

Program of the 26th SPECOM conference, November 25-27, 2024 - Hotel Crowne Plaza, Belgrade, Serbia

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| CET, UTC+1 | Day 0, 25th November 2024, Monday (hybrid mode) | |
| 09:00 - 17:00 | First Multi-Regional IEEE Standardisation Training Workshop – Why Standards Matter: How IEEE Standards Drive Industry Advancement and Foster Entrepreneurial Success | |
| CET, UTC+1 | Day 1, 26th November 2024, Tuesday (hybrid mode) | |
| 09:00 - 10:30 | Registration | |
| 10:30 - 12:30 | <p>Opening Ceremony (Hall Pacific&Atlantic)</p> <p>TELFOR and SPECOM Conferences: Introduction, Welcome Messages, Recognitions and Invited Presentation Preserving Language Heritage Through Speech Technology: The Case of Upper Sorbian (Part 1) Ivan Kraljevski, et al. Fraunhofer Institute IKTS, Dresden, Germany Alexey Karpov: Introduction of SPECOM conference and Program announcement</p> | |
| 12:30 - 14:00 | Welcome cocktail | |
| 14:00 - 14:30 | <p>SPECOM Keynote Lecture 1 (Hall Baltic&Aegean)</p> <p>Preserving Language Heritage Through Speech Technology: The Case of Upper Sorbian (Part 2) Ivan Kraljevski, et al. Fraunhofer Institute IKTS, Dresden, Germany Chairperson: Vlado Delić</p> | |
| 14:30 - 16:30 | <p>Oral Session 1 (Hall Baltic&Aegean)</p> <p>Speech and Language Resources Chairs: Branislav Gerazov and Siniša Suzić</p> | <p>Poster session 1 (Before Mediterranean&Adriatic)</p> <p>Affective Computing Chairs: Yuri Matveev and Nikola Simić</p> |
| 16:30 - 17:00 | Coffee break | |
| 17:00 - 19:00 | <p>Oral Session 2 (Hall Baltic&Aegean)</p> <p>Computational Paralinguistics Chairs: Wolfgang Minker and Branislav Popović</p> | |
| 20:00 - 23:00 | Banquet (Restaurant “Velika Skadarlija”) | |
| CET, UTC+1 | Day 2, 27th November 2024, Wednesday (hybrid mode) | |
| 09:00 - 10:30 | <p>Oral Session 3 (Hall Baltic&Aegean)</p> <p>Speaker Recognition Chairs: Jacek Kudera and Nikša Jakovljević</p> | |
| 10:30 - 11:00 | Coffee break | |
| 11:00 - 11:40 | <p>SPECOM Keynote Lecture 2 (Hall Baltic&Aegean)</p> <p>Retrospective and Perspectives of TTS & STT Technology Development and Implementation for South Slavic Under-Resourced Languages. Milan Sečujski, et al. FTS UNS, Novi Sad, Serbia Chairperson: Alexey Karpov</p> | |
| 11:40 - 13:00 | <p>Oral Session 4 (Hall Baltic&Aegean)</p> <p>Speech Synthesis and Perception Chairs: Elena Lyakso and Milan Sečujski</p> | <p>Poster session 2 (Before Mediterranean&Adriatic)</p> <p>Speech Processing for Medicine Chairs: László Tóth and Vuk Stanojev</p> |
| 13:00 - 14:30 | Lunch break (Restaurant in Hotel Crowne Plaza) | |
| 14:30 - 16:10 | <p>Oral Session 5 (Hall Baltic&Aegean)</p> <p>Automatic Speech Recognition Chairs: Géza Németh and Irina Kipyatkova</p> | <p>Poster session 3 (Before Mediterranean&Adriatic)</p> <p>Natural Language Processing Chairs: Gábor Gosztolya and Tijana Nosek</p> |
| 16:10 - 16:30 | <p>SPECOM Closing Ceremony (Hall Baltic&Aegean) Chairpersons: Alexey Karpov and Vlado Delić</p> | |
| 16:30 - 17:00 | Coffee break | |
| | Social events (plan) | |
| 17:00 - 21:00 | Sightseeing tour of Belgrade by bus, including visits to the Nikola Tesla Museum and the Saint Sava Temple. | |

