

Speech, Music and Mind 2022

Detecting and Influencing Mental States with Audio
Satellite Workshop of Interspeech 2022

The fifth International Workshop on Speech, Music and Mind 2022 (SMM22): Detecting and Influencing Mental States with Audio, an ISCA-approved satellite workshop of INTERSPEECH 2022, was held on 15-Sept-2022 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 2022 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.

Dr. Nicholas Cummins (Lecturer in AI for Speech Analysis for Healthcare, Dept of Biostatistics & Health Informatics, Institute of Psychiatry, Psychology & Neuroscience King's College London) delivered the keynote speech on:

The Potential of smartphones voice recordings to monitor depression severity



Rahul Gavas (TCS) chaired the first session and following papers were presented:

Namhee Kwon, Shahruk Hossain, Nate Blaylock, Henry O'Connell, Naomi Hachen, Joseph Gwin

Detecting Anxiety from Phone Conversations using x-vectors

Edward L. Campbell, Laura Doc'io-Fern'andez, Carmen Garc'ia-Mateo, Andre Wittenborn, Jarek Krajewski, Nicholas Cummins

Automatic detection of short-term sleepiness state. Sequence-to-Sequence modelling with global attention mechanism.

Dr. Preeti Rao (Department of Electrical Engineering, IIT Bombay, Powai) delivered the keynote speech on:

Exploring the correspondence between singers' gestures and melody with deep learning

Subhrojyoti Roy Chaudhuri (TCS) chaired the second session and delivered a short Talk on:

Wellbeing oriented music selection, overview and opportunities.

The following papers were presented:

Iruno Zubiaga, Ignacio Menchaca, Mikel de Velasco, Raquel Justo
Mental Health Monitoring from Speech and Language

Hafiz Shehbaz Ali, Siddique Latif
Multi-task learning from Unlabelled Data to Improve Cross Language Speech Emotion Recognition

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. Beatriz Raposo de Medeiros, University of Sao Paulo, Brazil
Prof. Hema Murthy, IIT, Madras
Prof. Maciej Karpinski, University Poznan
Prof. Prashanta Ghosh, IISc, Bangalore
Prof. Shantala Hegde, NIMHANS, Bangalore
Prof. Urs Markus Nater, University of Vienna

Sri Rama Murty Kodukula, Department of EE, IIT, Hyderabad
Prof. V Ramasubramanian, IIIT, Bangalore
Dr. Ajay Srinivasamoorthy, Amazon.com, India
Prof. Guruprasad Seshadri, Audience Communications Systems India Pvt. Ltd. , Bangalore
Dr. Sunil Kumar Kopparapu, TCS Research and Innovation
Prof. Manuela Marin, University of Innsbruck, University of Vienna

Workshop chairs

Meghna
Pandharipande

Alexander Schindler

Venkata S
Viraraghavan

Dr. João P. Cabral