

# Preface

This volume contains proceedings of the Fifth International conference on Analysis of Images, Social Networks, and Texts (AIST 2016)<sup>1</sup>. The previous conferences in 2012–2015 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 makes 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 crossfertilisation of ideas between researchers relying on modern data analysis machinery. Therefore, AIST brings together all kinds of applications of data mining and machine learning techniques. The conference allows 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 is to stimulate scientists and people from the industry to benefit from the knowledge exchange and identify possible grounds for fruitful collaboration.

The conference was held during April 6–8, 2016. Following an already established tradition, the conference was organised in Yekaterinburg, a cross-roads between European and Asian parts of Russia, the capital of Urals region. The key topics of AIST are analysis of images and videos; natural language processing and computational linguistics; social network analysis; pattern recognition, machine learning and data mining; recommender systems and collaborative technologies; semantic web, ontologies and their applications.

The Program Committee and the reviewers of the conference included well-known experts in data mining and machine learning, natural language processing, image processing, social network analysis, and related areas from leading institutions of 27 countries including Australia, Bangladesh, Belgium, Brazil, Croatia, Cyprus, Egypt, Estonia, Finland, France, Germany, Greece, India, Ireland, Israel, Italy, Japan, Lithuania, Norway, Portugal, Qatar, Russia, Spain, Switzerland, The Netherlands, UK, Ukraine, and USA.

This year we have received 142 submissions mostly from Russia but also from Australia, Austria, France, Hungary, India, Italy, Mexico, Norway, Sweden, UK, USA and Vietnam.

Out of 142 only 30 papers were accepted as regular oral papers. Thus, the acceptance rate of this volume was around 21%. In order to encourage young practitioners and researchers we included 3 papers of industry speakers to the main volume and 38 papers to the supplementary proceedings. Each submission was reviewed by at least three reviewers, experts in their fields, in order to supply detailed and helpful comments.

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<sup>1</sup> <http://aistconf.org/>

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

Invited talks:

- Mehdi Kaytoue (Université de Lyon, CNRS, INSA-Lyon, France), Finding Duplicate Labels in Behavioral Data: an Application for E-Sport Analytics.
- Attila Kertesz-Farkas (Higher School of Economics, Russia), False Discovery Rate Control for Database Search Methods over Heterogeneous Biological Data
- Radhakrishnan Delhibabu (Kazan Federal University, Russia), Analysis of Anisotropic Diffusion in Image Processing

The business speakers also covered a wide variety of topics<sup>2</sup>. We have included three of those invited talks into the main volume:

- Denis Nikiforov, Alexander Korchagin and Ruslan Sivakov (Centre of Information Technology, Ekaterinburg, Russia) An Ontology-Driven Approach to Electronic Document Structure Design
- Tatyana Prisyach (Speech Technology Center, St. Petersburg, Russia), Valentin Mendelev and Dmitry Ubskiy (ITMO-University, St. Petersburg, Russia), Data Augmentation for Training of Noise Robust Acoustic Models
- Alexander Semenov (Higher School of Economics, Russia) and Peter Romov (Yandex, Russia), Performance of Machine Learning Algorithms in Predicting Game Outcome from Drafts in Dota

We would also like to mention the best conference papers selected by the Program Committee within each section:

- On Complexity of Searching a Subset of Vectors with Shortest Average under a Cardinality Restriction by Anton Ereemeev, Alexander Kelmanov, and Artem Pyatkin (*Machine Learning and Data Mining*);
- The Problem of The Optimal Packing of The Equal Radius Circles for Non-Euclidean Metric by Alexander Kazakov, Anna Lempert and Huy Liem Nguyen (*Data Analysis, Social Networks & Complex Data*);
- Parallel Non-blocking Deterministic Algorithm for Online Topic Modeling by Oleksandr Frei and Murat Apishev (*Natural Language Processing*);
- Image Processing Algorithms with Structure Transferring Properties on the Basis of Gamma-normal Model by Inessa Gracheva and Andrey Kopylov (*Analysis of Images and Video*).

The final round of SNA Hackathon 2016<sup>3</sup> co-organised by OK.Ru and AIST team has taken place in conjunction with the main conference on April 6–8.

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

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<sup>2</sup> the detailed program of AIST 2016 Business Day can be found at a separate website: <http://dataconf.org>

<sup>3</sup> <http://snahackathon.org/>

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

We deeply thank all the partners and sponsors. Our golden sponsors are Exactpro<sup>4</sup> and OK.Ru<sup>5</sup>. Exactpro, a fully owned subsidiary of London Stock Exchange Group, specialises in quality assurance for exchanges, investment banks, brokers and other financial sector organisations. OK.Ru, a part of Mail.Ru Group, is one of the two largest Russian social networking services. Our bronze sponsor is Centre of Information Technologies (Centre IT)<sup>6</sup>. This is a Russian engineering company that specializes in creating exclusive IT solutions and services for the interdepartmental electronic interaction both on the national and international levels.

We would like to acknowledge the Scientific Fund of Higher School of Economics for providing AIST participants with travel grants. Our special thanks goes to Springer editors who helped us, starting from the first conference call to the final version of the proceedings. Last but not least, we are grateful to all organisers, especially to Eugeniya Vlasova, and the volunteers, whose endless energy saved us at the most critical stages of the conference preparation.

Traditionally, 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 brought us the inspiration to organise the AIST conference. So we believe that this young and rapidly growing conference will be bringing inspiration to data scientists around the World!

October, 2016

Dmitry Ignatov  
Michael Khachay  
Valery Labunets  
Natalia Loukachevitch  
Sergey Nikolenko  
Alexander Panchenko  
Andrey Savchenko  
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<sup>4</sup> exactprosystems.com

<sup>5</sup> OK.ru

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