

# IWINAC/ICINAC 2026

## 11<sup>th</sup> INTERNATIONAL CONFERENCE ON THE INTERPLAY BETWEEN NATURAL AND ARTIFICIAL COMPUTATION

**FULL PROGRAM**

Fuerteventura, Canary Islands, Spain.

26 – 29 May, 2026

Organized by

Universidad Politécnica de Cartagena

Universidad de Granada

Universidad Politécnica de Valencia



<http://iwinac.eu/iwinac.org/iwinac2026/>

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# Acknowledgments

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We acknowledge the sponsorship and/or technical and logistic support from:

- [Universidad Politécnica de Cartagena](#).
- [Universidad de Granada](#).
- [Universidad Politécnica de Valencia](#).
- [Apliquem MicroOnes, s.l.](#)

## Scope

This interdisciplinary meeting, with focus on the interplay between Nature and Computation, expands the scope of neural computation at the physical level to cope with symbols and knowledge level models of cognitive and social processes. The global purpose is to offer a forum for discussion and exchange of ideas in both directions, from Computation to Sciences of Natural, and vice versa, between scientists and engineers from fields such as Electronic Engineering, Artificial Intelligence, Knowledge Engineering, Physics, Mathematics, Computation, Artificial Vision, Situated Robotics, Neurophysiology, Cognitive Science, Linguistics and Philosophy.

## Proceedings

The proceedings will be published in Springer Lecture Notes in Computer Science series (LNCS), volumes: [LNCS-16574](#), and [LNCS-16575](#).

# Conference Organization

## General Chair

JOSÉ MANUEL FERRÁNDEZ VICENTE *Universidad Politécnica de Cartagena (Spain)*

## Organizing Committee

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MIKEL VAL CALVO

*Universidad de Granada (Spain)*  
*Universidad Politécnica de Valencia (Spain)*

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RODOLFO LLINÁS  
HOJJAT ADELI  
CHANGJIU ZHOU

*New York University (USA)*  
*Ohio State University (USA)*  
*Singapore Polytechnic (Singapore)*

## Invited Speakers

HOJJAT ADELI  
PABLO LAGUNA  
PEDRO GÓMEZ-VILDA

*Ohio State University (USA)*  
*Universidad de Zaragoza (SPAIN)*  
*Universidad Politécnica de Madrid (SPAIN)*

## Field Editors

Sung Bae.Cho *Yonsei University (South Korea)*  
Emilia Barakova *Eindhoven University of Technology (The Netherlands)*  
Gema Benedicto *Universidad Politécnica de Cartagena (Spain)*  
Diego Castillo-Barnes *Universidad de Granada (Spain)*  
Enrique Dominguez *Universidad de Málaga (Spain)*  
Félix de la Paz *Univ. Nacional de Educación a Distancia (Spain)*  
Antonio Fernández Caballero *Universidad Castilla-La Mancha (Spain)*  
Jose García-Rodríguez *Universitat d'Alacant (Spain)*  
Andrés Gómez-Rodellar *University of Edinburgh (UK)*  
Pedro Gómez-Vilda *Universidad Politécnica de Madrid (Spain)*  
Juan Manuel Górriz *Universidad de Granada (Spain)*  
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Krzysztof Kutt *Jagiellonian University (Poland)*  
Fco. Jesús Martínez Murcia *Universidad de Málaga (Spain)*  
Rafael Martínez Tomás *Universidad Nacional de Educación a Distancia (Spain)*  
Jiri Mekyska *Brno University of Technology (Czech Republic)*  
Ramón Moreno *Grupo Antolin (Spain)*  
Grzegorz J. Nalepa *Jagiellonian University (Poland)*  
Andrés Ortiz *Universidad de Málaga (Spain)*  
Daniel Palacios-Alonso *Universidad Rey Juan Carlos (Spain)*  
José T. Palma *Universidad de Murcia (Spain)*  
Jorge Pérez-Aracil *Universidad de Alcalá (Spain)*  
Javier Ramírez *Universidad de Granada (Spain)*  
Mariano Rincón Zamorano *Universidad Nacional de Educación a Distancia (Spain)*  
Sancho Salcedo *Universidad de Alcalá (Spain)*  
Jose Santos Reyes *Universidade da Coruña (Spain)*  
Fermín Segovia *Universidad de Granada (Spain)*  
Antonio Tallón *Universidad de Huelva (Spain)*  
Ramiro Varela *Universidad de Oviedo (Spain)*

