Nicolò Antonio Cesa-Bianchi — Selected publications

[Books and Monographs]
- S. Bubeck and N. Cesa-Bianchi
  Regret Analysis of Stochastic and Nonstochastic Multi-armed Bandit Problems
- N. Cesa-Bianchi and G. Lugosi
  Prediction, Learning, and Games

[Active Learning and Clustering]
- M. Bressan, N. Cesa-Bianchi, S. Lattanzi, A. Paudice, and M. Thiessen
  Active learning of classifiers with label and seed queries
- M. Bressan, N. Cesa-Bianchi, S. Lattanzi, and A. Paudice
  On margin-based cluster recovery with oracle queries
- M. Bressan, N. Cesa-Bianchi, S. Lattanzi, and A. Paudice
  Exact recovery of clusters in finite metric spaces using oracle queries
  Proceedings of the 34th Annual Conference on Learning Theory (COLT). PMLR
- M. Bressan, N. Cesa-Bianchi, S. Lattanzi, and A. Paudice
  Exact recovery of mangled clusters with same-cluster queries
- M. Bressan, N. Cesa-Bianchi, A. Paudice, and F. Vitale
  Correlation clustering with adaptive similarity queries

[Bandit Problems and Sequential Decision-Making]
- N. Cesa-Bianchi, T. Cesari, R. Colomboni, F. Fusco, and S. Leonardi
  Repeated Bilateral Trade Against a Smoothed Adversary
  Proceedings of the 36th Annual Conference on Learning Theory (COLT), PMLR
- D. van der Hoeven, L. Zierahn, T. Lancewicik, A. Rosenberg, and N. Cesa-Bianchi
  A Unified Analysis of Nonstochastic Delayed Feedback for Combinatorial
  Semi-Bandits, Linear Bandits, and MDPs
• E. Esposito, S. Masoudian, H. Qiu, D. van der Hoeven, N. Cesa-Bianchi, and Y. Seldin
  Delayed bandits: when do intermediate observations help?
  Proceedings of the 40th International Conference on Machine Learning (ICML).
• D. van der Hoeven, C. Pike-Burke, H. Qiu, and N. Cesa-Bianchi
  Trading-off payments and accuracy in online classification with paid stochastic experts
  Proceedings of the 40th International Conference on Machine Learning (ICML).
• K. Eldowa, N. Cesa-Bianchi, A. Metelli, and M. Restelli
  Information-theoretic regret bounds for bandits with fixed expert advice
  Information Theory Workshop (ITW), 2023.
• N. Cesa-Bianchi, T. Cesari, T. Osogami, M. Scarsini, and S. Wasserkrug
  Learning the Stackelberg equilibrium in a newsvendor game
• C. Rouyer, D. van der Hoeven, N. Cesa-Bianchi, and Y. Seldin
  A near-optimal best-of-both-worlds algorithm for online learning with feedback graphs
• N. Cesa-Bianchi, T. Cesari, R. Colomboni, C. Gentile, and Y. Mansour
  Nonstochastic bandits with composite anonymous feedback
• D. van der Hoeven and N. Cesa-Bianchi
  Nonstochastic bandits and experts with arm-dependent delays
  Proceedings of the 25th International Conference on Artificial Intelligence and Statistics (AISTATS).
• P. Laforgue, G. Clerici, N. Cesa-Bianchi, and Ran Gilad-Bachrach
  A last switch dependent analysis of satiation and seasonality in bandits
  Proceedings of the 25th International Conference on Artificial Intelligence and Statistics (AISTATS).
• N. Cesa-Bianchi, T. Cesari, Y. Mansour, and V. Perchet
  ROI maximization in stochastic online decision-making
• D. van der Hoeven, F. Fusco, and N. Cesa-Bianchi
  Beyond bandit feedback in online multiclass classification
• N. Cesa-Bianchi, T. Cesari, R. Colomboni, F. Fusco, and S. Leonardi
Bilateral trade: A regret minimization perspective

- C. Rouyer, Y. Seldin, and N. Cesa-Bianchi
  An algorithm for stochastic and adversarial bandits with switching costs
  Proceedings of the 38th International Conference on Machine Learning (ICML).