DETAILED PROGRAM OF THE SPECOM 2024 CONFERENCE

26th International Conference on Speech and Computer – SPECOM 2024

November 25-27, 2024, Hotel Crowne Plaza, Belgrade, Serbia

<https://specom2024.ftn.uns.ac.rs/>

25th November 2024, Monday, 09:00 - 17:00 (hybrid mode, CET, UTC+1)

First Multi-Regional IEEE Standardisation Training Workshop

Why Standards Matter: How IEEE Standards Drive Industry Advancement and Foster Entrepreneurial Success

Hybrid event, No Admission Charge <https://cscn2024.ieee-cscn.org/workshop/standards>

(If the registration concluded, you can ask for a few reserved places at specom2024@uns.ac.rs)

OPENING CEREMONY of TELFOR and SPECOM Conferences

Tuesday, November 26, 2024, 10:30-12:30 (hybrid mode, CET, UTC+1) Hall Pacific&Atlantic

Chairpersons: Representatives of Conferences: TELFOR & SPECOM

Introduction

Welcome Messages

Recognitions

Invited Presentation

1. "6G Opportunities on the Paradigm of AI and Sensing", Dr Konstantinos Manolakis, Nokia
2. "Preserving Language Heritage Through Speech Technology: The Case of Upper Sorbian – Part I", Ivan Kraljevski et al, Fraunhofer

Introduction of SPECOM conference and Program announcement – Alexey Karpov

Conclusions

SPECOM Keynote Lecture 1: Tuesday, November 26, 2024,

Part 1: 12:00-12:20 (CET, UTC+1) Hall Pacific&Atlantic

Part 2: 14:00-14:30 (CET, UTC+1) Hall Baltic&Aegean

Chairperson: Vlado Delić

Preserving Language Heritage Through Speech Technology: The Case of Upper Sorbian (Part 2). [Ivan Kraljevski](#), Frank Duckhorn, Daniel Sobe, Constanze Tschoepe and Matthias Wolf; Fraunhofer IKTS - Dresden, Foundation for the Sorbian People - Bautzen, Brandenburg University of Technology - Cottbus, Germany

SPECOM Keynote Lecture 2: Wednesday, November 27, 2024, 11:00-11:40 (CET, UTC+1) Hall Baltic&Aegean

Chairperson: Alexey Karpov

Retrospective and Perspectives of TTS & STT Technology Development and Implementation for South Slavic Under-Resourced Languages. [Milan Sečujski](#), Branislav Popović, Darko Pekar, Nikša Jakovljević, Edvin Pakoci, Siniša Suzić, Tijana Nosek, Nikola Simić, Vuk Stanojev and Vlado Delić: FTS University of Novi Sad, Serbia

Session 1: Speech and Language Resources

(6 presentations (2 remotely) per 20 minutes)

Tuesday, November 26, 2024, 14:30-16:30 (hybrid mode, CET, UTC+1) Hall Baltic&Aegean

