

## IWINAC-2022 Sessions Schedule.

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- Session: Plenary-I June, 1. 09:00—10:00 Room: A  
**Invited speaker: Prof. Rafael Rebolo:**  
“Some advances in the study of the Universe”
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- Session: Plenary-II June, 1. 10:00—11:00 Room: A  
**Invited speaker: Prof. Hojjat Adeli:**  
“Machine Learning - a Ubiquitous Transformative Technology in the 21st Century: Wonders and Pitfalls”
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- Session: NeurDis-ENMF June, 1. 11:20—12:40 Room: A  
**“NeurDis workshop: Evaluation of Neuromotor Functions”**  
Chair: Agustín Álvarez-Marquina Co-Chair: Pedro Gómez Vilda
    - “Monitoring motor symptoms in Parkinson’s disease under long term acoustic stimulation”  
*Guillermo de Arcas Castro, Luis Sigcha, David Gonzalez, Ignacio Pavon, Juan Manuel Lopez*
    - “Evaluation of TMS Effects on the Phonation of Parkinson’s Disease Patients”  
*Andrés Gómez-Rodellar, Pedro Gomez Vilda, Jiri Mekyska, Lubos Brabenec, Patrik Simko, Irena Rektorova*
    - “Effects of Neuroacoustic Stimulation on Two Study Cases of Parkinson’s Disease Dysarthria”  
*Pedro Gomez Vilda, Andrés Gómez-Rodellar, Daniel Palacios-Alonso, Agustín Álvarez-Marquina*
    - “Characterizing Masseter Surface Electromyography on EEG-related Frequency Bands in Parkinson’s Disease Neuromotor Dysarthria”  
*Andrés Gómez-Rodellar, Pedro Gomez Vilda, José Manuel Ferrandez, Athanasios Tsanas*
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- Session: AfCAI-I June, 1. 11:20—12:40 Room: B  
**“Workshop on Affective Computing and Context Awareness in Ambient Intelligence - I”**  
Chair: Grzegorz J. Nalepa Co-Chair: José Palma
    - “Eye tracking measurement of train drivers’ attention based on quasi-static areas of interest”  
*Paweł Węgrzyn, Michal Kepski, Iwona Grabska-Gradzińska*
    - “A physical cognitive assistant for monitoring hand gestures exercises”  
*Jaime Andres Rincon Arango, Vicente Javier Julian Inglada, Carlos Carrascosa Casamayor*
    - “Automation of Social Media Interactions: A Framework for Online Social “Sowing””  
*Francisco Marcondes, Paulo Novais, José Almeida*
    - “Visualization Methods for Exploratory Subgroup Discovery on Time Series Data”  
*Dan Hudson, Martin Atzmueller, Travis Wiltshire*
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- Session: **DeepLearn-I** June, 1. 11:20—12:40 Room: C  
Chair: Manuel Graña Co-Chair: Álvaro Barreiro
    - “Data augmentation techniques for speech emotion recognition and deep learning”  
*Javier de Lope, Manuel Graña, José Antonio Nicolás*
    - “Deep Learning artwork style prediction and similarity detection”  
*Manuel Graña, Igor Sorraín Rebollar*
    - “Handwritten word recognition on the Fundación-Osborne dataset”  
*Álvaro Barreiro, Victoria Ruiz, Angel Sanchez, Jose Velez*
    - “Automatic Annotation for Weakly Supervised Pedestrian Detection”  
*Francisco José Garcia-Espinosa, Antonio Sanz, Alfredo Cuesta-Infante*
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- Session: NeurDis-AGNDR June, 1. 12:40—14:00 Room: A  
“**NeurDis workshop: Advanced Gaming in Neurodegenerative Disease Rehabilitation**”  
Chair: Daniel Palacios-Alonso Co-Chair: Andrés Gómez-Rodellar

- “Acquisition of Relevant Hand-Wrist Features Using Leap Motion Controller: A Case of Study”  
*Agustín Álvarez-Marquina, Pedro Gomez Vilda, Daniel Palacios-Alonso, Carlos Rodrigo-Rivero, Carlos Garre del Olmo, Francisco Domínguez-Mateos*
  - “A pilot and feasibility study of virtual reality as gamified monitoring tool for neurorehabilitation”  
*Daniel Palacios-Alonso, Andrés Gómez-Rodellar, José Manuel Ferrandez, Pedro Gomez Vilda, Agustín López-Arribas, Guillermo Meléndez-Morales, Esther Núñez-Vidal*