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Andreas Schierwagen, Germany  
Guido Sciavicco, Italy  
Fermín Segovia, Spain  
Antonio J. Tallón-Ballesteros, Spain  
Jan Treur, The Netherlands  
Ramiro Varela Arias, Spain  
Hujun Yin, UK  
Yu-Dong Zhang, UK

**Program Outline.** Detailed session contents and social events in pages 8 – 19.

<b>Tuesday May 26</b>			
morning	<i>free time</i>		
15:30–21:00	<i>Registration at Technical Secretariat desk</i>		
<b>Wednesday May 27</b>			
08:30–09:00	<i>Opening Ceremony</i>		
09:00–10:00	<i>Plenary Session I: Prof. Hojjat Adeli</i>		
	Room A:	Room B:	Room C:
10:00–11:00	MALENE-I	MLCVR-I	NEURDIS-I
11:00–11:20	<i>coffee break</i>		
11:20–12:40	MALENE-II	MLCVR-II	NEURDIS-II
12:40–14:00	MALENE-III	MLCVR-III	NEURDIS-III
14:00–15:30	<i>lunch</i>		
15:30–16:30	<i>Posters attendance</i>		
	Room A:	Room B:	Room C:
16:30–17:30	MALENE-IV	MLCVR-IV	SHIFT-I
17:30–18:30			SHIFT-II
18:30–19:30	<i>Brain &amp; Arts. Prof. E. Fernández</i>		
19:30–20:00	<i>free time</i>		
20:00–	<i>Welcome Reception</i>		
<b>Thursday May 28</b>			
09:00–10:00	<i>Plenary Session II: Prof. Pablo Laguna</i>		
	Room A:	Room B:	Room C:
10:00–11:00	NEURPROT	NT4SM-I	BICA-I
11:00–11:20	<i>coffee break</i>		
	Room A:	Room B:	Room C:
11:20–12:40	ROBOTICS-I	NT4SM-II	BICA-II
12:40–14:00	ROBOTICS-II	NT4SM-III	BICA-III
14:00–15:30	<i>lunch</i>		
15:30–16:30	<i>RTNAC network meeting*</i>		
16:30–17:30	<i>CYTED network meeting*</i>		
17:30–21:00	<i>free time</i>		
21:00–	<i>Official Dinner</i>		
<b>Friday May 29</b>			
09:00–10:00	<i>Plenary Session III: Prof. Pedro Gómez-Vilda</i>		
	Room A:	Room B:	Room C:
10:00–11:00	ECTLAB	ISATAA	ERTMLA
11:00–11:20	<i>coffee break</i>		
11:20–12:40	CFIS	AFCAL-II	SCAPC
12:40–14:00	<i>Closing Ceremony</i>		
afternoon	<i>free time</i>		

# IWINAC/ICINAC-2026 Sessions Schedule.

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- Session: Plenary-I May, 27. 09:00—10:00 Room: A  
“Invited speaker: Prof. Hojjat Adeli”  
“Impacts of AI on the Humanity: Utopia versus Dystopia”
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- Session: MALENE-I May, 27. 10:00—11:00 Room: A  
“MALENE: 3rd Workshop on Machine Learning in Neuroscience”  
Chair: Francisco J. Martinez-Murcia Co-Chair: Juan M.Gorriz
    - “Extracting Circadian Rhythms from Continuous Glucose Monitoring via Physics-Constrained Empirical Mode Decomposition”  
*Diego Castillo-Barnes, Ignacio Rodríguez-Rodríguez, Nelsa González, Andrés Ortiz, Claudio Laudani, Luis Ortega-Paz, Francesco Costa*
    - “Hilbert spectrum-based approach for fNIRS interhemispheric functional connectivity analysis” *Nicolás J. Gallego-Molina, Andres Ortiz García, Diego Castillo-Barnes, Ignacio Rodriguez-Rodriguez*
    - “Schizophrenia Detecting using Reinforcement Learning-based Active Learning and Hyperparameter Optimization” *Mohammad Mahdi Motevalli, Seyed Vahid Moravvej, Roohallah Alizadehsani, Juan M Gorriz*
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- Session: MLCVR-I May, 27. 10:00—11:00 Room: B  
“S02: Machine Learning in Computer Vision and Robotics (MLCVR)”  
Chair: José García-Rodríguez Co-Chair: Enrique Dominguez
    - “Interactive Pressure Ulcer Segmentation: A Point-Prompted DeepLabV3+ Approach” *Wasfieh Nazzal, Karl Thurnhofer-Hemsi, Francisco J. Veredas, Ezequiel Lopez-Rubio*
    - “Is it real? A Mixed Reality experience about Depersonalization and Derealization” *Paula Lario-Llinares, David Mulero-Pérez, David Ortiz-Perez, Jose Garcia-Rodriguez, David Alarcon-Garrido, Laura Saval-Cillero*
    - “MetaNav: A Bio-Inspired Meta-Imitation Learning Framework for Robotic Visual Semantic Navigation” *Carlos Gutierrez, Rafael Flor-Rodríguez-Rabadán, Sergio Lafuente, Saturnino Maldonado, Roberto Lopez-Sastre*
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- Session: NEURDIS-I May, 27. 10:00—11:00 Room: C  
“NeurDis: Functional Evaluation of Neuromotor and Cognitive Disorders”  
Chair: Pedro Gómez Vilda Co-Chair: Emilia Barakova
  - “Perspectives on Making Sense of Complex Data: Towards Integrative Human-Aware Evaluation” *Martin Atzmueller, David Massanés, Xiao Wei*
  - “Automatic detection of Williams Syndrome using acoustic tremor features: a noninvasive and low-cost method” *Raúl Fernández-Ruiz, Daniel Palacios-Alonso, Nikola Hristov-Kalamov, Agustín Álvarez-Marquina, Irene Hidalgo-de la Guía, Elena Garayzabal-Heinze, Andrés Gómez Rodellar, Rafael Martínez-Olalla*
  - “VR-Based Hand-Motion Assessment for Parkinson’s Disease: A Prototype Adapted for Secure Privacy-Preserving Neural Classification”