Chairpersons: Branislav Gerazov and Siniša Suzić

- 1.1. **The ParlaSpeech Collection of Automatically Generated Speech and Text Corpora from Parliamentary Proceedings.** Nikola Ljubešić, [Peter Rupnik](#) and Danijel Koržinek; JSI and UoLj - Ljubljana, Slovenia and PJAIT - Warsaw, Poland
- 1.2. **Bulgarian Speech Resources in the CHILDES System.** [Velka Popova](#) and Dimitar Popov; KPUS - Shumen, Bugarska
- 1.3. **Harnessing Knowledge Distillation for Enhanced Text-to-Text Translation in Low-Resource Languages.** Manar Ouled Ahmed, Zuheng Ming and [Alice Othmani](#); Declic AI Research, USPN and UPE - Paris, France
- 1.4. **Multiword Units in Russian Everyday Speech: Empirical Classification and Corpus-Based Studies.** Natalia Bogdanova-Beglarian, Olga Blinova, Maria Khokhlova, Tatiana Sherstinova and [Tatiana Popova](#); SPSU and HSEU - Saint Petersburg, Russia
- 1.5. **ESC Corpus of Spoken Russian: Everyday Student Conversations Captured through Continuous Speech Recording in Natural Communicative Environments.** [Tatiana Sherstinova](#) and Irina Petrova; HSEU - Saint-Petersburg, Russia (remotely)
- 1.6. **OpenAV: Bilingual Dataset for Audio-Visual Voice Control of a Computer for Hand Disabled People.** [Denis Ivanko](#), Dmitry Ryumin, Alexandr Axyonov, Alexey Kashevnik and Alexey Karpov; SPC RAS - Saint-Petersburg, Russia (remotely)

Session 2: Computational Paralinguistics

(6 presentations (3 remotely) per 20 minutes)

Tuesday, November 26, 2024, 17:00-19:00 (hybrid mode, CET, UTC+1) Hall in front of Mediterranean&Adriatic

Chairpersons: Wolfgang Minker and Branislav Popović

- 2.1. **A Cross-Multi-Modal Fusion Approach for Enhanced Engagement Recognition.** [Denis Dresvyanskiy](#), Alexey Karpov and Wolfgang Minker; UU - Ulm, Germany, ITMO and SPC RAS - Saint-Petersburg, Russia
- 2.2. **Automatic Assessment of Signs of Alcohol Dependency Syndrome from Spontaneous Speech.** [Gábor Gosztolya](#), Lázár András Bence, Ildiko Hoffmann, Otilia Bagi, Fruzsina Fanni Farkas, Janka Gajdics, László Tóth and János Kálmán; HUN-REN–SZTE and UoS - Szeged, and HUN-REN - Budapest, Hungary
- 2.3. **RAG and Few-Shot Prompting in Emotional Text Generation.** Elizaveta Vologina, Anastasia Matveeva, [Olesia Makhnytkina](#), Yuri Matveev and Nursaule Burambayeva; ITMO - Saint-Petersburg, Russia and LNGENU - Astana, Kazakhstan
- 2.4. **Automatic Detection of Irony Based on Acoustic Features and Facial Expressions.** [Uliana Kochetkova](#), Pavel Skrelin, Vera Evdokimova, Nikolai Borisov, Pavel Scherbakov, Petr Fedkin and Rada German; SPSU - Saint-Petersburg, Russia (remotely)
- 2.5. **Sentiment Analysis for Egyptian Arabic-English Code-Switched Data using Traditional Neural Models and Advanced Language Models.** [Ahmed Sherif](#) and Caroline Sabty; GIU - Cairo, Egypt (remotely)
- 2.6. **An Enhanced Compact Convolution Transformer for Age, Gender and Emotion Detection in Egyptian Arabic Speech.** [Aya Abdalla](#), Nada Sharaf and Caroline Sabty; GIU - Cairo, Egypt (remotely)

Session 3: Speaker Recognition

(5 presentations (4 remotely) per 18 minutes)

Wednesday, November 27, 2024, 09:00-10:30 (hybrid mode, CET, UTC+1) Hall Baltic&Aegean