  - “Pairing of visual and auditory stimuli: a study in musicians on the multisensory processing of the dimensions of articulation and coherence” *Octavio de Juan-Ayala, Vicente Caruana, José Javier Campos-Bueno, Jose Manuel Ferrández, Eduardo Fernández*
  - “Design of Educational Scenarios with BigFoot Walking Robot: A Cyber-physical System Perspective to Pedagogical Rehabilitation”  
*Maya Dimitrova, Valentin Nikolov, Ivan Chavdarov, Aleksandar Krastev, Hiroaki Wagatsuma*
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- Session: AfCAI-II June, 1. 12:40—14:00 Room: B  
“**Workshop on Affective Computing and Context Awareness in Ambient Intelligence - II**”  
Chair: Vicente Julián Inglada Co-Chair: Krzysztof Kutt

- “Real-life validation of emotion detection system with wearables”  
*Dominika Kunc, Stanislaw Saganowski, Joanna Komoszyńska, Bartosz Perz, Przemysław Kazienko*
  - “Sentiment Analysis Based on Smart Human Mobility: a comparative study of ML models”  
*Luís Rosa, Cesar Analide, Fábio Silva*
  - “Evaluation of Selected APIs for Emotion Recognition from Facial Expressions”  
*Krzysztof Kutt, Grzegorz J. Nalepa, Piotr Sobczyk*
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- Session: **DeepLearn-II** June, 1. 12:40—14:00 Room: C  
Chair: Guido Bologna Co-Chair: José Luis Sancho

- “Explaining CNN Classifications by Propositional Rules Generated from DCT Feature Maps”  
*Guido Bologna*
  - “Non-analytical Reasoning Assisted Deep Reinforcement Learning”  
*John Schonefeld, Md Karim*
  - “Double-layer Stacked Denoising Autoencoders for Regression”  
*María Elena Fernández-García, Antonio Ros Ros, Aníbal R. Figueiras, Jose Luis Sancho-Gomez, Eloy Hontoria Hernández*
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- Session: Posters June, 1. 15:30—16:30 Room: P  
“**Posters attendance with stand-up coffee**”  
Chair: José Manuel Ferrández Co-Chair: Maria Bonomini

1. “Evaluation of a Gaussian Mixture Model for generating synthetic ECG signals during an angioplasty procedure”  
*Anderson Rincon Soler, Maria Bonomini, Pedro D. Arini, Santiago Caracciolo, Fernando Ingallina*
2. “Automatic left bundle branch block diagnose using a 2-D convolutional network”  
*Axel César Wood Niella, Maria Bonomini, Juan Marcos Cerrato Brown*
3. “QRS-T angle as a biomarker for LBBB strict diagnose”  
*José Manuel Ferrandez, Maria Bonomini, Beatriz del Cisne Macas Ordoñez*
4. “Variable embedding based on L-statistic for electrocardiographic signal analysis”  
*Lucas Escobar, Edilson Delgado-Trejos, Juan Murillo, David Cuesta*
5. “Uniform and non-uniform embedding quality using electrocardiographic signals”  
*Juan Pablo Restrepo Uribe, Edilson Delgado-Trejos, David Cuesta, Diana Orrego-Metaute*

6. “Decoding Lower-Limbs Kinematics from EEG Signals”  
*Javier V. Juan, Eduardo Iáñez, Mario Ortiz, Laura Ferrero, José M. Azorín, Luis de la Ossa*
7. “EEG Signals in mental fatigue detection: A comparing study of machine learning technics VS deep learning”  
*Halima Ettahiri, José Manuel Ferrandez, Taoufiq Fechtali*
8. “Application of RESNET and Combined RESNET+LSTM Network for Retina Inspired Emotional Face recognition System”  
*Mahmudul Huq, Francisco Javier Garrigos Guerrero, Jose Javier Martinez-Alvarez, José Manuel Ferrandez, Eduardo Fernandez*
9. “Deep Layout Extraction applied to Historical Postcards”  
*Ana Belen Moreno Diaz, Jose Velez, Angel Sanchez, Bruno Garcia*
10. “Detection of Unknown Defects in Semiconductor Materials From a Hybrid Deep and Machine Learning Approach”  
*Francisco López de la Rosa, Rafael Morales, Antonio Fernández-Caballero, José L. Gómez-Sirvent, Corinna Kofler*
11. “Using temporal information in deep learning architectures to improve lane detection under adverse situations”  
*Mariano Rincon Zamorano, Diego Turrado, Jan Koloda*
