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LATIN AMERICAN WORKSHOP ON COMPUTATIONAL NEUROSCIENCE

ENVIGADO (ANT), COLOMBIA

28, 29, 30 NOV - **2023**

Tuesday 28 November	
7:00 AM – 8:30 AM	Registration
8:30 AM – 8:45 AM	Workshop welcome
8:45 AM – 9:30 AM Keynote speaker 1.	Large-scale biophysical models of thalamocortical circuits to study brain function and disease. **Prof. Ph.D. Salvador Durá-Bernal** - State University of New York (SUNY) Downstate Health Sciences University, and Nathan L. Kline Institute for Psychiatric Research - USA
9:30 AM – 10:45 AM Oral presentation of accepted papers Session A – Computational Neuroscience	1. SynchroLINNce – Open-source MATLAB toolbox for neural synchronization and desynchronization assessment in epilepsy animal models - **Sofia Maria Amorim Falco Rodrigues -** Centro Universitário de Lavras (Brazil). 9:30 – 9:45 AM 2. Computational neuroscience and criminal liability in Brazil - **Leonardo Garcia de Mello** - Universidade Federal do Rio Grande do Sul (Brazil). 09:50 – 10:05 AM 3. A Map-based approach to neuronal synchronization **- Sue Rhâmidda** - Universidade de São Paulo (Brazil). 10:10 – 10:25 AM 4. Brains are Probabilistic, Electromagnetic, Non-Classical, and Delicate: A Perspective on Theoretical and Computational Neuroscience – **Juan Fernando Gomez** – IGN(S,E,P) (Colombia). 10:30 – 10:45 AM
10:45 AM – 11:30 AM	Coffee break 1 – Poster session
11:30 AM – 12:15 M Keynote speaker 2.	The functional role of adult neurogenesis in shaping hippocampus-dependent functions, adaptation and stress response - a neurobiological and computational perspective. **Prof. Ph.D. Alexandre Surget** - iBraiN, Inserm, University of Tours - France
12:15 M – 2:00 PM	Open lunch

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2:00 PM – 3:15 PM Oral presentation of accepted papers Session B - Computer Science and Engineering.	1. Fuzzy control with Central Pattern Generators for the locomotion of quadruped robotic systems - **Edgar Rico** – SENA (Colombia). 2:00 – 2:15 PM
	2. Data Augmentation by Adaptative Targeted Zoom – **Jose Hernandez** – Universidad de los Andes (Colombia). 2:20 – 2:35 PM
	3. EEG-Based Alcohol Detection System for Driver Monitoring - **Andres Soler** – NTNU (Norway). 2:40 – 2:55 PM
	4. Predicting brain activity using Transformers – **Hossein Adeli** – Columbia University (USA). 3:00 – 3:15 PM
3:15 PM – 4:00 PM Keynote speaker 3.	Challenges to Linking Brain, Networks, and Behavior. From Living Systems to Artificial Modeling **Prof. Ph.D. Norberto Garcia-Caraisco -** Neurophysiology and Experimental Neuroethology Laboratory (LNNE), University of São Paulo (USP) - Brazil
4:00 PM – 4:30 PM	Coffee break 2 – Poster session
4:00 PM – 5:00 PM	Opening Ceremony.
5:00 PM – 5:30 PM	**FALAN**: relevancia de una federación para las neurociencias en Latinoamérica. **Prof. Ph.D. Francesco Mattia Rossi.**

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Wednesday 29 November	
8:00 AM – 8:45 AM Keynote speaker 4.	Identification of biological and functional biomarkers following trauma brain injuries in young and aged mice. **Prof. Ph.D. Marangelie Criado-Marrero** - University of Florida – USA.
8:45 AM – 10:00 AM Oral presentation of accepted papers. Session C - Neuroscience	1. Epidemiology of traumatic spinal cord injury in Pernambuco/Brazil - **Nivaldo De Vasconcelos** - Federal University of Pernambuco (Brazil). 8:45 – 9:00 AM 2. Relación entre la autoeficacia y la atención medida mediante QEEG entre estudiantes de la IUE – **Edgar López** – Institución Universitaria de Envigado (Colombia). 9:05 – 09:20 AM 3. Visual coding along multiple brain areas – **Nivaldo De Vasconcelos** – Federal University of Pernambuco (Brazil). 09:25 – 09:40 AM 4. Diseño e Implementación de Ambiente Digital Inmersivo para el apoyo en tratamientos No Farmacológicos de pacientes con enfermedad de Alzheimer en estadío leve usando tecnología de realidad virtual – **Omar Pino** – Universidad de Antioquia (Colombia). 09:45 – 10:00 AM
10:00 AM – 10:30 AM	Coffee break 3 – Poster session
10:30 AM – 11:15 AM Keynote speaker 5.	Evolution of EEG systems from high density to wearables: expansion opportunities. **Prof. Ph.D. Marta Molinas** - Department of Engineering Cybernetics, Norwegian University of Science and Technology (NTNU) - Norway
11:15 AM – 12:30 PM Oral presentation of accepted papers. Session D - Psychology, Health, and Medicine	1. A volumetric deep architecture to discriminate parkinsonian patterns from intermediate pose representations - **Fabio Martinez** - Universidad Industrial de Santander (Colombia). 11:15 AM – 11:30 PM 2. EEG-based functional connectivity analysis of an IAT task for measuring prejudice among former actors of the Colombian armed conflict – **Jhon Quiza** – Universidad de Medellin (Colombia). 11:35 – 11:50 PM 3. Monitoring learning in nursing using the electroencephalogram and Intrinsic Motivation Inventory – IMI – **Karen Cardoso** - Universidade Federal do Rio Grande do Sul (Brazil). 11:55 AM – 12:10 PM 4. Influence of delays in functional connectivity to distinguish motor imagery tasks - **Pedro Felipe Vazquez –** Universidade Estadual de Campinas (Brazil). 12:15 – 12:30 PM
12:30 PM – 2:00 PM	Open lunch

