

Speech, Music and Mind 2020

Detecting and Influencing Mental States with Audio

A Satellite Workshop of Interspeech 2020

23 OCTOBER, NANJING

The third International Workshop on Speech, Music and Mind 2020 (SMM20): Detecting and Influencing Mental States with Audio, an ISCA-approved satellite workshop of INTERSPEECH 2020, was held on 23-Oct-2020 on a digital platform. The workshop brought together, from both academia and industry, participants interested in understanding the interplay between the human mind and sound/music/speech. The aim of the workshop was to further the state of the art in detecting and influencing mental states with audio. The 2020 edition of the workshop emphasized multi-modal approaches.

The specific topics for the workshop were:

- Detecting stress, emotion or mental states of people from realistic speech
 - Multi-modal approaches: using other modes such as video and sensor data in addition to speech
 - Relevance of language models for mental state detection
 - Cross-corpus detection on non-acted speech databases in multiple languages and realistic environments
- Effects of audio on stress, emotion and mental states of people
 - Audio-Visual Perception of music
 - Analysis of brain signal responses to audio and visual stimulus
 - Evaluation and Applications: augmented reality, art installations, music animations, computer games, etc.
- Topics of general interest in the context of stress, emotion and mental states
 - Approaches of Explainable AI in music and speech
 - Novel signal processing or machine learning techniques
 - Sounds at inaudible frequencies
 - Novel protocols for assessing mental states, inducing stress or emotion
 - Applications

Program

The program consisted of accepted papers based on at least two reviews, which were presented by authors preceded by interesting and insightful invited talks. The first session (Session A) was themed on the influence of audio over the mind, while the second session (Session B) focused on detecting emotion from speech. Each session had one keynote talk related to the session theme.



Session A: Influencing mental states with Audio

Prof. Haifeng Li from the Harbin Institute of Technology delivered the keynote speech on:

Cognitive mechanism of auditory emotion and inspiration for emotion recognition

The following papers were presented.

Aayush Surana, Yash Goyal, Vinoo Alluri,

Static and Dynamic Measures of Active Music Listening as Indicators of Depression Risk

Venkata S Viraraghavan, Vasundhara Agrawal, Rahul Dasharath Gavas, Tince Varghese, Varnika Naik, Mayuri Duggirala, Ramesh K Ramakrishnan,

Grammar-constrained music generation for unconstrained doodling

Session B: Detecting mental states from Audio

Prof. Carlos Busso from the University of Texas at Dallas delivered the keynote speech of this session on:

Multimodal emotion recognition: Understanding the production process before modeling multimodal behaviors

The following papers were presented.

Devi Bhavani Kadali and Vinay Kumar Mittal,

Studies on Paralinguistic Sounds, Emotional Speech and Expressive Voices

Meghna Pandharipande, Upasana Tiwari, Rupayan Chakraborty, Sunil Kumar Kopparapu,

Ranking Contact Center Conversations using Dynamic Programming based Pattern Matching

Rini A Sharon, Hema A Murthy,

Correlation based Multi-phasal models for improved imagined speech EEG recognition

Venkata S Viraraghavan, Rahul D Gavas, Ramesh K Ramakrishnan,

Role of emotion words in detecting emotional valence from speech

Review Process

Each submitted paper was reviewed by at least two members of the Scientific Committee and received an overall score that was weighted by the reviewer's rating and their confidence.

Scientific Committee

Prof. Alexandro Meireles, Federal University of Espirito Santo

Prof. Anil Vuppala, IIIT, Hyderabad

Prof. Hema Murthy, IIT, Madras

Prof. Maciej Karpinski, University Poznan

Prof. Maura McDonnell, Trinity College Dublin

Prof. Nicolas Obin, IRCAM / CNRS / Sorbonne Université

Prof. Vinoo Alluri, IIIT, Hyderabad, India

Prof. Kejun Zhang, Zhejiang University

Dr. Pranaw Kumar, C-DAC MUMBAI, India

Prof. Suryakanth V Gangashetty, IIIT, Hyderabad

Prof. V Ramasubramanian, IIIT, Bangalore

Dr. Ajay Srinivasamoorthy, Amazon.com, India

Dr. Mayuri Duggirala, TCS Research and Innovation

Dr. Sunil Kumar Kopparapu, TCS Research and Innovation

Dr. Svetlana Rudenko, Bray Institute of Further Education

Dr. Shengcheng Li, Beijing University of Posts and

Telecommunications

Dr. Sébastien Le Maguer, Trinity College, Dublin

Workshop chairs

Venkata S Viraraghavan

Dr. Shao Xi

Alexander Schindler

Dr. João P. Cabral

Gauri Deshpande

Sachin Patel

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