

Proposal for a Special Session at ICBME2022.

Title: Brain-Computer Interface, a bridge between science and science fiction.

Neurotechnology is a promising field of science. It shows a great potential in digital transformation and the way human and computer are interacting. It is crucial that university students and recent graduates will be aware of what is going on around the world. Therefore, this session aims to be educational and motivator lecture

Objectives

In my session, I will be introducing the topic of brain-computer interface (BCI) from the basics. This will help to build a general idea for those who still exploring biomedical engineering. It is expected the attenders will have an overview of how BCI works with its possible application. The session will explore both academic and industrial paths of BCI. I will share the real projects I have worked on and what I am currently working on. The session will be organized as follows

- Introducing the topic of Brain-Computer Interface (BCI).
- Spot the light on the applications of BCI in the filed:
 - Healthcare.
 - Cybersecurity
 - Artistic.
 - Entertainment.
- State-of-the art in the field of BCI.
- BCI out of the lab. Industry of BCI.
- What is required to start a BCI Lab. How it works.
- BCI and other fields of science.
 - Blockchain.
 - eXtended Reality (Virtual Reality and Augmented Reality).
 - Rehabilitation.
- Projects at Marche Polytechnic University
- Conclusion with suggested readings for new commers.

Domain

This session will present both current research and practical tools and applications and are intended to be of interest to academic scientists and senior practitioners alike, particularly those working on or near biomedical signal processing and/or machine learning. Audience members will be exposed to the most current research and applications of brain-computer interface.

Qualification of the organizer

The organizer has obtained his bachelor's degree in biomedical engineering from Damascus University in 2018 and his master's degree in biomedical engineering from Marche Polytechnic University (UNIVPM) in 2021. He is currently a PhD Candidate at UNIVPM in the field of Neuro-biometrics with cybersecurity group. He have several published articles in international journals and contributions in an international conferences and meetings. He is a reviewer at IEEE Access and several conferences organized by IEEE. He is a member in Brain-Computer Interface society, IEEE, and Syrian Research & Publication Society.

Organizer

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