



IEEE

The 9th IEEE International Conference

Application of Information and Communication Technologies

Russia, Rostov-on-Don, 14-16 October 2015

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Azerbaijan Chapter



IEEE



9th International Conference



**APPLICATION
OF INFORMATION
AND COMMUNICATION
TECHNOLOGIES - AICT2015**

Russia, Rostov-on-Don, 14-16 October 2015
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CONFERENCE SUMMARY REPORT



ABOUT AICT2015 INTERNATIONAL CONFERENCE



AICT2015 – Rostov-on-Don, 14-16 Oct 2015



AICT2014 – Astana, 15-17 Oct 2014



AICT2013 – Baku, 23-25 Oct 2013



AICT2012 – Tbilisi, 17-19 Oct 2012



AICT2011 – Baku, 12-14 Oct 2011



AICT2010 – Tashkent, 12-14 Oct 2010



AICT2009 – Baku, 14-16 Oct 2009

The 9th IEEE International Conference on Application of Information and Communication Technologies (AICT2015) this year devoted to 100th anniversary of the Southern Federal University has concluded its work successfully in Rostov-on-Don, Russia.

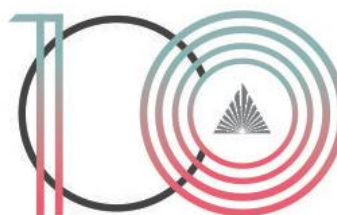
The AICT2015 was co-organized by Southern Federal University and Qafqaz University, with support of IEEE Azerbaijan Joint Chapter and technically sponsored by Institute of Electrical and Electronics Engineers (IEEE).

AICT2015 International Conference is a forum to bring together business people, researchers, scientists, software architects, and industry professionals to discuss innovative ideas and diverse topics on next generation of information technologies and services. In the previous years AICT was joined by hundreds of participants from about 50 countries including Australia, Azerbaijan, China, Finland, Georgia, Germany, India, Iran, Italy, Japan, Kazakhstan, Korea, Latvia, Malaysia, Pakistan, Philippines, Portugal, Romania, Russia, Slovakia, Spain, Sweden, Senegal, Thailand, Turkey, Ukraine, United Kingdom, United States, Uzbekistan, etc.

Building on the success of previous conferences which were held in Baku, Tashkent, Tbilisi, Astana AICT2015 has become one of the most widescale, extensive, spectacular event in ICT-related conference history hosted by partner university for its high level and the large size of participation. Three days conference is held in two different campuses of the Southern Federal University located in Rostov-on-Don and Taganrog cities.

Hundreds of attendees, paper presenters, keynote and tutorial participants, students have benefited in many ways from this conference. More than 100 scientific papers were presented by authors from 12 countries. Eight Invited, Keynote and Tutorial Speakers from different countries addressed to audience and shared knowledge and rich experience of application of ICT in their companies and countries.

Brief history of Southern Federal University: Warsaw (Imperial) University was founded by the Decree of Emperor Alexander I in Warsaw in June 1915. University of Warsaw was evacuated to Moscow and on August 12, 1915 the Academic Council decided to move the University to the city of Rostov-on-Don. Southern Federal University was established by the order of the Government of the Russian Federation # 161-p of November 23, 2006 in the framework of the National Priority Program "Education".



100 YEARS
SOUTHERN
FEDERAL
UNIVERSITY

CONFERENCE SCOPE

AICT2015 topics include, but are not limited to, the following research and development areas/fields (more than 80 topics) classified into 9 sessions:

- Big Data Management and Application
- Data Mining and Data Engineering
- Cyber Security Issues
- Latest Trends in ICT Application
- Communication, network and hardware
- ICT in Business Administration, Finance and Economy
- ICT in Governance and Government Policy Making
- ICT in Education, Humanities, Social Sciences and Research
- ICT in Medicine and Health Care

As a result many Keynote, Tutorial and Technical Sessions have been prepared in accordance with conference scope to discuss the Challenges, Opportunities and Problems of Application of ICT in various fields.

WELCOMING AND OPENING CEREMONY



The first day of conference started with Welcoming and Opening Ceremony at the Southern Federal University. The following representatives of the co-organizing and hosting universities and supporting organizations addressed to participants with short welcoming speeches.

Professor Marina Borovskaya,
Rector of Southern Federal University, Russia

Professor Ahmet Sanich,
Rector of Qafqaz University, Azerbaijan

Assoc.Prof. Abzeturdin Adamov,
AICT2015 International Conference General Chair, Azerbaijan

Professor Esref Adali,
Founding Dean, Istanbul Technical University, Turkey

Dr. Gennady Smorodin,
EMC Corporation, Russia



KEYNOTE and TUTORIAL SPEECHES



Overview and problem state of ontology models development.

Professor Victor Kureichik, Computer Sciences and Information Safety Institute, Southern Federal University, Russia.

Knowledge Management and Ontological Modeling in Enterprise Engineering.

Professor Valery Tarassov, CIM Department, Bauman Moscow State Technical University, Russia

Abstract: *The problems of developing an Ontological Approach to Knowledge Management in the context of Enterprise Engineering are faced. First of all, some basic definitions and viewpoints on Enterprise Engineering as a multi-disciplinary area are discussed. An original pyramid of disciplines for Enterprise Engineering is suggested. Some fundamentals of ontological modeling in Enterprise Engineering are discussed. A three-level hierarchical ontology system is proposed that includes a meta-ontology, upper ontologies and lower ontologies. A special attention is paid to making the differences between the concepts of meta-ontology and upper ontology.*



Machine Translation and Natural Language Processing.

