

# Nilesh Tripuraneni

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<b>Education</b>	<b>U.C. Berkeley</b> (Expected) Ph.D in Computer Science Supervisor: Michael I. Jordan	2016 - 2022
	<b>University of Cambridge</b> M.Phil in Information Engineering (by research in Machine Learning Group) Supervisor: Zoubin Ghahramani	2014 - 2016 Thesis: Magnetic Hamiltonian Monte Carlo
	<b>Harvard University</b> B.A. in Physics	2009 - 2013 Graduated Summa Cum Laude (GPA 3.97) with Highest Honors
<b>Technical Skills</b>	<b>Languages:</b> Experienced with Python, PyTorch, & R. <b>Selected Coursework:</b> Probability Theory, Theoretical/High-Dimensional Statistics, Deep Reinforcement Learning, Convex/Algorithms for Optimization, Randomized Algorithms, & Parallel Programming.	
<b>Work Experience</b>	<b>Dyno Therapeutics</b> Berkeley, CA (remote) Using tools from transfer learning to improve the fitness prediction of protein sequences for drug design applications.	Research Intern Sept 2021 – Dec. 2021
	<b>Amazon NYC</b> Berkeley, CA (remote) Developed a cross-validation procedure for judging the efficacy of average treatment effect estimators using a large corpus of randomized control trials.	Research Intern May 2021 – Aug. 2021
	<b>Google Brain NYC</b> Berkeley, CA (remote) Studied the phenomenology of distributional shift in random feature models/neural networks.	Research Intern May 2020 – Aug. 2020
	<b>Microsoft Research New England</b> Cambridge, MA Improved transductive prediction/test-time prediction exploiting knowledge of each test point, with methods from debiasing literature/causal inference.	Research Intern May 2018 – Aug. 2018
<b>Teaching</b>	<b>U.C. Berkeley</b> Berkeley, CA EE 127: Optimization Models in Engineering and Stat 210B: Theoretical Statistics II	Teaching Assistant 2018 Fall/2019 Spring
<b>Honors</b>	ICML 2017 Best Paper Honorable Mention Phi Beta Kappa Intel STS 2009 9th Place Winner Research Science Institute (2008) Scholar	
<b>Preprints</b>	N. Tripuraneni, D. Madeka, D. P. Foster, D. Perrault-Joncas, M. I. Jordan. “Assessment of Treatment Effect Estimators for Heavy-Tailed Data.” In Preparation.  N. Tripuraneni*, B. Adlam*, J. Pennington*. “Covariate Shift in High-Dimensional Random Feature Regression.” In Submission.  J. Chan*, A. Pacchiano*, N. Tripuraneni*, Y.S. Song, P. Bartlett, M.I. Jordan. “Parallelizing Contextual Linear Bandits.” In Submission.	

Y. Cherapanamjeri, N. Tripuraneni, P. Bartlett, M.I. Jordan. “Optimal mean estimation without a variance.” In Submission.

Y. Cherapanamjeri, E. Aras, N. Tripuraneni, M. I. Jordan, N. Flammarion, P. Bartlett. “Optimal robust linear regression in nearly linear time.” In Submission.

## Publications

N. Tripuraneni, B. Adlam, J. Pennington. “Overparameterization Improves Robustness to Covariate Shift in High Dimensions”. NeurIPS 2021.

N. Tripuraneni, C. Jin, M. Jordan. “Provable Meta-Learning of Linear Representations”. ICML 2021.

N. Tripuraneni, M. Jordan, C. Jin “On the Theory of Transfer Learning: The Importance of Task Diversity”. NeurIPS 2020.

Y. Cherapanamjeri\*, S. Hopkins\*, T. Kathuria\*, P. Raghavendra\*, N. Tripuraneni\*. “Algorithms for Heavy-Tailed Statistics: Regression, Covariance Estimation, and Beyond”. STOC 2020.

N. Tripuraneni, L. Mackey. “Single Point Transductive Prediction”. ICML 2020.

R Liu, J Regier, N Tripuraneni, M Jordan, J McAuliffe. “Rao-Blackwellized stochastic gradients for discrete distributions”. ICML 2019.

N. Tripuraneni, N. Flammarion, F. Bach, M.I. Jordan. “Averaging Stochastic Gradient Descent on Riemannian Manifolds.” COLT 2019.

N. Tripuraneni\*, M. Stern\*, C. Jin, J. Regier, M. Jordan. “Stochastic Cubic Regularization for Fast Nonconvex Optimization”. NeurIPS 2018 (Oral).

N. Tripuraneni, M. Rowland, Z. Ghahramani, R. Turner. “Magnetic Hamiltonian Monte Carlo”. ICML 2017.

M. Balog, N. Tripuraneni, Z. Ghahramani, A. Weller “Lost Relatives of the Gumbel Trick”. ICML 2017 (Best Paper Honorable Mention).

J.P. Dexter, T. Katz, N. Tripuraneni, et al. Quantitative criticism of literary relationships. PNAS 2017.

N. Tripuraneni\*, S. Gu\*, H. Ge, Z. Ghahramani. “Particle Gibbs for Infinite Hidden Markov Models”. NIPS 2015.

K. Rajagopal, and N. Tripuraneni. “Bulk Viscosity and Cavitation in Boost-Invariant Hydrodynamic Expansion”. JHEP 2010.

\*denotes equal contribution.