Publications (Generated: 2025-11-15T19:53:25.595239 UTC)

The Complexity of Learning Sparse Superposed Features with Feedback
Authors: A Kumar
Venue: The 42nd International Conference on Machine Learning (ICML 2025)
Date: 2025-07-01
Links: proceedings: https://proceedings.mlr.press/v267/kumar25b.html | arxiv: https://arxiv.org/abs/2502.05407
Abstract: The success of deep networks is crucially attributed to their ability to capture latent features within a repres

A Gap Between the Gaussian RKHS and Neural Networks: An Infinite-Center Asymptotic Analysis [selected]
Authors: A Kumar, R Parhi, M Belkin
Venue: The 38th Annual Conference on Learning Theory (COLT 2025)
Date: 2025-06-01
Links: proceedings: https://proceedings.mlr.press/v291/kumar25b.html | arxiv: https://arxiv.org/abs/2502.16331
Abstract: Recent works have characterized the function-space inductive bias of infinite-width bounded-norm single-h

Convergence of Nearest Neighbor Selective Classification
Authors: A Kumar, S Dasgupta
Venue: Manuscript on request
Date: 2025-02-01
Abstract: An elementary approach to \emph{selective classification} (also known as \emph{classification with a rejec

Mirror Descent on Reproducing Kernel Banach Space (RKBS) [selected]
Authors: A Kumar, M Belkin, P Pandit
Venue: Journal of Machine Learning Research (JMLR), 2025 (To appear)
Date: 2025-01-01
Links: proceedings: https://arxiv.org/abs/2411.11242 | arxiv: https://arxiv.org/abs/2411.11242
Abstract: Recent advances in machine learning have led to increased interest in reproducing kernel Banach spaces

Learning Smooth Distance Functions via Queries [selected]
Authors: A Kumar, S Dasgupta
Venue: Preprint
Date: 2024-12-01
Links: proceedings: https://arxiv.org/abs/2412.01290 | arxiv: https://arxiv.org/abs/2412.01290
Abstract: In this work, we investigate the problem of learning distance functions within the query-based learning fram

Robust Empirical Risk Minimization with Tolerance [selected]
Authors: R Bhattacharjee, K Chaudhuri, M Hopkins, A Kumar, H Yu
Venue: The 34th International Conference on Algorithmic Learning Theory (ALT'23)
Date: 2023-03-01
Links: proceedings: https://proceedings.mlr.press/v201/bhattacharjee23a | arxiv: https://arxiv.org/abs/2210.00635
Abstract: Developing simple, sample-efficient learning algorithms for robust classification is a pressing issue in today

Teaching via Best-Case Counterexamples in the Learning-with-Equivalence-Queries Paradigm
Authors: A Kumar, Y Chen, A Singla
Venue: The 35th Conference on Neural Information Processing Systems (NeurIPS 2021)
Date: 2021-12-01
Links: proceedings: https://proceedings.neurips.cc/paper/2021/hash/e22dd5dabde45eda5a1a67772c8e25dd-Abstra
Abstract: We study the sample complexity of teaching, termed as "teaching dimension" (TD) in the literature, for the

The Teaching Dimension of Kernel Perceptron [selected]
Authors: A Kumar, H Zhang, A Singla, Y Chen
Venue: The 24th International Conference on Artificial Intelligence and Statistics (AISTATS 2021)
Date: 2021-04-01
Links: proceedings: https://proceedings.mlr.press/v130/kumar21a.html | arxiv: https://arxiv.org/abs/2010.14043

Abstract: Algorithmic machine teaching has been studied under the linear setting where exact teaching is possible. H

Deletion to Induced Matching
Authors: A Kumar, M Kumar
Venue: Preprint
Date: 2020-08-21
Links: proceedings: https://arxiv.org/abs/2008.09660 | arxiv: https://arxiv.org/abs/2008.09660
Abstract: In the DELETION TO INDUCED MATCHING problem, we are given a graph G on n vertices, m ed

Average-case Complexity of Teaching Convex Polytopes via Halfspace Queries
Authors: A Kumar, A Singla, Y Yue, Y Chen
Venue: Preprint
Date: 2020-06-25
Links: proceedings: https://arxiv.org/abs/2006.14677 | arxiv: https://arxiv.org/abs/2006.14677
Abstract: We examine the task of locating a target region among those induced by intersections of n halfspaces in