- Session: MALENE-II May, 27. 11:20—12:40 Room: A  
“MALENE: 3rd Workshop on Machine Learning in Neuroscience”

Chair: Javier Ramírez Co-Chair: Andrés Ortiz

- “Drop in Transfer Entropy between EEG Bands during Auditory Steady-State Response in Developmental Dyslexia”  
*Ignacio Rodriguez-Rodriguez, Francisco José Enamorado-Martín, Inês Domingues, Diego Castillo-Barnes, Nicolás J. Gallego-Molina, Andres Ortiz García*
- “Modeling and Predicting Age-at-Onset Trajectories in Genetic Frontotemporal Dementia Using Survival Methods” *Juan Eloy Arco, Lena Marth, Sonja Schönecker, Francisco Jesus Martínez-Murcia, Catharina Prix, Elisabeth Wlasich, Alexander Bernhardt, Anna Stockbauer, Arabella Bouzigues, Lucy Chisman-Russell, Eve Ferry-Bolder, Phoebe H. Foster, Günter U. Höglinger, Jonathan D. Rohrer, Bradley F. Boeve, Adam L. Boxer, Howard J. Rosen, Hilary W. Heuer, Leah K. Forsberg, E. Marisa Ramos, Javier Ramirez, Juan M Gorriz, Johannes Levin*
- “Feasibility of EEG-based bimanual upper-limb exoskeleton control for activities of daily living” *Yolanda Vales Gómez, Esther Peral Sempere, Raúl Martín Batanero, David Martínez Pascual, Jose María Catalán Orts, Andrea Blanco Ivorra, Nicolas Garcia-Aracil*
- “Longitudinal Modeling of Alzheimer’s Disease Progression Using a Bayesian Latent Framework with APOE-Dependent Genetic Effects”  
*Cristóbal Vázquez García, Francisco Jesus Martínez-Murcia, Fermin Segovia, Anabel Forte Deltell, Javier Ramirez, Ignacio Alvarez Illan, Alejandro Hernández Segura, Carmen Jiménez Mesa, Juan M Gorriz*

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- Session: MLCVR-II May, 27. 11:20—12:40 Room: B  
“S02: Machine Learning in Computer Vision and Robotics (MLCVR)”

Chair: Ramón Moreno Co-Chair: José García-Rodríguez

- “Automatic screening of invasive coronary angiography images using Swin Transformer” *Juan Jesús Rus Muñoz, Ariadna Jiménez-Partinen, Mario Pascual-González, Esteban J. Palomo, Jorge Rodríguez-Capitán*
- “Generalizable 3D Glioblastoma Segmentation from Single-Sequence T1-GD MRI”  
*Ana González Morales, Ariadna Jiménez-Partinen, David Muñoz Carmona, Luz Rubí Olea, Lucía Ripoll Sánchez, Fátima Nagib-Raya, Ezequiel Lopez-Rubio, Rafael Marcos Luque Baena*
- “A Standardized Multimodal Dataset Recording Protocol for Early Cognitive Impairment Screening” *David Ortiz-Perez, David Mulero-Pérez, David Alarcon-Garrido, Laura Saval-Cillero, Jose Garcia-Rodriguez, M. Flores Vizcaya-Moreno*
- “Contrast-Focused Preprocessing for Skin Lesion Segmentation and Classification” *Aboubakr Aakaou, Karl Thurnhofer-Hemsi, Enrique Dominguez*

