

## Algorithmic Learning Theory 2018: Preface

**Mehryar Mohri**

*Courant Institute of Mathematical Sciences and Google Research*

MOHRI@CS.NYU.EDU

**Karthik Sridharan**

*Department of Computer Science, Cornell University*

SRIDHARAN@CS.CORNELL.EDU

**Editor:** Firdaus Janoos, Mehryar Mohri and Karthik Sridharan

These proceedings contain the 33 papers accepted for presentation at the 29th International Conference on Algorithmic Learning Theory (ALT 2018), held at Lanzarote, Spain, during the period of April 7-9, 2018. The 33 papers accepted were selected by the program committee out of 95 papers submissions. Each accepted paper was allotted 20 minutes for presentation.

In addition to these presentations, the conference program included two invited talks, one by Eva Tardos titled *Learning in Games*, and one by Claudio Gentile titled *Online clustering of bandit algorithms*. The conference program also included two tutorial talks, one by Renato Paes Leme and Andres Muñoz Medina titled *Learning to Optimize Revenue in Auctions* and the other by Lev Reyzin titled *A Tutorial on Statistical Queries*.

Antonio Blanca, Zongchen Chen, Daniel Stefankovic and Eric Vigoda received the Best Paper Award this year for their paper titled *Structure Learning of  $H$ -colorings*. Michael Cohen and Yuanzhi Li received this year's Best Student Paper Award for their paper *Sparsity, variance and curvature in multi-armed bandits* co-authored by Sébastien Bubeck.

This year's edition of the conference saw a significant increase in the number of submissions with a very high quality. This, together with a strong program including our invited talks and selected tutorials make ALT a top conference in learning theory dedicated to all theoretical and algorithmic aspects of machine learning.

We warmly thank Vicenç Gómez and Gergely Neu who served as the Local Arrangements Chairs for ALT this year, Firdaus Janoos who was our Publication Chair, and Tim Roughgarden our Tutorial Chair. We are also particularly grateful to Sandra Zilles, the Chair of the ALT steering committee, for her guidance and help throughout, as well as to the rest of the steering committee for their support.

We wish to express our deepest gratitude to all of the program committee for taking on the load of carefully reviewing all submissions and discussing all contributions. We are also thankful to all external reviewers for their attentive help in the reviewing process.

Finally, we would like to thank our generous sponsors: Adobe, Amazon, D. E. Shaw & Co., Google, Mobileye, TwoSigma and Universitat Pompeu Fabra.

Mehryar Mohri and Karthik Sridharan  
ALT 2018 Program Chairs

**Program Committee**

Jacob Abernethy (Georgia Institute of Technology), Kareem Amin (Google Research), Borja Balle Pigem (Amazon Research), Peter Bartlett (UC Berkeley), Sanjoy Dasgupta (University of California, San Diego), Rong Ge (Duke University), Claudio Gentile (Universita' dell'Insubria), Sebastien Gerchinovitz (Universite Toulouse III - Paul Sabatier), Nika Hagh-talab (Carnegie Mellon University), Daniel Hsu (Columbia University), Anatoli Juditsky (Universite Grenoble Alpes), Robert Kleinberg (Cornell University), Wouter Koolen (Centrum Wiskunde & Informatica), Tomer Koren (Google), Samory Kpotufe (Princeton University), Wojciech Kotlowski (Pozna University of Technology), Vitaly Kuznetsov (Google Research), Gabor Lugosi (ICREA and Universitat Pompeu Fabra), Tengyu Ma (Facebook AI Research and Stanford University), Yishay Mansour (Tel Aviv University), Jamie Morgenstern (Microsoft Research), Alexander Rakhlin (Massachusetts Institute of Technology), Tim Roughgarden (Stanford University), Robert Schapire (Microsoft Research, NYC lab), Ohad Shamir (Weizmann Institute of Science), Nathan Srebro (Toyota Technological Institute at Chicago), Gilles Stoltz (HEC Paris-CNRS), Umar Syed (Google, NY), Vasilis Syrgkanis (Microsoft Research, New England), Alexandre Tsybakov (CREST-ENSAE), Scott Yang (D. E. Shaw & Co.), Sandra Zilles (University of Regina).

**External Reviewers**

Yasin Abbasi-Yadkori, Peter Auer, Ron Begleiter, Kush Bhatia, Srinadh Bhojanapalli, Gilles Blanchard, Digvijay Boob, Benjamin Bray, Rbert Busa-Fekete, Cristina Butucea, Clément Canonne, Niladri S. Chatterji, Zhengping Che, Xiang Cheng, Alon Cohen, Rémy Degenne, Krzysztof Dembczynski, Giulia Desalvo, Beyza Ermis, Dylan Foster, Sumegha Garg, Aurlien Garivier, Maziar Gomrokchi, Alon Gonen, Daniel Gordon, Benjamin Guedj, Suriya Gunasekar, Swati Gupta, Yonatan Gur, Mark Herbster, Samuel Hopkins, Rupert Hözl, Sanjay Jain, Heinrich Jiang, Yuri Kalnishkan, Gautam Kamath, Amin Karbasi, Mina Karzand, Emilie Kaufmann, Shiva Kaul, Naveen Kodali, Bhuvish Kumar, Joon Kwon, Timo Kötzing, Kevin A. Lai, Tor Lattimore, Roi Livni, Andrea Locatelli, Jean-Michel Loubes, Alan Malek, Nishant Mehta, Song Mei, Andres Munoz Medina, Pierre Mnard, Gergely Neu, Mesrob Ohannessian, Francesco Orabona, Dmitrii Ostrovskii, Vianney Perchet, Guillaume Rabusseau, Maxim Raginsky, Andrej Risteski, Matteo Ruffini, Nihar Shah, Or Sheffet, Jacob Steinhardt, Dmitry Storcheus, Ju Sun, Ananda Theertha Suresh, Christos Tzamos, Ruth Urner, Thomas J. Walsh, Jialei Wang, Jun-Kun Wang, Chen-Yu Wei, Zuxuan Wu, Nan Ye, Dong Yin, Wei Yu, Anderson Zhang, Ningshan Zhang, Yiqiao Zhong, Yuancheng Zhu, Ziwei Zhu.