Lecture Notes in Computer Science

# Lecture Notes in Artificial Intelligence 15299

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The series Lecture Notes in Artificial Intelligence (LNAI) was established in 1988 as a topical subseries of LNCS devoted to artificial intelligence.

The series publishes state-of-the-art research results at a high level. As with the LNCS mother series, the mission of the series is to serve the international R & D community by providing an invaluable service, mainly focused on the publication of conference and workshop proceedings and postproceedings.

Alexey Karpov · Vlado Delić
Editors

# Speech and Computer

26th International Conference, SPECOM 2024
Belgrade, Serbia, November 25–28, 2024
Proceedings, Part I

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# SPECOM 2024 Preface

SPECOM is a conference with a long tradition that attracts researchers in the area of speech technology, including automatic speech recognition and understanding, text–to–speech synthesis, speaker and language recognition, as well as related domains like digital speech processing, natural language processing, text analysis, computational paralinguistics, multi–modal speech, and data processing or human–computer interaction. The SPECOM conference is an ideal platform for know–how exchange – especially for experts working on Slavic languages (e.g. Russian, Serbian, Croatian, Polish, Bulgarian, Czech, etc.) or other inflectional spoken languages – including both under–resourced and regular well–resourced ones.

The International Conference on Speech and Computer (SPECOM) has become a regular event since the first SPECOM, held in St. Petresburg, Russia, in October 1996. The SPECOM conference series was established more than 28 years ago by the St. Petresburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS).

In its long history, the SPECOM conference was organized alternately by the St. Petresburg Federal Research Center of the Russian Academy of Sciences (SPC RAS)/SPIIRAS and by the Moscow State Linguistic University (MSLU) in their home towns. 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 (in Patras and Athens, Greece), in 2011 by the Kazan Federal University (in Kazan, Russia), in 2013 by the University of West Bohemia (in Pilsen, Czech Republic), in 2014 by the University of Novi Sad (in Novi Sad, Serbia), in 2016 by the Budapest University of Technology and Economics (in Budapest, Hungary), in 2017 by the University of Hertfordshire (in Hatfield, UK), in 2018 by the Leipzig University of Telecommunications (in Leipzig, Germany), in 2019 by the Bogaziçi University (in Istanbul, Turkey), in 2020 and 2021 by SPC RAS/SPIIRAS (fully online), in 2022 by the KIIT (in Gurugram, New Delhi, India), and in 2023 by the IIT/IIIT Dharwad (in Hubli–Dharwad, Karnataka, India).

SPECOM 2024 was the 26th event in the conference series (https://specom2024.ftn.uns.ac.rs), and the second time SPECOM was in the Republic of Serbia. SPECOM 2024 was organized jointly by the Faculty of Technical Sciences at the University of Novi Sad and the School of Electrical Engineering at the University of Belgrade in cooperation with the Telecommunications Society of Serbia. The conference was held between the 25th and 28th November 2024, in a hybrid format, mostly in–person in the capital of Serbia, Belgrade, at the Crowne Plaza Hotel and online via video conferencing. Moreover, SPECOM 2024 was organized jointly and in parallel with the 32nd Telecommunications Forum TELFOR 2024 (https://www.telfor.rs/en).

During SPECOM 2024, two keynote lectures were given by Dr.–Ing. Kraljevski (Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Dresden, Germany) jointly with his German colleagues on "Preserving Language Heritage Through Speech Technology: The Case of Upper Sorbian", as well as by Prof. Milan Sečujski jointly with his colleagues from the Faculty of Technical Sciences, University of Novi Sad and AlfaNum company, Novi Sad, Serbia on "Retrospective and Perspectives of TTS & STT Technology Development and Implementation for South Slavic Under-Resourced Languages".

This volume contains a collection of submitted papers presented at SPECOM 2024, which were thoroughly reviewed by members of the Program Committee and additional reviewers consisting of over 80 experts in the conference topic areas. In total, 53 regular full papers out of 90 submissions to SPECOM 2024 were carefully selected by the Program Committee members for oral presentation at the conference, as well as for inclusion in these SPECOM 2024 proceedings. Theoretical and more general contributions were presented in common plenary sessions. Problem–oriented sessions as well as panel discussions brought together specialists in niche problem areas with the aim of exchanging knowledge and skills resulting from research projects of all kinds.

We would like to express our gratitude to all authors for providing their papers on time, to the members of the SPECOM 2024 Program Committee for their careful reviews and paper selection, and to the editors and correctors for their hard work in preparing the conference proceedings. Special thanks are due to the members of the SPECOM 2024 Organizing Committee for their tireless effort and enthusiasm during the conference organization. We are also grateful to the Faculty of Technical Sciences at the University of Novi Sad, the School of Electrical Engineering at the University of Belgrade, and the Telecommunications Society of Serbia for organizing and hosting the 26th International Conference on Speech and Computer, SPECOM 2024, in Belgrade.

November 2024                                          Alexey Karpov
                                                      Vlado Delić

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