Chairpersons: Jacek Kudera and Nikša Jakovljević

- 3.1. **Voice Cloning and Mismatch Conditions in Forensic Automatic Speaker Recognition.** [Jacek Kudera](#), Miriam Coccia, Sharifeh Fadaeijouybari, Till Preidt, Akshay Ranjan and Angelika Braun; TU - Trier, Germany
- 3.2. **On the Influence of CNN-based Feature Learning Modules in Neural Speaker Verification Framework.** [Jahangir Alam](#) and Md Shahidul Alam; CRIM - Montreal, Quebec, Canada (remotely)
- 3.3. **Transformation of Emotional Speech to Anger Speech to Reduce Mismatches in Testing and Enrollment Speech for Speaker Recognition System.** [Shalini Tomar](#) and Shashidhar G. Koolagudi; NIT - Surathkal, Karnataka, India (remotely)
- 3.4. **Investigating Data Requirements for Hindi Speaker Recognition: A Comparative Study with English.** Parth Khadse, [Sabyasachi Chandra](#), Puja Bharati, Debolina Pramanik, G Satya Prasad, Aniket Aitawade and Shyamal Kumar Das Mandal; IIT - Kharagpur, West Bengal, India (remotely)
- 3.5. **Practical Evaluation and Validation of Methods for Automatic Speaker Identification (as Applied to Various Languages).** Rodmonga Potapova, Vsevolod Potapov and [Irina Kuryanova](#); MSLU, LMSU and IAML - Moscow, Russia (remotely)

Session 4: Speech Synthesis and Perception

(4 presentations (0 remotely) per 20 minutes)

Wednesday, November 27, 2024, 11:40-13:00 (hybrid mode, CET, UTC+1) Hall Baltic&Aegean

Chairpersons: Elena Lyakso and Milan Sečujski

- 4.1. **End-to-End Speech Synthesis for the Serbian Language Based on Tacotron.** [Tijana Nosek](#), Siniša Suzić, Milan Sečujski, Vuk Stanojev, Darko Pekar and Vlado Delić; FTS UNS - Novi Sad, Serbia
- 4.2. **ChildTinyTalks (CTT): A Benchmark Dataset and Baseline for Expressive Child Speech Synthesis.** [Shaimaa Alwaisi](#), Mohammed Salah Al-Radhi and Géza Németh; BUTE - Budapest, Hungary
- 4.3. **Assessment of Children's Ability to Manifest Emotions in Facial Expressions, Voice and Speech by Humans, Automatic, and on a Likert Scale.** [Elena Lyakso](#), Olga Frolova, Anton Matveev, Aleksandr Nikolaev and Ruban Nersisson; SPSU - Saint-Petersburg, Russia and VIT - Vellore, India
- 4.4. **In Pursuit for the Best Error Metric for Optimisation of Articulatory Vowel Synthesis.** [Branislav Gerazov](#), Paul Konstantin Krug, Daniel Van Niekerk, Anqi Xu, Peter Birkholz and Yi Xu; FEEIT - Skopje, North Macedonia, TUD - Dresden, Germany and UCL - London, UK

Session 5: Automatic Speech Recognition

(5 presentations (2 remotely) per 20 minutes)

Wednesday, November 27, 2024, 14:30-16:10 (hybrid mode, CET, UTC+1) Hall Baltic&Aegean

Chairpersons: Géza Németh and Irina Kipyatkova

- 5.1. **Comparison of Well- and Lower-Resourced Self-Training in ASR.** [Yue Luo](#) and Péter Mihajlik; BUTE and HUN-REN - Budapest, Hungary
- 5.2. **Towards a Livvi-Karelian End-to-End ASR System.** [Irina Kipyatkova](#), Ildar Kagiroy, Mikhail Dolgushin and Alexandra Rodionova; SPC RAS - Saint-Petersburg, Russia
- 5.3. **Benchmarking Whisper under Diverse Audio Transformations and Real-time Constraints.** [Sergei Katkov](#), Antonio Liotta and Alessandro Vietti; FUBB - Bolzano, Italy

5.4. Advances in OpenASR21 Evaluation with Increased Temporal Resolution for Speech Self-Supervised Learning Models. [Vishwa Gupta](#); CRIM - Montreal, Quebec, Canada (remotely)

