Preface

This volume contains proceedings of the 5th International conference on Analysis of Images, Social Networks, and Texts (AIST 2016)[1]. The previous conferences during 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 industry to benefit from the knowledge exchange and identify possible grounds for fruitful collaboration.

The conference was held during April 7–9, 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 the 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 submissions 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 three papers by 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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[1] http://aistconf.org/.

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

The invited talks were:

- 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[2]. We have included three of these invited talks in 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 Eremeev, 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 and 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 the SNA Hackathon 2016[3] co-organised by OK.Ru and the AIST team took place in conjunction with the main conference during 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 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[4] and OK.Ru[5]. 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. OK.Ru, part of the Mail.Ru Group, is one of the two largest Russian social networking services. Our bronze sponsor is the Centre of Information Technologies (Centre IT)[6]. This is a Russian engineering company that specializes in creating exclusive IT solutions and services for the interdepartmental electronic interaction both on 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 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 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 likewise be bringing inspiration to data scientists around the world!

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4   exactprosystems.com.
5   OK.ru.
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