12. “Improvement of Fixation Elements Detection in Aircraft Manufacturing”  
*Francisco Cavas, Leandro Ruiz, Sebastián Díaz, José M. González*
13. “A new artificial intelligence approach for the radiographic classification of Sacroiliitis”  
*Esther Fernandez, Javier Garrigos, Jose Javier Martinez, Irene Cases, Manuel Jose Moreno, Luis Francisco Linares, Angel Garcia, Jose Manuel Ferrandez, Eduardo Fernández*
14. “Deep Reinforcement Learning in Agents‘ Training: Unity ML-Agents”  
*Laura Almón-Manzano, José Manuel Cuadra Troncoso, Rafael Pastor-Vargas*
15. “Clustering of COVID-19 time series incidence intensity in Andalusia, Spain”  
*Miguel Díaz Lozano, Pedro Antonio Gutierrez, Cesar Hervas Martinez, David Guijo Rubio*
16. “Triage prediction of a real dataset of COVID-19 patients in Alava”  
*Goizalde Badiola, José Manuel López Guede, Julian Estevez, Manuel Graña*
17. “Vision-Based Human Posture Detection from a Virtual Home-Care Unmanned Aerial Vehicle”  
*Lidia Belmonte, Pascual González, Antonio Fernández-Caballero, Rafael Morales, Andrés Bustamante, Antonio Pereira*
18. “Development and validation of a novel technology for postural analysis and human kinematics”  
*Cristina Soto-Sánchez, Eduardo Fernandez, Rocío López Peco, Roberto Morollón Ruiz*
19. “Multi-Agent LoRaWAN Network for End-of-Life Management of Electric Vehicle Batteries”  
*Celia Garrido-Hidalgo, Luis Roda-Sanchez, Teresa Olivares, Antonio Fernández-Caballero, F. Javier Ramirez*
20. “Spatial frames of reference and action: a study with evolved neuro-agents”  
*Michela Ponticorvo, Nicola Milano*
21. “Multi-Agent Systems in support of Digital Twins: a Survey”  
*Elena Pretel, Elena Navarro, Víctor López-Jaquero, Alejandro Moya, Pascual González*
22. “Automatic Selection of Financial Ratios by Means of Differential Evolution and for Predicting Business Insolvency”  
*José Santos Reyes, Ángel Beade, Óscar Sestayo, Manuel Rodríguez*
23. “Feature ranking for feature sorting and feature selection: FR4(FS)<sup>2</sup>”  
*Antonio J. Tallón-Ballesteros, Paola Santana Morales, Alberto F. Merchán, Alba Márquez Rodríguez*
24. “A computational drug repositioning method for rare diseases”  
*Belén Otero Carrasco, Lucía Prieto Santamaría, Esther Ugarte Carro, Juan Pedro Caraça-Valente Hernández, Alejandro Rodríguez González*
25. “Doughnut Computing in City Planning for Achieving Human and Planetary Rights”  
*Juan José Moreno-Navarro, Veronica Dahl*
26. “Temperature control and monitoring system for electrical power transformers using thermal imaging”  
*Fermin Segovia, Javier Ramirez, Diego Salas-Gonzalez, Ignacio Alvarez Illan, Francisco Jesus Martínez-Murcia, Juan M Gorriz, Jacob Rodriguez-Rivero, Francisco J. Leiva, Carlos Gaitan*
27. “Visual parking space estimation using detection networks and rule-based systems”  
*Susana Pineda De Luelmo, Antonio Sanz, Juan Pantrigo, Elena Giraldo Del Viejo*
28. “Statistical and Symbolic Neuroaesthetics Rules Extraction From EEG Signals”  
*Guido Sciaivico, Giovanni Pagliarini, Federico Manzella, Sante Mazzacane, Maddalena Coccagna*

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- Session: NeurDis-ASD June, 1. 16:30—18:00 Room: A  
“**NeurDis workshop: Autism Spectrum and related Disorders**”  
Chair: Emilia I. Barakova Co-Chair: Victoria Rodellar
    - “Feasibility study of a ML-Based ASD monitoring system”  
*José María Vicente Samper, Jose M Sabater-Navarro, Ernesto Ávila Navarro*
    - “ApEn: A stress-aware pen for children with Autism Spectrum Disorder”  
*Jing Li, Emilia I. Barakova, Jun Hu, Martine van Dongen-Boomsma, Wouter Staal*
    - “Anxiety Monitoring in Autistic Disabled People During Voice Recording Sessions”  
*Victoria Rodellar, Marina Jodra, Paula Maestro*
    - “What can Technology do for Autistic Spectrum Disorder People?”  