5.5. Pre-Training and Adverse Audio Samples for Data-Efficient Wake Word Detection. Manuel Torralbo Lezana, Ariane Méndez Amuchategi, Maia Aguirre Pascual de Zulueta and [Arantza Del Pozo Echezarreta](#); BRTA - Donostia, San Sebastián, Spain (remotely)

Poster session 1: Affective Computing (9 posters (5 remotely) with 5 min oral introduction)

Tuesday, November 26, 2024, 14:30-16:30 (hybrid mode, CET, UTC+1) Hall in front of Mediterranean&Adriatic
Chairpersons: Yuri Matveev and Nikola Simić

P1.1. Emotion Recognition by Vocalizations of Nonhuman Primates: Human and Automatic Classification. [Olga Frolova](#), Anton Matveev, Elena Lyakso, Tamara Kuznetsova and Inna Golubeva; SPSU and PIP RAS - Saint-Petersburg, Russia

P1.2. Multimodal Emotion Recognition using Compressed Graph Neural Networks. [Tijana Đurkić](#), Nikola Simić, Siniša Suzić, Dragana Bajović, Zoran Perić and Vlado Delić; FTS UNS - Novi Sad, Serbia

P1.3. Utilizing Speaker Models and Topic Markers for Emotion Recognition in Dialogues. [Olesia Makhnytkina](#), Yuri Matveev, Alexander Zubakov and Anton Matveev; ITMO - Saint-Petersburg, Russia

P1.4. How Children Recognize Emotions from Video and Audio. [Elena Lyakso](#), Olga Frolova, Aleksandr Nikolaev, Severin Grechanyi, Yulia Filatova and Ruban Nersisson; SPSU - Saint-Petersburg, Russia and VIT - Vellore, India

P1.5. Neurophysiological Correlates of Textual Modulation in Visual Stimuli: An Experimental Study of Russian and English Memes. Rodmonga Potapova, Vsevolod Potapov, Ekaterina Karimova, Leonid Motovskikh and [Nikolay Bobrov](#); MSLU, LMSU and IHNAN - Moscow, Russia (remotely)

P1.6. Influence of Linguistic and Sociolinguistic Factors on Speech Rate Perception. [Anastasia Ananeva](#) and Uliana Kochetkova; SPSU - Saint-Petersburg, Russia (remotely)

P1.7. MMHS: Multimodal Model for Hate Speech Intensity Prediction. Aman Goel and [Abhishek Poswal](#); CMU - Pittsburgh, PA, USA and HKUST - Hong Kong (remotely)

P1.8. DuFCALF: Instilling Sentience in Computerized Song Analysis. [Himadri Mukherjee](#), Matteo Marciano, Ankita Dhar and Kaushik Roy; WBSU - Berunanpukhuria, West Bengal, and SNU India, and NYU - Abu Dhabi, UAE (remotely)

P1.9. AutoMode-ASR: Learning to Select ASR Systems for Better Quality and Cost. Ahmet Gündüz, [Yunsu Kim](#), Kamer Ali Yüksel, Mohamed Al-Badrashiny, Thiago Castro Ferreira and Hassan Sawaf; aiXplain Inc. - San Jose, CA, USA (remotely)

Poster session 2: Speech Processing for Medicine (9 posters (4 remotely) with 5 min oral introduction)

Wednesday, November 27, 2024, 11:40-13:00 (hybrid mode, CET, UTC+1) Hall in front of Mediterranean&Adriatic
Chairpersons: László Tóth and Vuk Stanojev

P2.1. Investigating the Utility of wav2vec 2.0 Hidden Layers for Detecting Multiple Sclerosis. [Gábor Gosztolya](#), László Tóth, Veronika Svindt, Judit Bóna and Ildiko Hoffmann; HUN-REN-SZTE and UoS - Szeged, and HUN-REN and ELTE - Budapest, Hungary

P2.2. Cross-Cultural Automatic Depression Detection based on Audio Signals. [Danila Mamontov](#), Sebastian Zepf, Alexey Karpov and Wolfgang Minker; UU - Ulm, Germany, ITMO and SPC RAS - Saint-Petersburg, Russia

