

# Preface

The Speech and Computer International Conference (SPECOM) has become a regular event since the first SPECOM that was held in St. Petersburg, Russian Federation, in 1996. Twenty years ago, SPECOM was established by 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, multi-modal speech processing, or 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 less-resourced and standard, well-resourced languages.

In its long history, SPECOM conference was 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 and 2015 by the University of Patras (Greece), in 2011 by the Kazan Federal University (Russian Federation, Republic of Tatarstan), in 2013 by the University of West Bohemia (Pilsen, Czech Republic), and in 2014 by the University of Novi Sad (Serbia).

SPECOM 2016 was the 18<sup>th</sup> event in the series and this time it was organized by the Budapest University of Technology and Economics (BME) and the Scientific Association for Infocommunications (HTE), in cooperation with Moscow State Linguistic University (MSLU), St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS) and St. Petersburg National Research University of Information Technologies, Mechanics and Optics (ITMO University). The conference was held during August 23–27, 2016, in the Aquincum Hotel Budapest located in a prime area alongside the river Danube, on the Buda side of this magnificent city and across the river from the serene Margaret Island, with its famous thermal waters.

During the conference the invited talks were given by Prof. Nick Campbell (Speech Processing Lab, Trinity College Dublin, Ireland), Prof. Ralf Schlüter (Faculty of Mathematics, Computer Science and Natural Sciences, Human Language Technology and Pattern Recognition, RWTH Aachen University, Germany), and Attila Vékony (NNG Software Developing and Commercial Llc., Hungary) on the latest achievements in speech technologies and the relatively broad and still unexplored area of human–machine interaction. The invited papers are published as a first part of the SPECOM 2016 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 around 40 top specialists in the conference topic areas. A total of 85 accepted papers out of 154 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, the conference had a satellite event – the First International Conference on Interactive Collaborative Robotics — where problems and modern solutions of human–robot interaction were discussed.

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

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