*Marina Jodra, Victoria Rodellar*
    - “Autism Spectrum Disorder (ASD): emotional intervention protocol”  
*Gema Benedicto Rodríguez, Eduardo Fernandez, Francisco Sánchez-Ferrer, José Manuel Ferrandez, Mikel Val-Calvo*
    - “Creating vignettes for a Robot-Supported Education Solution for Children with Autism Spectrum Disorder”  
*Trenton Schulz, Kristin Skeide Fuglerud*
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- Session: **Biomedical-I** June, 1. 16:30—17:20 Room: B  
Chair: Eduardo Fernández Co-Chair: Mikel Val-Calvo
    - “Analysis of the asymmetry in RNFL thickness using Spectralis OCT measurements in healthy and glaucoma patients”  
*Rafael Berenguer-Vidal, Rafael Verdú-Monedero, Juan Morales Sanchez, Inmaculada Sellés-Navarro, Oleksandr Kovalyuk*
    - “Performance evaluation of a real-time phase estimation algorithm applied to intracortical signals from human visual cortex”  
*Fabrizio Grani, Cristina Soto-Sánchez, Maria Dolores Grima-Murcia, Mikel Val-Calvo, José Manuel Ferrandez, Eduardo Fernandez, Alfonso Rodil Doblado, Fernando Farfan, Leili Soo, Dorota Waclawczyk, Pablo González, Maria Dolores Coves, Arantxa Alfaro*
    - “Electrical Stimulation Induced Current Distribution in Peripheral Nerves Varies Significantly with the Extent of Nerve Damage: A Computational Study Utilizing Convolutional Neural Network and Realistic Nerve Models”  
*Jinze Du, Eduardo Fernandez, Andres Morales, Pragya Kosta, Jean-Marie C. Bouteiller, Gema Martinez, David Warren, Gianluca Lazzi*
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- Session: **IA-Apps-I** June, 1. 16:30—17:20 Room: C  
Chair: Mario J. Perez Jimenez Co-Chair: Luis Eduardo Imbernón Cuadrado
    - “Basic arithmetic calculations through vrius-based machines”  
*Antonio Ramírez de Arellano, Mario J. Perez Jimenez, David Orellana-Martín*
    - “An efficient and rotation invariant Fourier-based metric for assessing the quality of images created by generative models”  
*José Manuel Cuadra Troncoso, Mariano Rincon Zamorano, Javier Gamazo Tejero*
    - “A first-in-class block-based programming language distance calculation”  
*Luis Eduardo Imbernón Cuadrado, Ángeles Manjarrés, Félix de la Paz López*
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- Session: Plenary-III June, 2. 09:00—10:00 Room: A  
**Invited speaker: Prof. Manuel de Vega:**  
“The neural basis of linguistic meaning”
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- Session: Plenary-IV June, 2. 10:00—11:00 Room: A  
**Invited speaker: Prof. Athanasios Tsanas:**  
“Capitalizing on patient reported outcome measures, wearables, and smartphones towards developing new clinical decision support tools for frequent, remote, longitudinal monitoring of chronic disorders”
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- Session: MALENE-I June, 2. 11:20—12:40 Room: A  
**“Workshop on Machine Learning in Neuroscience - I”**  
Chair: Juan M. Gorriz Co-Chair: Yu-Dong Zhang
    - “ConvNet-CA: A Lightweight Attention-Based CNN for Brain Disease Detection”  
*Juan M Gorriz, Yu-Dong Zhang, Hengde Zhu, Jian Wang, Shui-Hua Wang*
    - “Temporal phase synchrony disruption in Dyslexia: anomaly patterns in auditoryprocessing”  