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2:00 PM – 2:45 PM Keynote speaker 6.	Multimodal analysis applied to mental disorders diagnosis and follow-up. **Prof. Ph.D. Paula Herrera Gomez -** Psychiatry, Neuroscience and Community (PSINECO) – Universidad Tecnológica de Pereira (UTP) - Colombia
2:45 PM – 3:30 PM	Coffee break 4 – Poster session
3:30 PM – 5:00 PM	Round table: gender diversity in neuroscience **Prof. Ph.D. Yadira Ibargüen-Vargas -** University of Orleans - France **Prof. Ph.D. Paula Herrera Gómez -** Universidad Tecnológica de Pereira (UTP) - Colombia **Prof. Ph.D. Catalina Alvarado -** Pontificia Universidad Javeriana (PUJ) - Colombia **Prof. Ph.D. Marta Molinas -** Norwegian University of Science and Technology (NTNU) - Norway Moderator**: Prof. Ph.D. Lina Becerra -** Colegio Colombiano de Neurociencas (COLNE) - Colombia
5:00 PM -	Social activity

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Thursday 30 November	
8:00 AM – 8:45 AM Keynote speaker 7.	Dynamics of Epileptic Networks. **Prof. PhD. Catalina Alvarado Rojas** – Electronics Deparment – Pontificia Universidad Javeriana Bogotá – Colombia.
8:45 AM – 10:00 AM Oral presentation of accepted papers. Session E - Neurorehabilitation – Neuroengineering	1. Estimation of industrial assembly techniques by acquiring biomechanical signals through an industrial passive exoskeleton and intelligent binary classification - **Daniel Betancourt** – Institucion Universitaria de Envigado (Colombia). 8:45 – 9:00 AM. 2. EEG-Based Classification of Passive Pedaling Speeds Using SVM: A Promising Approach for Enhancing Lower Limb Rehabilitation Technologies – **Cristian Blanco** - Universidade Federal do Espirito Santo (Brazil). 9:05 – 9:20 AM. 3. Effect of an imagery training on biomechanical aspects of a sport skill in gymnasts of the Met Chia Club – **Lina Guzmán** - Universidad Nacional de Colombia (Colombia). 9:25 – 9:40 AM. 4. In silico application of the epsilon-greedy algorithm for frequency optimization of electrical neurostimulation for hypersynchronous disorders - **Vinícius Cota** - Istituto Italiano di Tecnologia (Italy). 9:45 – 10:00 AM.
10:00 AM – 10:45 AM	Coffee break 5– Poster session
10:45 AM – 12:00 M Oral presentation of accepted papers. Session F - Neuroscience	1. Comparison of Visual and Kinesthetic Motor Imagery for Upper Limb Activity - **Alvaro D Orjuela** – Universidad del Rosario (Colombia). 10:45 – 11:00 AM 2. A deep cascade architecture that generates synthetic parametric maps and segments stroke lesions over CT studies - **Fabio Martinez** - Universidad Industrial de Santander (Colombia). 11:05 – 11:20 AM 3. Unveiling Visual Physiology and Steady-State Evoked Potentials using Low-Cost and Transferable Electroencephalography for Evaluating Neuronal Activation - **Veronica Henao Isaza** – Universidad de Antioquia (Colombia). 11:25 – 11:40 AM 4. Neurofeedback-driven Emotional Regulation Training in a virtual reality environment: a machine learning approach using OpenBCI - **Belman Rodriguez** - Universidad San Buenaventura (Colombia). 11:45 AM – 12:00 PM
12:00 M – 2:00 PM	Open lunch

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2:00 PM – 2:45 PM Keynote speaker 8.	Emergent applications of brain-computer interfaces in the performing arts: music, dance and acting. **Prof. PhD. José L Contreras-Vidal.** NSF IUCRC BRAIN - Noninvasive Brain-Machine Interface Lab, University of Houston - USA
2:45 PM – 3:30 PM Oral presentation of accepted papers Session G. Brain-Computer Interface	1. Classificação da Imagética Motora através do janelamento de sub-bandas em regiões distintas do espectro do sinal de EEG e implementação da Otimização Bayesiana em sistemas BCI baseados na Geometria de Riemann - **Danilo Lopes**- Universidade Federal do Pará (Brazil). 2:45 – 3:00 PM 2. Impact of Ocular Artifact Removal on EEG-Based Color Classification for Locked-In Syndrome BCI Communication – **Andres Soler** – NTNU (Norway). 3:05 – 3:20 PM 3. Riemannian ElectroCardioGraphic signal classification - **Aurélien Appriou** – Flit Sport (France). 3:25 – 3:40 PM 4. A comparison of BCI classifiers - **Lia Cataño** - Instituto Tecnologico Metropolitano (Colombia). 3:45 – 4:00 PM
3:30 PM – 4:00 PM	Lunch BCI LATAM Network. **Prof. MD Jaime A. Riascos Salas.** Institución Universitaria de Envigado (IUE), Colombia.
4:00 PM – 4:45 PM	Coffee break 5– Poster session
4:45 PM – 5:30 PM Keynote speaker 9.	On variabilities affecting Brain-Computer Interactions **Prof. PhD. Fabien Lotte** - INRIA - France
5:30 PM – 6:00 PM	Closing Ceremony.