P2.3. Detecting Depression from Audio Data. [Mary Idamkina](#) and Andrea Corradini; UoL - Liverpool, UK and MCI - Innsbruck, Austria

P2.4. Exploring MetaConformer for Speech Enhancement. Lukas Foerner and [Maximilian Dauner](#); UHA - Augsburg and MUAS - Munich, Germany

P2.5. Approach to Assessing the Quality of Syllable Pronunciation by Patients in the Process of Speech Rehabilitation Based on Comparison with Healthy Speakers. German Egle, [Dariya Novokhrestova](#), Svetlana Tomilina and Evgeny Kostyuchenko; TUSUR - Tomsk, Russia

P2.6. Binary and Multiclass Classification of Dysphonia Using Whisper Encoder and One-Dimensional Convolutional Neural Network. [Dosti Aziz](#) and David Sztahó; BUTE - Budapest, Hungary and UoS - Sulaymaniyah, Iraq (remotely)

P2.7. A Comparative Study for Contextualized Spoken Answer Classification in German Medical Questionnaires. [Philipp L. Harnisch](#), Daniel Schuhmann and Stefan Hillmann; TUB - Berlin, Germany (remotely)

P2.8. Depression Classification using Token Merging-based Speech Spectrotemporal Transformer. [Lokesh Kumar](#), Kumar Kaustubh and S R Mahadeva Prasanna; IIT - Dharwad, Karnataka, India (remotely)

P2.9. Integration of Short-Term and Long-Term Harmonic Peaks in a Two-Level Discriminative Weight Training Framework for Voice Activity Detection. [Yingwei Tan](#); VMIT - Beijing, China (remotely)

Poster session 3: Natural Language Processing (9 posters (5 remotely) with 5 min oral introduction)

Wednesday, November 27, 2024, 14:30-16:10 (hybrid mode, CET, UTC+1) Hall in front of Mediterranean&Adriatic

Chairpersons: Gábor Gosztolya and Tijana Nosek

P3.1. Bias Unveiled: Enhancing Fairness in German Word Embeddings with Large Language Models. [Yasser Saeid](#) and Thomas Kopinski; SWUAS - Meschede, Germany (remotely)

P3.2. How to detect imbalances in the Google Books Ngram corpus? [Valery Solovyev](#) and Anna Ivleva; KFU - Kazan, Russia

P3.3. Ancient Egyptian Hieroglyphic Texts Structure Identification. [Radek Marik](#), Renata Landgráfová and Jiří Liška; CTU and CU - Prague, Czech Republic

P3.4. Multidimensional Rhythm: Comparing Rhythmic Properties of Australian and New Zealand Monologues. [Anna Borzykh](#) and Tatiana Shevchenko; MSLU - Moscow, Russia

P3.5. Separating Party Conversation by Applying Contrastive Learning Methodology. Anandakumar Singaravelan and [Jia-Lien Hsu](#); FJCU - New Taipei City, Taiwan

P3.6. Predicting the Valence Rating of Russian Words Using Various Pre-Trained Word Embeddings. Vladimir Bochkarev, [Andrey Savinkov](#) and Anna Shevlyakova; KFU - Kazan, Russia (remotely)

P3.7. Cross-Lingual Summarization of Speech-to-Speech Translation: A Baseline 115. [Pranav Karande](#), Balaram Sarkar and Chandresh Kumar Maurya; IITI - Indor, Madhya Pradesh, India (remotely)

P3.8. Human and Machine Keyphrase Perception in Russian Text and Speech. [Daria Guseva](#), Olga Mitrofanova and Mikhail Dolgushin; SPSU and SPC RAS - Saint-Petersburg, Russia (remotely)

P3.9. Conformer LLM - Convolution Augmented Large Language Models. [Prateek Verma](#); US - Stanford, California, USA (remotely)