



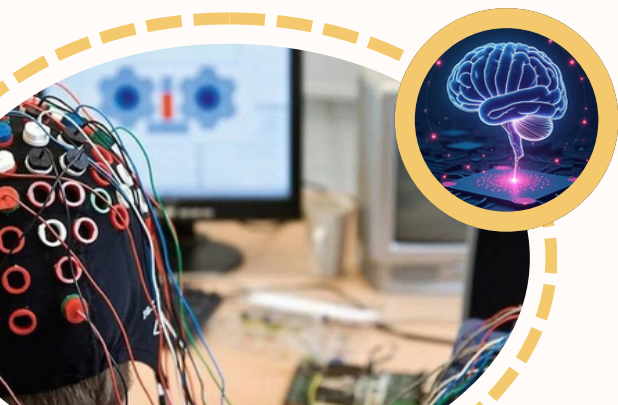
WORKSHOP ON AI APPLICATIONS IN EEG

August 7th - 9th 2026
Mode: Offline

The human brain, one of the most complex biological systems, continuously generates electrical activity as we think, feel, move, or imagine. By capturing these signals using Electroencephalography (EEG), we open a gateway to interpreting brain states and building systems that interact directly with neural activity.

While EEG alone offers valuable insights into brain activity, its true potential is unlocked when combined with Artificial Intelligence (AI). Together, EEG and AI enable powerful applications in brain-computer interfaces, neurological diagnosis, cognitive monitoring, and beyond.

In this workshop, participants will explore how EEG signals are collected, processed, and analyzed using tools like MNE-Python. Working with EEG datasets, they will learn to build AI models for applications such as motor and visual imagery classification, seizure detection, and neurodegeneration analysis. The sessions include guided hands-on activities and expert talks offering a practical foundation in EEG-AI integration.



WORKSHOP HIGHLIGHTS

EEG data collection and preprocessing

Observe live demonstrations of EEG setup and signal acquisition

Learn how to preprocess raw neural signals using filtering, artifact removal, and segmentation techniques.

Machine Learning & Deep Learning for EEG Decoding

Explore how brain signals are decoded into meaningful outputs using ML/DL for tasks such as Motor & Visual Imagery decoding, Epileptic seizure detection, and analysis of neurodegenerative conditions such as AD and PD.

Live Software Sessions with MNE-Python

Gain practical experience in signal processing, Frequency analysis and ICA using MNE-Python.

Talks by Faculty & Neurotechnology Experts

Gain insights from leading researchers and industry professionals. Learn about cutting-edge EEG technologies, real-world applications, and current trends in BCI research from experienced faculty and neurotechnology experts.

SCHEDULE

DAY 1 : Foundations & EEG + AI Basics

(7th Aug 2026)

Time	Session
9.00-10.00	Inaugural Talk by Prof. Srinivasa Chakravarthy
10.00-11.00	Introduction to EEG and system setup: Overview of EEG: Principles and Applications Understanding the 10–20 montage, cap fitting and impedance check demonstration
11.00-12.00	EEG data collection: Resting state Recording: eyes open/closed
12.00-13.00	EEG pre-processing: Signal cleaning using Notch and Bandpass filter Artifact removal: Independent Component Analysis (ICA) using MNE-Python
13.00-14.00	Lunch Break
14.00-17.15	Introduction to ML and DL for EEG: Feature extraction: Power Spectral Density (PSD), Phase Lag Index (PLI) Models: SVM, CNN, LSTM Jupyter pipeline demo: walkthrough of an end-to-end classification task
17.15-17.30	Wrap-up and Q&A

DAY 2: Imagery & Clinical EEG Studies

(8th Aug 2026)

Time	Session
9.00-11.00	Motor Imagery Theory and Lab: Guided lab session using L/R hand imagination tasks Classification of Motor Imagery data offline
11.00-1.00	Visual Imagery Theory and Lab: Explore how imagined objects or scenes are reflected in EEG patterns Signal analysis and classification approaches
13.00-14.00	Lunch Break
14.00-15.30	Epilepsy and Seizure Detection: Introduction to BONN EEG Dataset Basics of spike detection and seizure event annotation
15.30-17.15	Lab: Seizure Classification Comparative modelling using Random forest and CNN architectures
17.15-17.30	Wrap-up and Q&A

DAY 3: Detecting EEG Markers and Neurodegenerative Disorders

(9th Aug 2026)

Time	Session
9.00-11.00	Neurodegenerative Disorder Detection (Parkinson's vs Healthy); Extract Relevant EEG markers, Build and Evaluate ML Classifier
11.00-13.00	Neurodegenerative Disorder Detection (Alzheimer's vs Healthy); Extract Relevant EEG markers, Build and Evaluate ML Classifier
13.00-14.00	Lunch
14.00-17.15	Talks by Faculty & Neurotechnology Experts
17.15-17.30	Closing ceremony and Certificate distribution

Eligibility and Requirements

- Open to undergraduate and postgraduate students, researchers, and professionals.
- Basic familiarity with Python is helpful.
- Participants should bring their own laptop.

Fee details (GST not included)

UG Students --- 3000 INR
PG/PhD students --- 3500 INR
Professionals --- 4000 INR

Registration Procedure

SOP submission by 15th July 2026
Selection Results by 18th July 2026
Registration payment by 30th July, 2026

How to apply?

Stage 1:

- Interested candidates must provide a Statement of Purpose (SOP) detailing their interest in the workshop.
- Based on the SOP, only **50** participants will be selected for the workshop.



[SOP submission link](#)

Stage 2:

- Selected participants will receive a confirmation email and payment link.
- Only confirmed participants are required to pay the registration fee.



What you will receive



Certificate of Participation



Participant e-Handbook: Workshop on AI Applications In EEG

Note

Accommodation is not provided
Snacks will be provided twice a day

Our Contact



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