*Marco A. Formoso, Andres Ortiz García*
    - “CAD system for Parkinson’s Disease with penalization of non-significant or high-variability input data sources” *Diego Castillo-Barnes, Javier Merino-Chica, Raúl Díaz-García, Carmen Jimenez-Mesa, Juan Eloy Arco, Javier Ramirez, Juan M Gorriz*
    - “Automatic classification system for diagnosis of cognitive impairment based on the clock-drawing test” *Carmen Jimenez-Mesa, Juan Eloy Arco, Andres Ortiz García, Diego Castillo-Barnes, Javier Ramirez, Juan M Gorriz, Meritzel Valentí-Soler, Belén Frades-Payo, María Ascensión Zea-Sevilla, Marina Ávila-Villanueva, Teodoro Del Ser Quijano, Cristóbal Carnero-Pardo*
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- Session: NeurDis-CNL June, 2. 11:20—12:40 Room: B  
**“NeurDis workshop: Clinical Neurolinguistics”**  
Chair: Pedro Gómez Vilda Co-Chair: Daniel Palacios-Alonso
    - “Identification of Parkinson’s Disease from Speech using CNNs and Formant Measures”  
*Agustín Álvarez-Marquina, Daniel Palacios-Alonso, Andrés Gómez-Rodellar, Francisco Díaz-Pérez, Pedro Gomez Vilda*
    - “Characterization of Hypokinetic Dysarthria using a Convolutional Neural Network based on Auditory Receptive Fields” *Pedro Gomez Vilda, Andrés Gómez-Rodellar, Daniel Palacios-Alonso, Agustín Álvarez-Marquina, Athanasios Tsanas*
    - “Evaluation of the presence of subharmonics in the phonation of children with Smith Magenis Syndrome” *Daniel Palacios-Alonso, Rafael Martínez-Olalla, Irene Hidalgo-delaGuía, Elena Garayzabal-Heinze, Pedro Gomez Vilda*
    - “Speech Analysis in Preclinical Identification of Alzheimer’s Disease”  
*Olga Ivanova, Juan José G. Meilán*
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- Session: **Emotions** June, 2. 11:20—12:40 Room: C  
Chair: Antonio Fernández-Caballero Co-Chair: Pascual González
    - “Influence of the Level of Immersion in Emotion Recognition Using Virtual Humans”  
*Antonio Fernández-Caballero, José Pascual Molina, Pascual González, Arturo S. García, Miguel A. Vicente-Querol, Luz M. González-Gualda, Patricia Fernández-Sotos*
    - “Influence of Neutral Stimuli on Brain Activity Baseline in Emotional Experiments”  
*Beatriz García-Martínez, Antonio Fernández-Caballero*
    - “Classification of Psychophysiological Patterns During Emotional Processing Using SVM”  
*Andres Quintero-Zea, Natalia Trujillo, Jose Lopez Hincapie, Juan Martínez-Vargas, Diana Gómez*
    - “Measuring motion sickness through racing simulator based on virtual reality”  
*Daniel Palacios-Alonso, Javier Barbas-Cubero, Luis Betancourt-Ortega, Mario Fernández-Fernández*
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- Session: MALENE-II June, 2. 12:40—14:00 Room: A  
“**Workshop on Machine Learning in Neuroscience - II**”  
Chair: Andres Ortiz García Co-Chair: Javier Ramirez
    - “Unraveling dyslexia-related connectivity patterns in EEG signals by Holo-Hilbert Spectral analysis”  
*Nicolás J. Gallego-Molina, Andres Ortiz García, Francisco Jesus Martínez-Murcia, Ignacio Rodriguez-Rodriguez*
    - “Inter-channel Granger causality for estimating EEGphase connectivity patterns in dyslexia”  