- L. Cella and N. Cesa-Bianchi
  Stochastic bandits with delay-dependent payoffs
  Proceedings of the 23rd International Conference on Artificial Intelligence and

- T. Thune, N. Cesa-Bianchi, and Y. Seldin
  Nonstochastic multiarmed bandits with unrestricted delays

- I. Kuzborskij, L. Cella, and N. Cesa-Bianchi
  Efficient linear bandits through matrix sketching
  Proceedings of the 22nd International Conference on Artificial Intelligence and

- N. Cesa-Bianchi, C. Gentile, and Y. Mansour
  Delay and cooperation in nonstochastic bandits

- N. Cesa-Bianchi, C. Gentile, G. Lugosi, G. Neu
  Boltzmann exploration done right
  Advances in Neural Information Processing Systems 30 (NIPS). Pages

  Nonstochastic multi-armed bandits with graph-structured feedback

- N. Cesa-Bianchi, P. Gaillard, C. Gentile, and S. Gerchinovitz
  Algorithmic chaining and the role of partial feedback in online nonparametric
  learning

- N. Cesa-Bianchi
  Multi-armed bandit problem

- N. Alon, N. Cesa-Bianchi, O. Dekel, and T. Koren
  Online learning with feedback graphs: beyond bandits
• N. Cesa-Bianchi, C. Gentile, and Y. Mansour
  Regret minimization for reserve prices in second-price auctions
• N. Cesa-Bianchi, C. Gentile, and G. Zappella
  A gang of bandits
• S. Bubeck, N. Cesa-Bianchi, and G. Lugosi
  Bandits with heavy tail
• S. Bubeck, N. Cesa-Bianchi, and S. Kakade
  Towards minimax policies for online linear optimization with bandit feedback
• N. Cesa-Bianchi and G. Lugosi
  Combinatorial bandits
• P. Auer, N. Cesa-Bianchi, and P. Fischer
  Finite-time analysis of the multiarmed bandit problem
• P. Auer, N. Cesa-Bianchi, Y. Freund, and R.E. Schapire
  The nonstochastic multiarmed bandit problem

[Learning on Graphs]
• G. Le Falher, N. Cesa-Bianchi, C. Gentile, F. Vitale
  On the troll-trust model for edge sign prediction in social networks
  Proceedings of the 20th International Conference on Artificial Intelligence and
  Statistics (AISTATS). JMLR Workshop and Conference Proceedings, 54:402-411,
  2017.
• N. Cesa-Bianchi, C. Gentile, F. Vitale, and G. Zappella
  A linear time active learning algorithm for link classification
  Advances in Neural Information Processing Systems 25 (NIPS). Pages
  1619-1627, 2012.
• N. Cesa-Bianchi, C. Gentile, F. Vitale, and G. Zappella
  A correlation clustering approach to link classification in signed networks
• F. Vitale, N. Cesa-Bianchi, C. Gentile, and G. Zappella
See the tree through the lines: the Shazoo algorithm

- N. Cesa-Bianchi, C. Gentile, F. Vitale, and G. Zappella
  Active learning on trees and graphs
- N. Cesa-Bianchi, C. Gentile, F. Vitale, and G. Zappella
  Random spanning trees and the prediction of weighted graphs
- N. Cesa-Bianchi, C. Gentile, and F. Vitale
  Predicting the labels of an unknown graph via adaptive exploration
- N. Cesa-Bianchi, C. Gentile, and F. Vitale
  Fast and optimal prediction on a labeled tree

[Online Learning]
- D. van der Hoeven, N. Zhivotovskiy, and N. Cesa-Bianchi
  A regret-variance trade-off in online learning
- N. Cesa-Bianchi, P. Laforgue, A. Paudice, and M. Pontil
  Multitask online mirror descent
- N. Cesa-Bianchi and F. Orabona
  Online learning algorithms
- I. Kuzborskij and N. Cesa-Bianchi
  Locally-adaptive nonparametric online learning
- I. Kuzborskij and N. Cesa-Bianchi
  Nonparametric online regression while learning the metric
- R. De Rosa and N. Cesa-Bianchi
  Confidence decision trees via online and active learning for streaming data
- R. De Rosa, I. Gori, F. Cuzzolin, and N. Cesa-Bianchi
Active incremental recognition of human activities in a streaming context

- H. Luo, A. Agarwal, N. Cesa-Bianchi, and J. Langford
  Efficient second order online learning by sketching

- F. Orabona, K. Crammer, and N. Cesa-Bianchi
  A generalized online mirror descent with applications to classification and regression

- N. Cesa-Bianchi and O. Shamir
  Efficient transductive online learning via randomized rounding

- F. Orabona, N. Cesa-Bianchi, and C. Gentile
  Beyond logarithmic bounds in online learning

- F. Orabona and N. Cesa-Bianchi
  Better algorithms for selective sampling

- N. Cesa-Bianchi, S. Shalev-Shwartz, and O. Shamir
  Online learning of noisy data with kernels

- L. Jie, F. Orabona, M. Fornoni, B. Caputo, and N. Cesa-Bianchi
  OM-2: An online multi-class multi-kernel learning algorithm

- N. Cesa-Bianchi, S. Shalev-Shwartz, and O. Shamir
  Efficient learning with partially observed attributes