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- Session: NEURDIS-II May, 27. 11:20—12:40 Room: C  
“**NeurDis: Functional Evaluation of Neuromotor and Cognitive Disorders**”  
Chair: Marina Jodra Co-Chair: Gema Benedicto
    - “Phonation-Encephalographic Signatures as Interpretable Biomarkers of Cortical-Limbic Dysfunction in Autism Spectrum Disorder” *Andrés Gómez Rodellar, Marina Jodra, Pedro Gomez Vilda, Daniel Palacios-Alonso, José Manuel Ferrandez*
    - “Slow/fast spectral dynamics during active, assisted, and observed hand movements: beyond mu and beta”  
*Juan Barios, Yolanda Vales Gómez, Nicolas Garcia-Aracil*
    - “Computational Intelligence Approaches to Autism Spectrum Disorder Detection Using Eye-Tracking: A State-of-the-Art Analysis”  
*Carlos Sánchez Muñoz, Gema Benedicto Rodríguez, José Manuel Ferrandez*
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- Session: MALENE-III May, 27. 12:40—14:00 Room: A  
“**MALENE: 3rd Workshop on Machine Learning in Neuroscience**”  
Chair: Juan M.Gorriz Co-Chair: Javier Ramírez
    - “Survival Modeling in the Latent Space for Alzheimer’s Prognosis”  
*Francisco Jesus Martínez-Murcia, Ignacio Alvarez Illan, Fermin Segovia, Alejandro Hernández Segura, Carmen Jiménez Mesa, Juan Eloy Arco, Javier Ramirez, Juan M Gorriz*
    - “Segmentation of Traumatic Brain Injury on Magnetic Resonance Imaging”  
*Jenifer Castaño Ledesma, Deisy Chaves, Pedro Alejandro Amador Rodriguez, Maria Trujillo, Alejandro Herrera Trujillo*
    - “From Regions to Manifolds: linking Radiomic Signatures with PCA and UMAP Brain Representations in Glioma” *Carmen Jimenez-Mesa, Yizhou Wan, Giulio Sansone, Nicolás J. Gallego-Molina, Andrés Ortiz, Cristóbal Vázquez García, Juan M Gorriz, Stephen J. Price, John Suckling, Michail Mamalakis*
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- Session: MLCVR-III May, 27. 12:40—14:00 Room: B  
“**S02: Machine Learning in Computer Vision and Robotics (MLCVR)**”  
Chair: Enrique Dominguez Co-Chair: Ramón Moreno
    - “Evaluating Long Short-Term Memory Autoencoders for Vehicle Hijacking Detection on Unified Heterogeneous Datasets”  
*Edison Solórzano, Jorge Parraga-Alava, Enrique Dominguez*
    - “Autonomous Localization and Navigation for Quadruped Robots in Outdoor Pedestrian Environments”  
*Carmen Losantos-Pulido, Félix Escalona, Francisco Gomez Donoso*
    - “Impact of Preprocessing Algorithms on Deep Learning-driven Stenosis Classification in Invasive Coronary Angiography”  
*Ariadna Jiménez-Partinen, Miguel A. Molina-Cabello, María Paulina Ordóñez Walkowiak, Jorge Rodríguez-Capitán, Ana I. Molina-Ramos, Manuel Jiménez-Navarro*
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- Session: NEURDIS-III

May, 27. 12:40—14:00 Room: C

**“NeurDis: Functional Evaluation of Neuromotor and Cognitive Disorders”**

Chair: Marina Jodra

Co-Chair: Gema Benedicto

- “Integrated AI System for Physiological Assessment of Pain and Social Robot Intervention”

*Emilia I. Barakova, Peter Peters, Alexia Dragomirescu, Ana Sirbu, Kallista Komdeur, Malina Corduneanu, Mara Burghelea, Nora Balje, Paula Stenkerburg*

- “Isometric Wrist Control Assessed Through Electrospinography and Electromyography Signals” *Desirée Irene Gracia, Chan-Shien Cho, Mario Ortiz, José L. Pons, Eduardo Iáñez, José M. Azorín*
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- Session: POSTERS  
“Posters Attendance”