*Ignacio Rodriguez-Rodriguez, Andres Ortiz García, Marco A. Formoso, Nicolás J. Gallego-Molina, Juan Luis Luque*
    - “Automatic Diagnosis of Schizophrenia in EEG signals Using Functional Connectivity Features and CNN-LSTM Model”  
*Afshin Shoeibi, Juan M Gorriz, Mitra Rezaei, Navid Ghassemi, Zahra Namadchian, Assef Zare*
    - “Sleep apnea diagnosis using complexity features of EEG signals”  
*Afshin Shoeibi, Juan M Gorriz, Behnam Gholami, Mohammad Hossein Behboudi, Ali Khadem*
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- Session: NeurDis-PMA June, 2. 12:40—14:00 Room: B  
“**NeurDis workshop: Precision Medicine and Actigraphy**”  
Chair: Athanasios Tsanas Co-Chair: Andrés Gómez-Rodellar
    - “The effect of breathing maneuvers on the interaction between pulse fluctuation and heart rate variability”  
*Maria Bonomini, Nicolás Alberto Posteguillo*
    - “Horizon Cyber-Vision: A cybernetic approach for a cortical visual prosthesis”  
*Mikel Val-Calvo, Fabrizio Grani, Jose Manuel Ferrandez, Eduardo Fernandez, Roberto Morollón Ruiz, Leili Soo, Dorota Waclawczyk*
    - “The assessment of activities of daily living skills using visual prosthesis”  
*Dorota Waclawczyk, Leili Soo, Mikel Val-Calvo, Fabrizio Grani, Eduardo Fernandez, Roberto Morollón Ruiz*
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- Session: **Robotics** June, 2. 12:40—14:00 Room: C  
Chair: Richard Duro Co-Chair: José Manuel Cuadra Troncoso
    - “Inter-session transfer learning in MI based BCI for controlling an exoskeleton”  
*Laura Ferrero, Vicente Quiles, Mario Ortiz, Javier V. Juan, Eduardo Iáñez, José M. Azorín*
    - “Autonomous Knowledge Representation for Efficient Skill Learning in Cognitive Robots”  
*Alejandro Romero, Francisco Bellas, Richard Duro, Blaz Meden*
    - “Autonomous Robot Navigation by Areas Centroid Algorithm Using Depth Cameras”  
*Francisco Antonio Marín, José Manuel Cuadra Troncoso, Félix de la Paz López, Jose Ramon Alvarez-Sanchez*
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- Session: MALENE-III June, 2. 15:30—16:30 Room: A  
“**Workshop on Machine Learning in Neuroscience - III**”  
Chair: Diego Castillo-Barnes Co-Chair: Francisco Jesus Martínez-Murcia
    - “Representational Similarity Analysis: A preliminary step to fMRI-EEG data fusion in MVPAlab”  
*David López-García, Juan M Gorriz, María Ruz, Jose María González-Peñalver*
    - “Towards mixed mode biomarkers: combining structural and functional information by deep learning”  
*Andres Ortiz García, Juan Eloy Arco, Marco A. Formoso, Nicolás J. Gallego-Molina, Ignacio Rodriguez-Rodriguez, Francisco Jesus Martínez-Murcia, Juan M Gorriz, Javier Ramirez*
    - “Modelling the progression of the symptoms of parkinsons disease using a nonlinear decomposition of 123I FP-CIT SPECT images”  
*Francisco Jesus Martínez-Murcia, Javier Ramirez, Diego Castillo-Barnes, Juan M Gorriz, Jose Antonio Simon-Rodriguez*
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- Session: MLCVR-I June, 2. 15:30—16:30 Room: B  
**“Machine Learning in Computer Vision and Robotics - I”**  
Chair: José García-Rodríguez Co-Chair: Enrique Dominguez

- “Enhanced image segmentation by a novel Test Time Augmentation and super-resolution.”  
