



EPSCICON 2018 : Pre-conference workshop on EEG, a detailed report

The EEE Department of the College organised a workshop on “Machine Learning Based Brainwaves Electroencephalography (EEG): Decoding and Understanding” on 03 – 04.01.2018 as a prelude to the 4th Edition of the International Conference EPSCICON which was held during 07 – 11.01.2018. The conference was successful in bringing the state-of-the art research and other associated educational activities to Indian researchers and educators through lectures, workshops and short courses by both Indian and international experts.

The conference comprised of Invited lectures, contributed talks by students and young researchers, pre-conference workshops and short courses given by experts in various fields. The pre-conference workshop on “Machine Learning Based Brainwaves EEG Decoding and Understanding” was an important

component of EPSCICON.

The resource person for the workshop was Dr Ebrahim A. Mattar, Assoc. Prof. of Cybernetics and Robotics, University of Bahrain, and a candidate for full professorship. More than 80% of participants were undergraduate and postgraduate students of the College from different disciplines. Rest of the participants were faculty members from different engineering disciplines. A total of 45 participants attended the workshop, out of which 37 were students and 8 were faculty members from different engineering disciplines. The workshop was inaugurated by Dr Sudha Balagopalan, Principal. Ms Remy T, HoD, EEE Dept, introduced the speaker and Dr Nimal Madhu M proposed the vote of thanks.

This workshop gave an introduction to using modern tools and initiatives based on machine intelligence to understand the complex waves associated with EEG. The following are some of the topics covered in detail:

- Benefits of Advanced Robotics Applications
- Data Mining for Robotics Applications
- Machine Learning Tools, Learning Systems, Deep Learning
- Neural Nets, Fuzzy Clustering, PCA, ICA, & SV Machine
- Understanding EEG for Robotics Deep Learning
- EEG: The Experiments and International Setups
- EEG Signals Processing and Filtering
- Decoding and Deep Learning of the EEG Brainwaves
- Results and Verifications of Decoding and Deep Learning of the EEG Brainwaves

The external and internal participants expressed their positive feedback on the programme that they had gained knowledge on machine learning and its applications in the field of electroencephalography. Some of the participants felt the topic was too advanced for them to grasp in detail and some were of the view that the workshop would have been more useful if conducted over a period of 5 days with more hands on

sessions.