MATTHEW SHUNSHI ZHANG

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EDUCATION

University of Toronto — January 2022 -
PhD, Computer Science, Supervised by Profs. Murat Erdogdu and Animesh Garg. Affiliated with the Vector Institute for Artificial Intelligence.

University of Toronto — September 2020 - January 2022
MS, Computer Science, Supervised by Profs. Murat Erdogdu and Animesh Garg. Affiliated with the Vector Institute for Artificial Intelligence. GPA: 4.00/4.00

University of Toronto — September 2016 - May 2020
BASc, Engineering Science, Machine Intelligence Specialization. High Honours, GPA: 3.94/4.00

OTHER POSITIONS

ENS Paris-Saclay
Visiting student with Prof. Alain Durmus at Centre-Borelli. May 2022 - August 2022

PUBLICATIONS

Tight Regret and Complexity Bounds for Thompson Sampling via Langevin Monte Carlo
Tom Huix, Matthew S. Zhang, Alain Durmus — AISTATS, 2023

Towards a Theory of Non-Log-Concave Sampling: First-Order Stationarity Guarantees for Langevin Monte Carlo
K. Balasubramanian, Sinho Chewi, Murat A. Erdogdu, Mufan Li, Adil Salim, Matthew S. Zhang — COLT, 2022

Analysis of Langevin Monte Carlo from Poincaré to Log-Sobolev
Sinho Chewi, Murat A. Erdogdu, Mufan Bill Li, Ruoqi Shen, Matthew Zhang — COLT, 2022

Convergence and Optimality of Policy Gradient Methods in Weakly Smooth Settings
Matthew S. Zhang, Murat A. Erdogdu, Animesh Garg — AAAI, 2022

Convergence of Langevin Monte Carlo in Chi-Squared and Rényi Divergence
Murat A. Erdogdu, Rasa Hosseinzadeh, Matthew S. Zhang — AISTATS, 2022

One-Shot Pruning of Recurrent Neural Networks by Jacobian Spectrum Evaluation
Matthew S. Zhang, Bradly Stadie — ICLR, 2020

PREPRINTS

Improved Discretization Analysis for the Underdamped Langevin Monte Carlo
Matthew Zhang, Sinho Chewi, Mufan Li, Krishnakumar Balasubramanian, Murat A. Erdogdu — Preprint, 2023

Benchmarking Model-Based Reinforcement Learning
Tingwu Wang, Xuchan Bao, Ignasi Clavera, Jerrick Hoang, Yeming Wen, Eric Langlois, Matthew Shunshi Zhang, Guodong Zhang, Pieter Abbeel, Jimmy Ba — Preprint, 2019

CURRENT PROJECTS

An Underdamped Proximal Sampler
Improved Analysis for Mean-Field Langevin

TALKS

Convergence of LMC in Rényi Divergence
Applied Mathematics Seminar, CERMICS — June 2022

Analysis of LMC from Poincaré to log-Sobolev
Complexity of Sampling Working Group, Simons Institute — November 2021

EXTRACURRICULAR

University of Toronto Data Science Team
President, Adviser   2018 - 2020
Engineering Student Society
Vice-President Academic, Policy Outreach Director   2017 - 2019

AWARDS

University of Toronto Fellowships   2021
Daisy Intelligence Scholarship for Engineering Science   2019
Faculty of Applied Science and Engineering Award   2018
Engineering Society Awards   2018
Jane Elizabeth Ham Scholarship   2017
Canadian Freshman Debating Champion   2017

REFERENCES

Murat Erdogdu, Professor   erdogdu@cs.toronto.edu
Alain Durmus, Professor   alain.durmus@polytechnique.edu