*Iván García Aguilar, Jorge García-González, Rafael Marcos Luque-Baena, Ezequiel Lopez-Rubio, Enrique Dominguez*
  - “Encoding Generative Adversarial Networks for defense against image classification attacks”  
*Jorge García-González, Miguel A. Molina-Cabello, Karl Thurnhofer-Hemsi, Ezequiel Lopez-Rubio, José M. Pérez-Bravo, José A. Rodríguez-Rodríguez*
  - “Anomalous trajectory detection for automated traffic video surveillance”  
*Jorge García-González, Rafaela Benítez-Rochel, Miguel A. Molina-Cabello, Ezequiel Lopez-Rubio, Jose D. Fernández*
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- Session: IS4ATAMCI-I June, 2. 15:30—16:30 Room: C  
**“Intelligent Systems for Assessment, Treatment, and Assistance in Mild Cognitive Impairment - I”**  
Chair: Rafael Martínez Tomás Co-Chair: Mariano Rincón

- “Artificial Intelligence applied to spatial cognition assessment”  
*Michela Ponticorvo, Mario Coccorese, Onofrio Gigliotta*
  - “Automatic diagnosis of Mild Cognitive Impairment using Siamese Neural Networks”  
*Margarita Bachiller Mayoral, Mariano Rincon Zamorano*
  - “A Comparison of Feature-based Classifiers and Transfer Learning Approaches for Cognitive Impairment Recognition in Language”  
*Monica Gonzalez Machorro, Rafael Martinez Tomas*
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- Session: MALENE-IV June, 2. 16:30—17:20 Room: A  
**“Workshop on Machine Learning in Neuroscience - IV”**  
Chair: Fermin Segovia Co-Chair: Carmen Jimenez-Mesa

- “Capacity estimation from environmental audio signals using Deep Learning”  
*Cristina Reyes-Daneri, Francisco Jesus Martínez-Murcia, Andres Ortiz García*
  - “Covid-19 detection by Wavelet Entropy and Self-adaptive PSO”  
*Shui-Hua Wang, Juan M Gorriz, Yu-Dong Zhang, Wei Wang*
  - “RDNet: ResNet-18 with Dropout for blood cell classification”  
*Shui-Hua Wang, Juan M Gorriz, Yu-Dong Zhang, Ziquan Zhu, Zeyu Ren*
  - “Automatic Diagnosis of Myocarditis in Cardiac Magnetic Images Using CycleGAN and Deep PreTrained Models”  
*Afshin Shoeibi, Navid Ghassemi, Mitra Rezaei, Juan M Gorriz, Jonathan Heras*
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- Session: MLCVR-II June, 2. 16:30—17:20 Room: B  
**“Machine Learning in Computer Vision and Robotics - II”**  
Chair: José García-Rodríguez Co-Chair: Enrique Dominguez

- “Defining high risk landslide areas using Machine Learning”  
*Jaime Salvador, Jose Garcia-Rodriguez, Byron Guerrero, Christian Mejia-Escobar, Michelle Bonifaz, Oswaldo Gallardo*
  - “Landslide prediction with Machine Learning and time windows”  
*Jaime Salvador, Jose Garcia-Rodriguez, Byron Guerrero, Christian Mejia-Escobar, Michelle Bonifaz, Oswaldo Gallardo*
  - “Live TV streaming latency measurement using YOLO”  
*Esteve Brotons, Miguel Angel Santiago Cabello, Jose Garcia-Rodriguez*
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- Session: IS4ATAMCI-II June, 2. 16:30—17:20 Room: C  
“**Intelligent Systems for Assessment, Treatment, and Assistance in Mild Cognitive Impairment - I**”  
Chair: Mariano Rincón Zamorano Co-Chair: Rafael Martínez Tomás
    - “Detection of Alzheimer’s disease using a four-channel EEG montage”  
*Eduardo Perez-Valero, Jesus Minguillon, Christian Morillas, Francisco Pelayo, Miguel Lopez*
    - “Evaluating imputation methods for missing data in a MCI dataset”  
*Alba Gómez-Valadés, Mariano Rincon Zamorano, Rafael Martinez Tomas, Juan Guerrero*
    - “Automatic scoring of Rey-Osterrieth Complex Figure Test using Recursive Cortical Networks”  
*Fernando Javier Pinilla Martinez, Rafael Martinez Tomas, Mariano Rincon Zamorano*
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- Session: Plenary-V June, 3. 09:00—10:00 Room: A  
**Invited speaker: Prof. Luis M. Sarro:**  
“Data Science for the Gaia mission”
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- Session: MALENE-V June, 3. 10:00—11:00 Room: A  
“**Workshop on Machine Learning in Neuroscience - V**”  
Chair: Yu-Dong Zhang Co-Chair: Juan M. Gorriz
    - “Quantifying inter-hemispheric differences in Parkinson’s Disease using siamese networks”  