May, 27. 15:30—16:30 Room: A

1. “Visual Analytics of Lung Cancer Risk in a Virtual Research Environment”  
*Delia Aminta Moreno-Perdomo, Virginia González-Diez, Antonio Jesús Díaz-Honrubia, Lucía Prieto Santamaría, Guillermo Viguera, Alejandro Rodríguez González, Paloma Tejera-Nevaldo*
2. “An Offline Handwriting Approach to Parkinson’s Disease Detection”  
*Daniel Corredor, Angel Sanchez*
3. “An Exhaustive Ordinal ECOC Framework for Ordinal Classification”  
*Francisco Bérchez-Moreno, Victor Manuel Vargas, Alberto Suárez, Lorena Álvarez-Pérez, Pedro Antonio Gutierrez*
4. “Glucose Variability and Its Association with Short-Term Glucose Prediction in Type 1 Diabetes”  
*Andrea Hongn, Francisco Javier Garrigos Guerrero, María Paula Bonomini*
5. “Towards Machine Learning-Enhanced Ad Hoc Networks for Disaster Scenarios”  
*Wilman Suárez-Zambrano, Juan Pablo Astudillo-León, Leticia Lemus-Cárdenas, Lorena de los Angeles Guachi Guachi, Diego Peluffo-Ordóñez*
6. “Automatic Detection of Methane Emissions in Urban Landfills using Hyperspectral Imaging and Machine Learning”  
*José Manuel Alcántara Pérez, María Gema Carrasco García, Francisco Javier González Enrique, Juan Jesús Ruiz Aguilar, Ignacio José Turias Domínguez*
7. “Modeling Non-Linear Atmospheric Dynamics: A Comparative Study of Attention-based CNN-LSTM and XGBoost for Ozone Forecasting”  
*Francisco Javier González Enrique, María Gema Carrasco García, Juan Jesús Ruiz Aguilar, Paloma Rocío Cubillas Fernández, Ignacio José Turias Domínguez*
8. “Artifact-Minimized Multi-Unit Activity Estimation Using Polynomic Interpolation”  
*Rocío López Peco, Alfonso Rodil Doblado, Cristina Soto-Sánchez, Mikel Val-Calvo, Eduardo Fernandez*

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- Session: MALENE-IV

May, 27. 16:30—17:30 Room: A

“MALENE: 3rd Workshop on Machine Learning in Neuroscience”

Chair: Andrés Ortiz

Co-Chair: Francisco J. Martinez-Murcia

- “Early Diagnosis of Epileptic Seizures from EEG Signals Using Graph Convolutional Network Model”  
*Afshin Shoeibi, Mohammad Mehdi Barzegar, Marjane Khodatars, Mahboobeh Jafari, Abdoljavad Khajavi, Juan M Gorriz*
- “Assessing the Robustness of Clinical-Metabolic Activity Models Through SAR in the PPMI Dataset”  
*Alejandro Hernández Segura, Ignacio Alvarez Illan, Javier Ramirez, Fermin Segovia, Cristóbal Vázquez García, Francisco Jesus Martínez-Murcia, Juan M Gorriz*
- “Ordinal Classification for Alzheimer’s Disease”  
*Miguel Ángel Contreras Córdoba, Juan Eloy Arco, Juan M Gorriz, Pedro Antonio Gutierrez*

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- Session: MLCVR-IV May, 27. 16:30—17:30 Room: B  
“**S02: Machine Learning in Computer Vision and Robotics (MLCVR)**”  
Chair: José García-Rodríguez Co-Chair: Enrique Dominguez
    - “Benchmarking PointNet++ and RandLA-Net for Urban Furniture Segmentation with Consumer-Grade LiDAR: A Pilot Study” *Geovanny Satama-Bermeo, Daniel Caballero-Martin, Hicham Affou, Erol Kurt, José Manuel López Guede*
    - “Dealing with the feature distribution of mammogram images by means of GAN architectures when using multiple datasets”  
*Ricardo Javier Fuentes-Fino, Miguel A. Molina-Cabello, Enrique Dominguez*
    - “Real-Time GPU-Accelerated Assistive Navigation Using Meta Aria Smart Glasses” *Roberto Rojo, Juliana Manrique Cordoba, Jose M Sabater-Navarro, Eduardo Fernandez*