- G. Cavallanti, N. Cesa-Bianchi, and C. Gentile
  Linear algorithms for online multitask classification

- N. Cesa-Bianchi, C. Gentile, and F. Orabona
  Robust bounds for classification via selective sampling
• G. Cavallanti, N. Cesa-Bianchi, and C. Gentile
  Tracking the best hyperplane with a simple budget Perceptron
• N. Cesa-Bianchi
  Applications of regularized least squares to pattern classification
• N. Cesa-Bianchi, C. Gentile, and L. Zaniboni
  Worst-case analysis of selective sampling for linear classification
• N. Cesa-Bianchi, C. Gentile, and L. Zaniboni
  Hierarchical classification: combining Bayes with SVM
• N. Cesa-Bianchi, C. Gentile, and L. Zaniboni
  Incremental algorithms for hierarchical classification
• N. Cesa-Bianchi, A. Conconi, and C. Gentile
  A second-order Perceptron algorithm
• P. Auer, N. Cesa-Bianchi, and C. Gentile
  Adaptive and self-confident on-line learning algorithms
• N. Cesa-Bianchi
  Analysis of two gradient-based algorithms for on-line regression

[Statistical Learning Theory]
• I. Kuzborskij, N. Cesa-Bianchi, and C. Szepesvari
  Distribution-Dependent Analysis of Gibbs-ERM Principle
• N. Cesa-Bianchi, Y. Mansour, and O. Shamir
  On the complexity of learning with kernels
• G. Cavallanti, N. Cesa-Bianchi, and C. Gentile
  Learning noisy linear classifiers via adaptive and selective sampling
• N. Cesa-Bianchi and C. Gentile

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Improved risk tail bounds for on-line algorithms

- N. Cesa-Bianchi, A. Conconi, and C. Gentile
  On the generalization ability of on-line learning algorithms
  Sample-efficient strategies for learning in the presence of noise
- N. Alon, S. Ben-David, N. Cesa-Bianchi, and D. Haussler
  Scale-sensitive dimensions, uniform convergence, and learnability
- S. Ben-David, N. Cesa-Bianchi, D. Haussler, and P.M. Long
  Characterizations of learnability for classes of \{0,\ldots,n\}-valued functions

[Prediction with Expert Advice and Game-Theoretic Learning]

- N. Cesa-Bianchi, O. Dekel, O Shamir
  Online learning with switching costs and other adaptive adversaries
- E. Gofer, N. Cesa-Bianchi, C. Gentile, and Y. Mansour
  Regret minimization for branching experts
- N. Cesa-Bianchi, P. Gaillard, G. Lugosi, and G. Stoltz
  Mirror Descent meets Fixed Share (and feels no regret)
- N. Cesa-Bianchi, Y. Mansour, and G. Stoltz
  Improved second-order bounds for prediction with expert advice
- N. Cesa-Bianchi, G. Lugosi, and G. Stoltz
  Regret minimization under partial monitoring
- N. Cesa-Bianchi, G. Lugosi, and G. Stoltz
  Minimizing regret with label efficient prediction
- N. Cesa-Bianchi and G. Lugosi
  Potential-based algorithms in on-line prediction and game theory
- N. Cesa-Bianchi and G. Lugosi
Worst-case bounds for the logarithmic loss of predictors

- N. Cesa-Bianchi and G. Lugosi
  On prediction of individual sequences

- N. Cesa-Bianchi, D.P. Helmbold, and S. Panizza
  On Bayes methods for on-line boolean prediction

- N. Cesa-Bianchi, Y. Freund, D.P. Helmbold, D. Haussler, R. Schapire, and M.K. Warmuth
  How to use expert advice

- N. Cesa-Bianchi, Y. Freund, D.P. Helmbold, and M.K. Warmuth
  On-line prediction and conversion strategies

[Bioinformatics]
- M. Frasca and N. Cesa-Bianchi
  Multitask protein function prediction through task dissimilarity

- N. Cesa-Bianchi, M. Re, and G. Valentini
  Synergy of multilabel hierarchical ensembles, data fusion, and cost-sensitive methods for gene functional inference

- G. Valentini and N. Cesa-Bianchi
  HCGene: a software tool to support the hierarchical classification of genes

[Other Areas]
- Y. Seldin, F. Laviolette, N. Cesa-Bianchi, J. Shawe-Taylor, and P. Auer
  PAC-Bayesian Inequalities for Martingales

- N. Cesa-Bianchi and D. Haussler,
  A graph-theoretic generalization of the Sauer-Shelah lemma

- N. Cesa-Bianchi, A. Krogh and M.K. Warmuth
  Bounds on approximate steepest descent for likelihood maximization in exponential families

Milano, 9 August 2023