*Juan Eloy Arco, Andres Ortiz García, Diego Castillo-Barnes, Juan M Gorriz, Javier Ramirez*
    - “Analyzing statistical inference maps using MRI images for Parkinson’s Disease”  
*Carmen Jimenez-Mesa, Diego Castillo-Barnes, Juan Eloy Arco, Fermin Segovia, Javier Ramirez, Juan M Gorriz*
    - “Evaluating intensity concentrations during the spatial normalization of functional images for Parkinson’s Disease”  
*Diego Castillo-Barnes, Juan Eloy Arco, Carmen Jimenez-Mesa, Javier Ramirez, Juan M Gorriz, Diego Salas-Gonzalez*
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- Session: MLCVR-III June, 3. 10:00—11:00 Room: B  
“**Machine Learning in Computer Vision and Robotics - III**”  
Chair: Enrique Dominguez Co-Chair: José García-Rodríguez
    - “Analysis of functional connectome pipelines for the diagnosis of autism spectrum disorders”  
*Domingo López Rodríguez, Karl Thurnhofer-Hemsi, Ezequiel Lopez-Rubio, Rafael Marcos Luque-Baena, Clara Jiménez-Valverde, Rosa Maza-Quiroga*
    - “A Novel Continual Learning Approach for Competitive Neural Networks”  
*Esteban Palomo, Juan Miguel Ortiz-de-Lazcano-Lobato, Ezequiel Lopez-Rubio, Rosa Maza-Quiroga, José David Fernández-Rodríguez*
    - “SCASA: From Synthetic to real Computer-Aided Sperm Analysis”  
*Daniel Hernández Ferrándiz, Juan Pantrigo, Raúl Cabido*
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- Session: BICA-I June, 3. 10:00—11:00 Room: C  
“**Bio-Inspired Computing Approaches - I**”  
Chair: José Santos Co-Chair: Ramiro Varela
    - “Robust Makespan Optimization via Genetic Algorithms on the Scientific Workflow Scheduling Problem”  
*Pablo Barredo, Jorge Puente Peinador*
    - “Compiling single round QCCP-X quantum circuits by genetic algorithm”  
*Riccardo Rasconi, Angelo Oddi, Ramiro Varela Arias, Miguel Ángel González, Lis Arufe*
    - “Elite Artificial Bee Colony for Makespan Optimisation in Job Shop with Interval Uncertainty”  
*Juan José Palacios, Ines Gonzalez-Rodriguez, Camino Rodriguez, Hernán Díaz*
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- Session: **IA-Apps-II** June, 3. 11:20—12:40 Room: A  
Chair: Ricardo Contreras Co-Chair: Vicente Matellan Olivera
    - “An approach to emotions through lexical availability”  
*Ricardo Contreras, Maria Punninghoff, Pedro Salcedo Lagos, Pedro Pinacho-Davidson, Gabriela Kotz*
    - “A bacteria-based metaheuristic as a tool for group formation”  
*Ricardo Contreras, Pedro Pinacho-Davidson, Maria Punninghoff, Valentina Hernández*
    - “KANT: A tool for Grounding and Knowledge Management”  
*Miguel Á. González-Santamarta, Francisco J. Rodríguez-Lera, Francisco Martín, Camino Fernández, Vicente Matellán*
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- Session: **Biomedical-II** June, 3. 11:20—12:40 Room: B  
Chair: Rafael Verdú-Monedero Co-Chair: Mariano Rincón Zamorano
    - “Brain Shape Correspondence Analysis Using Variational Mixtures for Gaussian Process Latent Variable Models”  
*Juan Pablo Velasquez Minoli, Hernan Felipe Garcia Arias, Álvaro Orozco-Gutiérrez*
    - “Explainable Artificial Intelligence to detect breast cancer: A qualitative case-based visual interpretability approach”  
*Mariano Rincon Zamorano, Sonia Valladares-Rodriguez, Margarita Bachiller Mayoral, Marta Rodriguez-Sampaio*
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- Session: BICA-II June, 3. 11:20—12:40 Room: C  
“**Bio-Inspired Computing Approaches - II**”  
Chair: Ramiro Varela Co-Chair: José Santos
    - “Energy Minimization vs. Deep Learning Approaches for Protein Structure Prediction”  
*Daniel Varela, José Santos Reyes, Juan Luis Filgueiras*
    - “Constructing ensembles of dispatching rules for multi-objective problems”  
*Francisco Javier Gil Gala, Marko Durasević, Lucija Planinić, Domagoj Jakobović*
    - “Building heuristics and ensembles for the travel salesman problem”  
*Francisco Javier Gil Gala, Marko Durasević, María R. Sierra, Ramiro Varela Arias*
    - “Reducing energy consumption in fuzzy flexible job shops using memetic search”  
*Pablo García Gómez, Ines Gonzalez-Rodriguez, Camino Rodriguez*
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