattle – 2019.  
Adviser: **Prof. Sham M. Kakade** (Associate Professor of Computer Science and Statistics).  
Dissertation Title: Stochastic Gradient Descent for Modern Machine Learning: Theory, Algorithms and Applications.
- **Master of Science** - M.S., ECE, University of California, Santa Barbara – 2012.
- **Bachelor of Technology** - B.Tech, ECE, National Institute of Technology, Tiruchirappalli – 2010.  
Smt. Neela Balasubramaniam endowed best outgoing student of the ECE department.

## Experience

- Research Intern, Microsoft Research India, Summer 2017.  
Mentor: **Dr. Praneeth Netrapalli**, **Dr. Prateek Jain**.
- Research Assistant, Microsoft Research India, Spring 2013-Fall 2014.  
Mentor: **Dr. Sundararajan Sellamanickam**.

## Service

Reviewer for conferences (ICML, NeurIPS, COLT, ICLR, ISIT, AISTATS) and journals (JMLR, Elec. Journal of Statistics, IEEE Trans. Info. Theory).