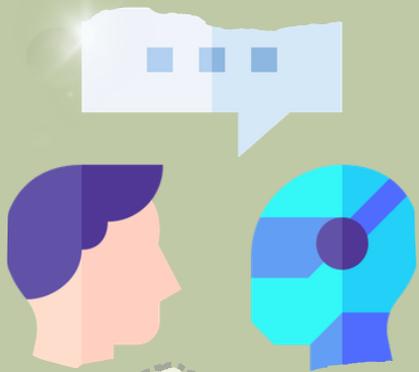




राष्ट्रीय प्रौद्योगिकी संस्थान सिक्किम  
NATIONAL INSTITUTE OF TECHNOLOGY SIKKIM  
(An Institute of National Importance)

# 5 days Advanced workshop on "AI Tools and Approaches for Speech Disorder Assessment and Healthcare"

(20<sup>th</sup> to 24<sup>th</sup> April, 2026)



**Organized by**

Department of  
Electronics and Communication  
Engineering



NATIONAL INSTITUTE OF TECHNOLOGY SIKKIM  
Barfung Block, Ravangla, South Sikkim - 737139

## About Sikkim

Sikkim, a small but picturesque state nestled in the northeastern part of India, is known for its breathtaking landscapes, rich biodiversity and vibrant cultural heritage. Bordered by Bhutan, Tibet and Nepal, it is home to the majestic Kanchenjunga, the third highest mountain in the world. Sikkim boasts a unique blend of ethnic communities, including Lepchas, Bhutias and Nepalese, each contributing to its diverse traditions and festivals. The state is also noted for its environmental consciousness, being the first fully organic state of India.



## Objectives of the event

- Basics of speech production, disorders and clinical assessment.
- Modern AI and deep learning methods for speech analysis.
- Feature extraction using signal processing and representation learning.
- AI-based assessment of common speech and voice disorders.
- Evaluation metrics, ethics and clinical deployment issues.
- Use of open-source tools, datasets and work overflows.
- Robustness and generalization across speakers and conditions.
- Interpretability and reliability for clinical decision support.

## Topics to be covered

- Speech production mechanisms and clinical speech disorders
- AI and deep learning for speech and voice analysis
- Feature representations for speech: signal and learned methods
- Automated assessment of speech and voice pathologies
- Model evaluation, ethics, and real-world clinical use
- Open datasets, tools, and practical workflows
- Model robustness across speakers and recording conditions

## About the Institute

National Institute of Technology Sikkim (NIT Sikkim), established in 2010 under the Government of India's 11<sup>th</sup> Five-Year Plan, is one of the country's prominent institutes of higher education. Nestled in the serene Himalayan region, it offers undergraduate, post graduate and doctoral programs across engineering, technology and applied sciences. The institute is dedicated to delivering quality education while promoting innovation and research. Over the years, NIT Sikkim has built a strong academic reputation, with its students consistently earning placements in leading national and international companies.

## About the Department

The Department of Electronics and Communication Engineering (ECE) at NIT Sikkim, established in 2010, offers B.Tech, M.Tech and Ph.D. programs with strong focus areas such as VLSI design, communication systems, signal processing, microwave engineering and semiconductor technologies. Supported by modern labs and a dedicated faculty team, the department blends strong theoretical foundations with practical exposure. Through internships, industry interaction, expert lectures and activities by its technical club Anuvrat, it fosters holistic student development and prepares graduates for advanced careers in industry and research.

## About the Workshop

This workshop introduces the application of modern AI and deep learning techniques to speech and voice analysis in clinical contexts. It covers the fundamentals of speech production and disorders, methods for extracting and learning meaningful speech representations, and AI-based approaches for assessing common speech and voice pathologies. Participants will gain hands-on exposure to open-source tools, datasets, and practical workflows, while also addressing challenges related to robustness, evaluation, ethics, and interpretability for real-world clinical deployment.

## Other instructions

The workshop will be conducted in **offline mode**.

- Shared accommodation and meals will be provided by NIT Sikkim for all participants.
- NIT Sikkim, Ravangla, is located in an altitude of 2100 meters and experiences cold weather throughout the year. Participants are advised to carry adequate warm clothing and an umbrella.
- For any queries participants are advised to contact the workshop conveners.

## Resource persons

Eminent academicians from IITs & NITs, along with experienced professionals from Signal processing and AI/ML industries.

## Who can attend

Faculty members, Research Scholars & PG Scholars of different technical institutions and industry personals.

## PATRON

Prof. Mahesh Chandra Govil,  
Director, NIT Sikkim

## CHAIR PERSON

Dr. Aurobinda Panda,  
Assistant Professor, EEE Dept., NIT Sikkim

## CONVENORS

Dr Hemant Kumar Kathania  
Assistant Professor, ECE Dept., NIT Sikkim

Dr. Jeetendra Singh  
Assistant Professor, ECE Dept., NIT Sikkim

## ORGANIZING COMMITTEE

Dr. Sanjay Kumar Jana  
Associate Professor, ECE Dept., NIT Sikkim

Dr. Reshmi Dhara  
Assistant Professor, ECE Dept., NIT Sikkim

Dr. Vishal Vishnoi  
Assistant Professor, ECE Dept., NIT Sikkim

Dr. Varun Gupta  
Assistant Professor, ECE Dept., NIT Sikkim



## Registration and general information

Interested candidates are required to register for the workshop using Google form link or QR code provided below.

Scan here for registration



**Registration Fee: Rs 500/- only**

The number of participants is limited and will be selected on a first-come, first-served basis and a prerequisite.

**Last date of registration: 05<sup>th</sup> April, 2026**

Participants can complete their payment through the following details:

Account Holder's Name: Director NIT Sikkim  
Account Number :31996269106  
Bank Name : State Bank of India  
Branch and IFSC : Ravangla, SBIN0007218

## CONTACT US

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Mobile: +91-9732900589

Dr. Jeetendra Singh  
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Mobile: +91 8729098787

## Our speakers...



**Prof. Shrikant Narayanan**  
Professor, University of  
Southern California,  
USA



**Prof. Mikko Kurimo**  
Professor, Aalto  
University, Finland



**Prof. Samarendra Dandapat**  
Professor, IIT Guwahati



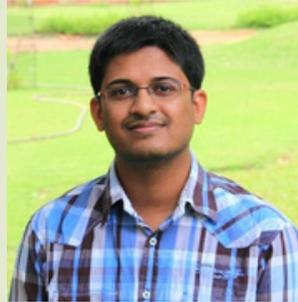
**Dr. Mathew Magimai Doss**  
Senior Researcher,  
Idiap Research Institute,  
Switzerland



**Prof. Priyankoo Sarmah**  
Professor, IIT, Guwahati



**Dr. Sudarsana Reddy Kadiri**  
Research Assistant  
Professor,  
University of Southern  
California, USA



**Dr. Nagaraj Adiga**  
Senior Principal Engineer,  
Outcomes AI  
Bangalore, India



**Dr. Rohan Kumar Das**  
Research and  
Development Manager,  
Fortemedia, Singapore



**Dr. Kumud Tripathi**  
Senior Research Engineer,  
Sony Research India



**Dr. Siva Reddy Gangireddy**  
Principal Data Scientist,  
AI Labs Curriculum  
Associates  
(formerly SoapBox Labs),  
Ireland



**CM Vikram**  
Senior Chief Engineer,  
Samsung R&D,  
Bengaluru, India



**Dr. Jagabandhu Mishra**  
Post Doctoral Researcher,  
University of Eastern  
Finland, Finland

