**e-STC**

**On**

# Artificial intelligence assisted healthcare systems: Innovations in biomedical signal and image processing.

**6th September -10nd September 2024**

An Initiative of

**National Institute of Technology Hamirpur**

*(An Institute of national Importance)*

Hamirpur − 177005, Himachal Pradesh, India


**Organized by**

**Department of Electronics & Communication Engineering**

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## Organizing Committee

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**National Institute of Technology Hamirpur**
**Hamirpur − 177005, Himachal Pradesh, India.**

## About the Institution

National Institute of Technology Hamirpur is one of the thirty-one NITs of the country, established in 1986 as Regional Engineering College, as a joint and cooperative enterprise of the Govt. of India and Govt. of Himachal Pradesh. The goals of the institute as embodied in the logo are truly remarkable in their scope of vision. The Institute provides Undergraduate, Postgraduate and Doctorate Education in Engineering, Sciences & Humanities; fostering the spirit of National Integration among the students, a close interaction with industry and a strong emphasis on research, both basic and applied.

## About the Department

Established in the year 1988, the Electronics & Communication Engineering (E&CE) Department NIT Hamirpur, HP, has built an International reputation for excellence in teaching, research and service. Electronics engineers are changing the world to a comfortable global home. The information and technology revolution has been built on the advances of Electronics. The E&CE Department takes pride in its high National rankings and the International recognition its faculty has received from their peers.

Department of ECE is making exhilarating progress in areas ranging from microelectronics, signal processing, machine learning, mobile communications to VLSI Design Automation. In labs and classrooms, students draw on the expertise and knowledge of our able faculty, integrating practical, hands-on research experience with challenging and interesting course-work. The department runs M.Tech. in VLSI Design Automation & Techniques (VDAT) since 2006, M.Tech in Communication Systems and Networks and Also has over 30 PhD Scholars involved in various research in the department.

## Objective of Workshop

- To present future research directions in biomedical signal and image processing.
- To provide a solid foundation of the use of machine learning in biomedical signal and image classification.
- To present key concepts in multichannel signal processing.
- To present the deep learning networks such as autoencoders, convolutional neural networks and their applications in biomedical signal and image processing.
- To present the key challenges and future directions in AI powered cardiac health monitoring.
- To present recent research trends in the domain of neural signal processing.
- To present recent research trends in the domain of medical image processing and classification.

## Resource Persons/Speakers

Faculties/Experts from IITs, NITs, IIITs, Industries and other premier Institutions/Organizations will deliver the lectures.

## Number of Participants

Number of participants is limited for this e-Workshop. Application will be accepted **on first-cum-first serve basis**.

## Targeted Participants

Faculty members from educational institutes, research scholars, UG/PG/PhD students, and employees from the industries.

## Topics to be Covered

Future research directions in biomedical signal processing, Artificial intelligence with cardiovascular signals, AI powered cardiac health monitoring: methods, key challenges and future directions, Supervised and unsupervised machine learning, Deep neural networks, Autoencoders, Convolutional Neural Networks, Deep Learning Networks: Concepts, Applications in biomedical signal and image processing and Research Directions, Time-Frequency domain signal analysis, Multichannel signal processing for medical data analysis and classification, Brain Source Localization for Brain Disorder Management, Deep learning for Alzheimer's disease characterization and estimation.

## Registration Fee Details

| Participants | Amount (in Rs.) |
|---|---|
| Faculty members or Participants from Academia/R&D Labs | 500/- |
| Students (UG, PG, PhD) | 200/- |
| Participants from Industries | 1000/- |

Participants should have minimum 80% attendance.

## Certificate

e-Certificate will be issued to the participants after successful submitting the feedback form on completion of the online workshop.

**Last Date of Registration:** 5 September 2024

# How to Apply

The interested participants should register by paying the registration fee at SBI-I collect and filling the Google form through the below link:

https://docs.google.com/forms/d/e/1FAIpQLSfQnonBBsFY0jrxsdFb9MR2OlMI_0toQy3t6kFDMHLXk095zA/viewform

**The SBI-I collect has following steps:**

a. Visit SBI collect at https://www.onlinesbi.sbi/sbicollect/icollecthome.htm

b. Select category: Educational Institute.

c. Search for Educational Institutions: NIT Hamirpur and click.

d. Select Payment Category: WORKSHOP STC FDP CONFERENCE

e. Fill up all the details.

f. Address: Filling Postal code is must

g. Submit the form and generate the receipt.