Algorithmic Learning Theory 2020: Preface

Aryeh Kontorovich   KARYEH@CS.BGU.AC.IL
Ben-Gurion University, Beer Sheva, Israel

Gergely Neu   GERGELY.NEU@GMAIL.COM
Universitat Pompeu Fabra, Barcelona, Spain

Editors: Aryeh Kontorovich and Gergely Neu

These proceedings contain the **38 papers** accepted for presentation at the 31st International Conference on Algorithmic Learning Theory (ALT 2020), held in San Diego, California (USA), February 8–11, 2020. The 38 papers were selected by the program committee, with the help of additional expert reviewers, out of 128 submissions. Each accepted paper was presented in a 20-minute talk and a poster session.

Jayadev Acharya and Ananda Theertha Suresh received the Best Paper Award this year for their work titled "Optimal multiclass overfitting by sequence reconstruction from Hamming queries". The Best Student Paper Award was given to **Arun Suggala and Praneeth Netrapalli** for their work titled "Online Non-Convex Learning: Following the Perturbed Leader is Optimal". Although honorable mentions are not usually awarded at ALT, this year **Geoffrey Wolfer**'s submission "Mixing Time Estimation in Ergodic Markov Chains from a Single Trajectory with Contraction Methods" was a top contender for Best Student Paper, but is instead being recognized as an honorable mention due to a conflict of interest with one of the PC chairs.

Besides the presentations of the accepted papers, the conference featured three tutorials and three invited talks. The tutorials were given by Jelani Nelson, by Maxim Raginsky, and by the duo of Alex Slivkins and Robert D. Kleinberg, and the invited talks were given by John Lafferty, by Dafna Shahaf, and by Manfred Warmuth.

As compared to previous years, the review procedure was particularly selective at this year's conference. Indeed, the program committee was instructed to hold papers to the highest standards, which resulted in very rigorous reviews and an acceptance rate significantly lower than in previous years. We anticipate that the exceptionally strong program this year will further strengthen the stature of ALT as a top venue for research on machine learning theory.

We wish to thank our local organization chairs Sanjoy Dasgupta and Ananda Theertha Suresh, our publication chair Wojciech Kotłowski and our publicity chair Sandra Zilles for their dedicated work that helped make the conference a success. We especially thank Mehryar Mohri, the head of the ALT steering committee, as well as all other members of the steering committee, for their tireless efforts that continue to raise ALT to newer and newer heights each year. Last but not least, we thank our program committee and external reviewers for dealing with the hardest part of the work: carefully reviewing and discussing all the submitted work, thus effectively putting together the main program of the conference. Finally, we would like to thank our generous sponsors: Google and DeepMind.

Aryeh Kontorovich and Gergely Neu
ALT 2020 Program Chairs

Program committee: Yasin Abbasi-Yadkori (VinAI), Pierre Alquier (Riken AIP), Shai Ben-David (University of Waterloo), Nicolò Cesa-Bianchi (University of Milan), Andrew Cotter (Google), Ilias Diakonikolas (University of Southern California), Dylan Foster (Cornell University), Claudio Gentile (Google), Lee-Ad Gottlieb (Ariel University), Peter D. Grünwald (CWI) Suriya Gunasekar (Toyota Technological Institute), András György (DeepMind / Imperial College London), Steve Hanneke (Toyota Technological Institute), Sanjay Jain (National University of Singapore), Prateek Jain (Microsoft Research), Satyen Kale (Google), Emilie Kaufmann (CNRS), Tomer Koren (Google), Wojciech Kotłowski (Poznań University of Technology), Akshay Krishnamurthy (Microsoft Research), Ilja Kuzborskij (DeepMind), Alessandro Lazaric (Facebook AI Research / IN-RIA), Roi Livni (Princeton University), Haipeng Luo (University of Southern California), Yishay Mansour (Tel Aviv University), Nishant Mehta (University of Victoria), Alexander Rakhlin (MIT), Aaditya Ramdas (Carnegie Mellon University), Lev Reyzin (University of Illinois at Chicago), Lorenzo Rosasco (University of Genova / MIT / IIT), Alessandro Rudi (INRIA), Sivan Sabato (Ben-Gurion University), Hans Ulrich Simon (Ruhr-University Bochum), Bharath Sriperumbudur (Pennsylvania State University), Uri Stemmer (Ben-Gurion University), Csaba Szepesvári (DeepMind / University of Alberta), Balázs Szörényi (Yahoo! Research), Roi Weiss (Ariel University), Andre Wibisono (Georgia Institute of Technology), Assaf Zeevi (Columbia University), Nikita Zhivotovskiy (Google).

External reviewers: Ehsan Amid, Krishna Kumar Balasubramanian, Raef Bassily, Benjamin Bray, Daniele Calandriello, Clément Canonne, Alain Celisse, Leonardo Cella, Tommaso Cesari, Lin Chen, Geoffrey Chinot, Alon Cohen, Yuval Dagan, Omar Darwiche-Domingues, Ernesto De Vito, Rishabh Dudeja, Ahmed El Alaoui, Vitaly Feldman, James Freitag, Dan Garber, Aurélien Garivier, Sébastien Gerchinovitz, Debarghya Ghoshdastidar, Alon Gonen, Chirag Gupta, Tom Hess, Zihao Hu, Masaaki Imaizumi, Pritish Kamath, Varun Kanade, Rahul Kidambi, Vasilis Kontonis, Bhuvesh Kumar, Kevin A. Lai, Tor Lattimore, Kfir Levy, Pasin Manurangsi, Pierre Ménard, Xiangming Meng, Stanislav Minsker, Joris Mooij, Ido Nachum, Nagarajan Natarajan, Andrea Paudice, Matteo Pirotta, Adarsh Prasad, Eric Price, Nikita Puchkin, Muni Sreenivas Pydi, Aditi Raghunathan, Omar Rivasplata, Andrea Rocchetto, Tuhin Sarkar, Harshay Shah, Ohad Shamir, Jaehyeok Shin, Igor Silin, Max Simchowitz, Shashank Singh, Zhao Song, Ivan Stelmakh, Frank Stephan, Adith Swaminathan, Jean Tarbouriech, Christopher Tosh, Tim van Erven, Joel Veness, Claire Vernade, Jun-Kun Wang, Manfred Warmuth, Chen-Yu Wei, Gellért Weisz, Zheng Wen, Pan Xu, Xiyu Zhai, Kai Zhong, Tijana Zrnic.