LIST OF PUBLICATIONS

Karan Singh, November 2021

All publications list authors in the alphabetical order, except those indicated with †.

PEER-REVIEWED PUBLICATIONS

Boosting for Online Convex Optimization
Elad Hazan, Karan Singh
International Conference on Machine Learning (ICML), 2021

A Regret Minimization Approach to Iterative Learning Control
Naman Agarwal, Elad Hazan, Anirudha Majumdar, Karan Singh
International Conference on Machine Learning (ICML), 2021

Improper Learning for Nonstochastic Control†
Max Simchowitz, Karan Singh, Elad Hazan
Conference on Learning Theory (COLT), 2020

No-Regret Prediction in Marginally Stable Systems
Udaya Ghai, Holden Lee, Karan Singh, Cyril Zhang, Yi Zhang
Conference on Learning Theory (COLT), 2020

The Nonstochastic Control Problem
Elad Hazan, Sham Kakade, Karan Singh
Algorithmic Learning Theory (ALT), 2020

Logarithmic Regret for Online Control
Naman Agarwal, Elad Hazan, Karan Singh
Neural Information Processing Systems (NeurIPS), 2019, **Oral Presentation** ($<0.5\%$ of submissions)
(Also, **Best Paper Award** at the OptRL workshop at NeurIPS 2019)

Online Control with Adversarial Disturbances
Naman Agarwal, Brian Bullins, Elad Hazan, Sham Kakade, Karan Singh
International Conference on Machine Learning (ICML), 2019

Provably Efficient Maximum Entropy Exploration
Elad Hazan, Sham Kakade, Karan Singh, Abby Van Soest
International Conference on Machine Learning (ICML), 2019

Efficient Full-Matrix Adaptive Regularization
Naman Agarwal, Brian Bullins, Xinyi Chen, Elad Hazan, Karan Singh, Cyril Zhang, Yi Zhang
International Conference on Machine Learning (ICML), 2019

Spectral Filtering for General Linear Dynamical Systems
Elad Hazan, Holden Lee, Karan Singh, Cyril Zhang, Yi Zhang
Neural Information Processing Systems (NeurIPS), 2018, **Oral Presentation** ($<0.5\%$ of submissions)

Learning Linear Dynamical Systems via Spectral Filtering

Elad Hazan, Karan Singh, Cyril Zhang

Neural Information Processing Systems (NeurIPS), 2017, **Spotlight** ($<$5% of submissions)

(Also, **Spotlight Prize** at New York Academy of Sciences' ML Symposium 2018)

The Price of Differential Privacy for Online Learning

Naman Agarwal, Karan Singh

International Conference on Machine Learning (ICML), 2017

Efficient Regret Minimization in Non-Convex Games

Elad Hazan, Karan Singh, Cyril Zhang

International Conference on Machine Learning (ICML), 2017

PREPRINTS, PATENTS AND TECHNICAL REPORTS

A Boosting Approach to Reinforcement Learning

Nataly Brukhim, Elad Hazan, Karan Singh

Preliminary version at ICML Workshop on RL Theory, 2021

Dynamic Learning System

Elad Hazan, Karan Singh, Cyril Zhang

US Patent 11,138,513 B2, approved Oct 2021

Machine Learning for Mechanical Ventilation Control†

Daniel Suo, Cyril Zhang, Paula Gradu, Udaya Ghai, Xinyi Chen, Edgar Minasyan, Naman Agarwal, Karan Singh, Julienne LaChance, Tom Zajdel, Manuel Schottdorf, Daniel Cohen, Elad Hazan

Machine Learning for Health (ML4H), 2021 Workshop Track

Featured in Princeton Engineering news

Deluca – A Differentiable Control Library: Environments, Methods, and Benchmarking†

Paula Gradu, John Hallman, Daniel Suo, Alex Yu, Naman Agarwal, Udaya Ghai, Karan Singh, Cyril Zhang, Anirudha Majumdar, Elad Hazan

NeurIPS Workshop on Differentiable Computer Vision & Physics, 2020 Oral Presentation

Towards Provable Control for Unknown Linear Dynamical Systems

Sanjeev Arora, Elad Hazan, Holden Lee, Karan Singh, Cyril Zhang, Yi Zhang

International Conference on Learning Representations (ICLR), Workshop Track, 2018

Dynamic Task Allocation for Crowdsourcing†

Angela Zhou, Irineo Cabreros, Karan Singh

ICML Workshop on Data Efficient Machine Learning, 2016

November 17, 2021