

Preface

This volume contains the refereed proceedings of the 6th International Conference on Analysis of Images, Social Networks, and Texts (AIST 2017)¹. The previous conferences during 2012–2016 attracted a significant number of students, researchers, academics, and engineers working on interdisciplinary data analysis of images, texts, and social networks.

The broad scope of AIST made it an event where researchers from different domains, such as image and text processing, exploiting various data analysis techniques, can meet and exchange ideas. We strongly believe that this may lead to cross fertilisation of ideas between researchers relying on modern data analysis machinery. Therefore, AIST brought together all kinds of applications of data mining and machine learning techniques. The conference allowed specialists from different fields to meet each other, present their work, and discuss both theoretical and practical aspects of their data analysis problems. Another important aim of the conference was to stimulate scientists and people from industry to benefit from the knowledge exchange and identify possible grounds for fruitful collaboration.

The conference was held during July 27–29, 2017. The conference was organised in Moscow, the capital of Russia, on the campus of Moscow Polytechnic University². This year, the key topics of AIST were grouped into six tracks:

1. General topics of data analysis chaired by Sergei Kuznetsov (Higher School of Economics, Russia) and Amedeo Napoli (LORIA, France)
2. Natural language processing chaired by Natalia Loukachevitch (Lomonosov Moscow State University, Russia) and Alexander Panchenko (University of Hamburg, Germany)
3. Social network analysis chaired by Stanley Wasserman (Indiana University, USA)
4. Analysis of images and video chaired by Victor Lempitsky (Skolkovo Institute of Science and Technology, Russia) and Andrey Savchenko (Higher School of Economics, Russia)
5. Optimisation problems on graphs and network structures chaired by Panos Pardalos (University of Florida, USA) and Michael Khachay (IMM UB RAS and Ural Federal University, Russia)
6. Analysis of dynamic behaviour through event data chaired by Wil van der Aalst (Eindhoven University of Technology, The Netherlands) and Irina Lomazova (Higher School of Economics, Russia)

One of the novelties this year was the introduction of a new specialised track on process mining (Track 6).

¹ <http://aistconf.org/>.

² <http://mospolytech.ru/?eng>.

The Programme Committee and the reviewers of the conference included 167 well-known experts in data mining and machine learning, natural language processing, image processing, social network analysis, and related areas from leading institutions of 30 countries including Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Croatia, Czech Republic, Denmark, Egypt, Finland, France, Germany, Greece, Hungary, India, Ireland, Japan, Lithuania, Norway, Portugal, Qatar, Romania, Russia, Spain, Ukraine, The Netherlands, UK, and USA. This year we received 127 submissions mostly from Russia but also from Algeria, Australia, Brazil, China, Finland, Germany, India, Iran, Kazakhstan, Latvia, Mexico, The Netherlands, Norway, Turkey, USA, and Vietnam.

Out of 127 submissions only 37 papers were accepted as regular oral papers. Thus, the acceptance rate of this volume was around 29%. In order to encourage young practitioners and researchers, we included 34 papers to the supplementary proceedings after their poster presentation at the conference. Each submission was reviewed by at least three reviewers, experts in their fields, in order to supply detailed and helpful comments.

The conference featured several invited talks and an industry session dedicated to current trends and challenges.

The keynote talk was presented by Andrzej Cichocki on “Bridge Between Tensor Networks and Deep Neural Networks: From Fundamentals to Real Applications.”

The invited talks were:

- Stanley Wasserman (Indiana University, USA), “Sensitivity Analysis of p^* and SAOM: The Effects of Missing Data on Parameter Estimates”
- Dirk Fahland (Eindhoven University of Technology, The Netherlands), “Process Mining: Past, Present, and Open Challenges”

Sergey Nikolenko from the St. Petersburg Department of the Steklov Mathematical Institute presented a tutorial on “Deep Learning for Natural Language Processing.”

The business speakers also covered a wide variety of topics³. We list those invited talks below:

- Iosif Itkin (Exactpro Systems), Industrial day opening. Keynote on “Exactpro and Data Analysis in London Stock Exchange: Capital Markets, Post Trade and Information Services”
- Dmitry Bugaychenko (OK.ru), “Odnoklassniki Data Science Research Initiative”
- Olga Megorskaya (Yandex), “Yandex Toloka: Crowdsource Your Data”
- Artur Kuzin (Avito), “AvitoNet: Computer Vision Service in Avito”
- Alexander Zhebrak, Arthur Kadurin, Daniil Polykovskiy (Insilico Medicine), “Artificial Intelligence for Drug Discovery”

We would like to thank the authors for submitting their papers and the members of the Programme Committee for their efforts in providing exhaustive reviews.

³ A detailed program of AIST 2017 Business Day can be found on a separate website: <http://aistconf.ru>.

We would also like to express our special gratitude to all the invited speakers and industry representatives.

We deeply thank all the partners and sponsors. Our golden sponsors is Exactpro. Exactpro, a fully owned subsidiary of the London Stock Exchange Group, specialises in quality assurance for exchanges, investment banks, brokers, and other financial sector organisations. Our special thanks goes to Springer for their help, starting from the first conference call to the final version of the proceedings. Last but not least, we are grateful to all the organisers, especially to Marina Danshina, and the volunteers, whose endless energy saved us at the most critical stages of the conference preparation.

Here, we would like to mention the Russian word “aist” is more than just a simple abbreviation (in Cyrillic) — it means a “stork.” Since it is a wonderful free bird, a symbol of happiness and peace, this stork gave us the inspiration to organise the AIST conference. So we believe that this young and rapidly growing conference will likewise be bringing inspiration to data scientists around the world!

October 2017

Wil van der Aalst
Dmitry Ignatov
Michael Khachay
Sergei Kuznetsov
Victor Lempitsky
Irina Lomazova
Natalia Loukachevitch
Amedeo Napoli
Alexander Panchenko
Panos Pardalos
Andrey Savchenko
Stanley Wasserman

Analysis of Images, Social Networks and Texts
6th International Conference, AIST 2017, Moscow,
Russia, July 27–29, 2017, Revised Selected Papers
van der Aalst, W.M.P.; Ignatov, D.I.; Khachay, M.;
Kuznetsov, S.O.; Lempitsky, V.; Lomazova, I.A.;
Loukachevitch, N.; Napoli, A.; Panchenko, A.; Pardalos,
P.; Savchenko, A.V.; Wasserman, S. (Eds.)
2018, XXX, 412 p. 105 illus., Softcover
ISBN: 978-3-319-73012-7