

Call for Papers (CFP)

Special Track on Artificial Intelligent Systems for Audio Signal Processing

2nd International Conference on Advances in Artificial Intelligence for Society (ICA2S-2026)

The **Indian Institute of Information Technology Bhopal (India)**, in collaboration with the **University of Vizja (Warsaw, Poland)**, invites high-quality research contributions for a special track on **Artificial Intelligent Systems for Audio Signal Processing** at **ICA2S-2026**.

Scope of the Special Track

Recent advancements in Artificial Intelligence (AI) have significantly transformed the field of audio signal processing, enabling intelligent systems that can perceive, interpret, and respond to audio signals in complex environments. This special track focuses on the development of AI-driven methodologies and applications tailored to real-world challenges, particularly in **resource-constrained and multilingual contexts such as India**.

The track aims to bring together researchers, practitioners, and industry experts to explore innovative solutions in areas such as **automatic speech recognition (ASR), music information retrieval (MIR), healthcare audio analytics, embedded systems, and speech technologies**.

Special emphasis will be placed on:

- Low-resource and multilingual scenarios
 - Noisy and real-world environments
 - Culturally contextualized AI solutions
 - Edge deployment and efficiency
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Topics of Interest

Submissions are invited on (but not limited to) the following topics:

Speech and Language Processing

- Low-resource ASR for Indian languages
- Code-switching ASR in multilingual environments
- Singing voice recognition for Indian music
- Speech synthesis (TTS) for Indian languages
- Voice assistants for regional languages

Audio Intelligence and Machine Learning

- Audio source separation (Indian instruments)

- Adversarial robustness in audio classification
- Efficient audio embeddings and representation learning
- Agentic AI for speech and audio applications

Music Information Retrieval (MIR)

- Raga classification and Indian music analysis
- Audio segmentation for broadcast and media monitoring

Embedded and Edge AI

- TinyML for audio event detection
- Embedded audio processing for smart devices
- Optimization of ASR models for microcontrollers

Healthcare and Social Impact Applications

- Audio-based health monitoring (e.g., cough detection)
- Speech pathology screening and therapy tools
- Infant cry and baby talk analysis
- Voice biomarkers for neurological disorders

Applied AI Systems

- ASR for education (language learning tools)
- ASR for agriculture (voice-controlled systems)
- Emergency response systems using speech interfaces
- Real-time audio enhancement for communication

Security and Biometrics

- Audio-based biometric authentication systems

Submission Guidelines

- Authors are invited to submit **original, unpublished research papers** that are not under review elsewhere.
- Submissions should follow the **conference formatting guidelines** (as specified on the ICA2S-2026 website).
- Papers will undergo a **peer-review process** based on originality, technical quality, relevance, and clarity.
- Accepted papers will be included in the **conference proceedings** and presented during the special track session.

The details of the session chairs:

I. Organizer: Name: Dr. Arvind Kumar

- Designation: Post Doc Research Fellow
- Department: Language Development Department
- Institution: Max Planck Institute of Psycholinguistics, Nijmegen
- Country: The Netherlands
- Email: arvind.kumar@mpi.nl
- ORCID (optional): 0000-0003-3947-7757

II. Co-Organizer (if any):

- Name: Dr. Biswajit Karan Designation: Assistant Professor
- Department: Department of CSE
- Institution: Sarla Birla University, Ranchi
- Country: India
- Email: biswajit.karan@sbu.ac.in ORCID (optional):

III. Co-Organizer (if any):

- Co-Organizer (if any): Name: Dr. Jaya Prakash Sahoo
- Designation: Assistant Professor
- Department: Department of EECE
- Institution: Gitam University, Bengaluru
- Country: India Email: jsahoo@gitam.edu