BCL 2023

Edition IV

भारतीय विज्ञान संस्थान

Veeky Baths

Associate Professor,
Department of Biological Sciences,
BITS, Pilani (K K Birla Goa Campus), India

11 Jan | 16:00 - 17:00

SSVEP and Eye-Blink detection based BCI as Assistive Technologies

Abstract: SSVEP and Eye-Blink based BCI systems have emerged as novels tools to assist physically disabled people, who are either entirely wheelchair bound or lack limbs for communication. Home automation, navigation, and appliance usage are the most common application areas for these systems. Two such applications, developed in our lab, are discussed in this talk. The first one discusses a non-GUI based hardware implementation of device identification, detection and confirmation in home setting using Using SSVEP & Eye-Blink Detection Based Brain-Computer Interface. Furthermore, a coarse Bluetooth-based indoor user localization that may help in expanding the number of devices detected and controlled using SSVEP is also discussed. In the second application, a low-cost prototype of wheelchair automation for the disabled using SSVEP and eye-blink detection based BCI is discussed.

Brief Bio: *Veeky Baths received his Ph.D. Degree from Birla Institute of Technology & Science, Pilani, India in the year 2012. He then obtained an MBA from Goa Institute of Management. Currently he is working as an Associate Professor and heading the Cognitive Neuroscience Lab at BITS, Pilani K. K. Birla Goa Campus. He has received many Prestigious National and International research grants such as iBRAIN. He has 16 years of experience of teaching and research and has published many research articles in reputed conferences and journals. He is an Honorary Board Member of the Association for Reading and Writing in Asia (ARWA). He is a founding member of the Society for the Cognitive Science of Culture (SCSC). The society aims to understand the human mind and how cultural objects (e.g., literacy; religion), including those within culture at macro-level, can shape the human brain and mind. His research interests include Computational Psycholinguistics and Alzheimer's Dementia Detection from Spontaneous Speech using Machine Learning, Brain Computer Interface and Consumer Neuroscience*