Professor Eshref Adali, Computer Engineering and Informatics Faculty, Istanbul Technical University, Turkey

Abstract: *Machine translation is one of the most challenging and problematic applications in the natural language processing field. The difficulty of implementing a successful machine translation system mostly stems from the divergences between languages. However, the translation task becomes easier for the closely related language pairs. We present brief information about machine translation; some similarities and divergences between languages. Additionally, a system architecture is introduced for machine translation.*



On-Chip Hardware Accelerators for Data Processing and Combinatorial Search

Professor Valery Skliarov and Dr. Iouliia Skliarova, University of Aveiro / IEETA, Portugal

Abstract: *Data processing and combinatorial search are widely used in the scope of information and communication. Examples of practical applications are sorting, frequent items encountering, matrix/set covering, graph/map coloring, data mining, priority management, and many others. Often information/data processing that involves the listed above tasks has to be done in embedded systems where high performance needs to be achieved in portable and low-cost devices integrating multiple functions and capabilities. An efficient development technique for such systems is hardware/software co-design with the use of programmable systems-on-chip that are highly integrated, easily customizable. The tutorial is dedicated to such a design technique.*



Information approach to analysis and modeling of experimental data. Qualitative, quantitative and numerical data models.



Professor Victor S. Abrukov, Department of Applied Physics and Nanotechnology, Chuvash State University, Russia

Abstract: *Fundamentals of the theory and practice of Data Mining usage for modeling of experimental data.*

Examples of the use of Data Mining for modeling of combustion processes, characterization of nanomaterials and nanotechnology, solution of inverse problems of optics by means of incomplete information about the image (signal).

Examples of the usage of Data Mining for modeling of socio-economic systems (family relations, educational process in high education).

Transfer yourself - join to EMC Academic community.

Dr. Gennady Smorodin, EMC Corporation (EMC St. Petersburg Development Center LLC), Russia.

Abstract: *To be in line with academic community EMC Corporation runs EMC Academic Partnership (EAA) EAA is focus on preparing the next generation of IT professionals for careers in virtualized and cloud environments. EMC collaborates with colleges and universities worldwide to help prepare students for successful careers in a transforming IT industry.*



Developing educational project-oriented Big Data Analytics programs based on business experience.

Dr. Evgeniy Pavlovskiy, Novosibirsk State University, Russia

Abstract: *Considering the standard analytics lifecycle, project-oriented educational programs on Big Data Analytics has been developed. Holistic approach for courses development, concerning both essential issues and Russian Federal Educational Standard restrictions has been used. The holistic approach consists of combining several principles from marketing, data science, PR, business analysis, and teaching experience.*



CONCURRENT TECHNICAL SESSIONS



Hundreds of attendees, paper presenters, keynote and tutorial participants, students have benefited in many ways from this conference. More than 100 scientific papers were presented by authors from 18 countries in Technical Sessions that were held in Southern Federal University's Rostov-on-Don and Taganrog campuses. All accepted papers had been categorized into the following six sessions:

- BIG DATA MANAGEMENT AND APPLICATION
- DATA MINING AND DATA ENGINEERING
- CYBER SECURITY ISSUES
- LATEST TRENDS IN ICT APPLICATION
- COMMUNICATION, NETWORK AND HARDWARE
- ICT IN EDUCATION, HUMANITIES, SOCIAL SCIENCES AND RESEARCH



ACKNOWLEDGEMENTS



The General Chair of the AICT2015 Assoc.Prof. Abzетdin Adamov expressed deep gratitude on behalf of Organizing and Steering Committees to the Administration of co-organizing and hosting Southern Federal University. Special thanks were extended to all who were directly involved in maintaining the conference activities and worked all together and extremely hard to prepare an outstanding conference. Tender thanks were expressed to volunteering students of university who did impressive and dedicated work.



Finally, partnering company EMC Corporation was awarded. EMC Corporation and AICT International Conference have long-standing collaboration experience. It is second time EMC Academic Alliance meeting had been taking place in the framework of AICT International Conference.



Briefly about EMC Academic Alliance: EMC collaborates with colleges and universities worldwide to help prepare students for successful careers in a transforming IT industry. The EMC Academic Alliance program offers unique 'open' curriculum-based education on technology topic such as cloud computing, big data analytics, information storage and management, and backup recovery systems and architecture. All courseware and faculty training are offered at no cost to qualifying higher education institutions.



SOCIAL PROGRAM and BANQUET DINNER





CLOSING CEREMONY



AICT2015 Closing Ceremony was held in main building of the Southern Federal University.

(Abridged version of a Closing address by General Chair)
Ladies and gentlemen,

Respected Participants and Guests, especially those have come from abroad, Ladies and gentlemen,

The 9th International Conference on "Application of Information and Communication Technologies AICT2015" is now drawing to a close. I would like to take this opportunity to extend our sincere gratitude and appreciation to all of you, for your invaluable contributions in making this event a great success.

We hope the past three days have been fruitful and that you will be able to make the most from the sessions you attended. Through a wide range of keynote speeches, tutorials, and discussions, we have been presented with new ways to deal with some of the challenges in Application of ICT. We hope that you shared your experiences and expertise with other participants from near and far, and that a cordial relationship established among us during the AICT2015 Conference will further strengthen.

On behalf of Organizing and Steering Committee, let me express our deep gratitude to the Southern Federal University and Qafqaz University for their deep contribution and support.

I also express our gratitude to all members of the Organizing Committee and all staff of Universities especially Southern Federal University extending exceptional hospitality to the delegates and maintaining high standards of arrangement for various events of the Conference.

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Before I conclude, I would like to invite all of you for the next 10th AICT2016 International Conference to be held on 12-14 October, 2016 in capital city Baku.

Thank you for being here in great cities Rostov-on-Don and Taganrog with us and have a safe journey home.

Assoc.Prof. Abzeturdin Adamov
AICT2015 International Conference General Chair