

## Preface

The Speech and Computer International Conference (SPECOM) has become a regular event since the first SPECOM, which was held in St. Petersburg, Russian Federation, in 1996. Twenty one years ago, SPECOM was established by the St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences and State Pedagogical University of Russia thanks to the efforts of Prof. Yuri Kosarev and Prof. Rajmund Piotrowski.

SPECOM is a conference with a long tradition that attracts researchers in the area of computer speech processing (recognition, synthesis, understanding, etc.) and related domains (including signal processing, language and text processing, computational paralinguistics, multi-modal speech processing, and human–computer interaction). The SPECOM International Conference is an ideal platform for know-how exchange – especially for experts working on Slavic and other highly inflectional languages – including both under-resourced and regular well-resourced languages.

In its long history, the SPECOM conference has been organized alternately by the St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS) and by the Moscow State Linguistic University (MSLU) in their home cities. Furthermore, in 1997 it was organized by the Cluj-Napoca Subsidiary of the Research Institute for Computer Technique (Romania), in 2005 by the University of Patras (in Patras, Greece), in 2011 by the Kazan Federal University (Russian Federation, Republic of Tatarstan), in 2013 by the University of West Bohemia (in Pilsen, Czech Republic), and in 2014 by the University of Novi Sad (Serbia), in 2015 by the University of Patras (in Athens, Greece), and in 2016 by the Budapest University of Technology and Economics (in Budapest, Hungary).

SPECOM 2017 was the 19th event in the series and this time it was organized by the University of Hertfordshire, in cooperation with the St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS), Moscow State Linguistic University (MSLU), and St. Petersburg National Research University of Information Technologies, Mechanics and Optics (ITMO University). The conference was held jointly with the Second International Conference on Interactive Collaborative Robotics (ICR) – where problems and modern solutions of human–robot interaction were discussed – during September 12–16, 2017 at the College Lane campus of the University of Hertfordshire, which is located in Hatfield, UK 20 miles (30 kilometres) north of London, just 20 minutes by train from London’s King’s Cross station.

During the conference two invited talks were given by Prof. Mark J.F. Gales (Engineering Department, University of Cambridge, UK) and Prof. Björn W. Schuller (University of Passau, Germany and Imperial College London, UK) on the latest achievements in speech technology, automatic speech recognition, keyword spotting speaker analysis and computational paralinguistics. The invited papers are published as a first part of the SPECOM 2017 proceedings.

This volume contains a collection of submitted papers presented at the conference, which were thoroughly reviewed by members of the Program Committee consisting of above 100 top specialists in the conference topic areas. A total of 80 accepted papers out of 150 submitted for SPECOM and ICR were selected by the Program Committee for presentation at the conference and for inclusion in this book. Theoretical and more general contributions were presented in common (plenary) sessions. Problem-oriented sessions as well as panel discussions brought together specialists in limited problem areas with the aim of exchanging knowledge and skills resulting from research projects of all kinds. This year, except the regular technical sessions, three special sessions were organized on (i) Natural Language Processing for Social Media Analysis, (ii) Multilingual and Low-Resourced Languages Speech Processing in Human-Computer Interaction, and (iii) Real-Life Challenges in Voice and Multimodal Biometrics.

We would like to express our gratitude to the authors for providing their papers on time, to the members of the conference Program Committee and the organizers of the special sessions for their careful reviews and paper selection, and to the editors and correctors for their hard work in preparing this volume. Special thanks are due to the members of the Organizing Committee for their tireless effort and enthusiasm during the conference organization.

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