JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Department of Electronics and Communication Engineering organized a Three day workshop on "**Computational Tools and Techniques for Biomedical Signal Processing- Advances in Biomedical Engineering**" by the experts from Biopac Systems, USA with Gentech Marketing and Distribution Pvt. Ltd, India from October 10- 12, 2019. It was conducted by Ms. Varnika Talwar, Ms. Taranmeet Kaur, and Mr. Manish Kumar.

The advances in biomedical engineering equipped the physiologists to acquire a wide variety of physiological signals with precision and reproducibility. BIOPAC provides Life Sciences researchers a complete range of powerful, flexible, user friendly hardware and software platforms, aptly designed for obtaining great scientific data in lab settings, MRI, and real-world environments. The Biopac instruments provide unique at the same time versatile hardware/software combinations available as, wired, wireless, wearable or MRI which can be easily used for/on human as well as experimental model systems according to physiologist's requirement. The traditional polygraph is replaced with computerized Data acquisition system (MP150) with Ethernet connectivity to record all physiological parameters in Lab environment. MP150 is a 16-channel system, which includes Acknowledge software with specialized analysis capabilities with applications to over 40 research fields. The new modules are available for electrogastrogram, microelectrode recording, noninvasive blood pressure measurement & electrical bio impedance (cardiac output), and others.

Now BIOPAC BioNomadix wearable wireless devices give freedom to record physiological parameters in real time without restrain. Physiological data can be recorded at workplace, during Yoga maneuvers, Meditation without causing discomfort to subjects. BioNomadix can provide the researcher flexibility to monitor a plethora of signals viz. ECG, EEG, EMG, EOG, EGG, EDA, Pulse, Respiration, Temperature, Cardiac Output, Heal & Toe Strike, Clench Force, Accelerometer, and Goniometer in humane settings. The New BioNomadix Logger allows participants to wear BioNomadix devices and live their lives while it records the data as per the researchers/clinician 's demand. The activity and the signals of various parameters can be 24x7 recorded and tracked using GPS. In addition, the personal audio notes can be synchronized to mark and analyze the events of interest.

BIOPAC provides a range of virtual reality (VR) immersive solutions with physiology data. VR allows you to tightly control the experimental conditions in a complex socio-psychophysiological environment. The scientists can design experiments that are otherwise impossible or prohibitively expensive in the real world. Immersive environments can take the subject anywhere and let you unlock the boundaries of your physical lab space and budget.

BIOPAC VR is useful in studying psychophysiology, rehabilitation, neuromarketing & neuroeconomics, biomechanics & kinesiology, ergonomics, and many others.

In nutshell, Biopac instruments have given impeccable support to life science research and with the advanced BIOPAC instruments will lead the future science.

More than 250 students, 50 participants and 25 faculty members have attended the workshop.

Workshop was a joint effort of Dr. Shruti Jain (Associate Professor, Department of ECE) and Dr. Meenakshi Sood (Assistant Professor, Department of ECE).


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