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- Session: SHIFT-I May, 27. 16:30—17:30 Room: C  
“**SHIFT: Social and Civil Engineering through Human AI Translations**”  
Chair: Francisco Segovia Co-Chair: Javier Ramirez
    - “A Bio-inspired Cross-modal Attention Framework for Robust Multimodal Multimedia Perception”  
*Kimia Shirini, Sina Samadi Gharehveran, Siamak Pedrammehr, Juan M Gorriz*
    - “An ensemble-based semi-supervised machine learning framework for anomaly detection in second-life electric vehicle batteries”  
*Martha Ivon Cardenas, Alfredo Vellido, Roberto Santana*
    - “Fraud Detection Using Graph Neural Networks: A survey”  
*Emrah Arslan, Samiyeh Khosravi, Javad Hassannataj Joloudari, Roohallah Ali-zadehsani, Juan M Gorriz*
    - “YOLOv8n for Automated Identification of Visually Similar Snapper Species in Operational Fish Processing Environments”  
*Lorena de los Angeles Guachi Guachi, Mateo Ballagan, Estefanía Oñate, Lorena Molina, Saravana Prakash Thirumuruganandham, Diego Peluffo-Ordóñez*

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- Session: SHIFT-II May, 27. 17:30—18:30 Room: C  
“**SHIFT: Social and Civil Engineering through Human AI Translations**”  
Chair: Juan M. Gorriz Co-Chair: Francisco Segovia
    - “Safe UAV Obstacle Avoidance via Q-Learning in ROS2-Gazebo Simulation”  
*Daniel Caballero-Martin, Geovanny Satama-Bermeo, Hicham Affou, Julian Estevez, José Manuel López Guede*
    - “Hybrid CNN-LSTM Architecture for Financial Trend Prediction: Integrating NLP Sentiment and Derivative Models in High-Volatility Assets”  
*Miguel Angel Parrilla, Fermin Segovia, Alvaro Zorrilla, Cristóbal Vázquez García, Francisco Jesus Martínez-Murcia, Juan M Gorriz*
    - “Prioritizing Telecontrol Repairs in Electrical Distribution Networks Using Graph-Based Impact Analysis” *Alvaro Zorrilla, Fermin Segovia, Javier Ramirez, Isidro Jesús Aguilera, Antonio Manuel Vargas, José Bello, Juan M Gorriz*

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- Session: Plenary-II May, 28. 09:00—10:00 Room: A  
“**Invited speaker: Prof. Pablo Laguna**”  
“**ECG Biomarkers for Sudden Cardiac Death Risk Identification and AF Management**”
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- Session: NEURPROT May, 28. 10:00—11:00 Room: A  
“**Neuroprosthesis, Ethics. EPISTEAM**”  
Chair: Eduardo Fernández Jover Co-Chair: Jose M. Ferrández
    - “Validation of an Integrated Virtual Reality Platform for Low Vision and Visual Neuroprostheses Simulation”  
*Maria del Mar Ayuso Arroyave, Leili Soo, Antonio Lozano, Roberto Morollón Ruiz, Aimee Solzbacher, Cristina Soto-Sánchez, Eduardo Fernandez*
    - “Artificial Intelligence in Cortical Visual Prostheses: From Phosphene Encoding to Closed-Loop Neuroprosthetic Vision”  
*Alicia Aniorte, Marta Gea, Francisco Javier Garrigos Guerrero, Jose Javier Martinez-Alvarez, José Manuel Ferrandez*
    - “Visual Cortex Stimulation Modulates Muscle Networks Underlying Postural Control in Blindness”  
*Ana Lia Albarracin, Leonardo Ariel, Fernando Farfan, Eduardo Fernández*
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- Session: NT4SM-I May, 28. 10:00—11:00 Room: B  
“**NT4SM: Intelligent Systems for the Study and Support of Youth Mental Health (CYTED)**”  
Chair: Maria Paula Bonomini Co-Chair: Gema Benedicto
    - “Depression Detection using Cross-Attention Multimodal Fusion on Audio-Visual Data” *Nima Saeedi, Kimia Shirini, Sina Samadi Gharehveran, Saman Rajebi, Siamak Pedrammehr, Roohallah Alizadehsani, Juan M Gorriz*
    - “Affective touch in haptic interfaces, a preliminary study of textures”  
*Gonzalez Sanchez, Arturo S. García, Antonio Fernández-Caballero, José Pascual Molina*
    - “Technological Mediation in Emotional Literacy: Evaluation of Artificial Intelligence Agents in the EMOCREA Project”  
*Pedro Salcedo Lagos, Mabel Urrutia, Cristian Medina Rojas*
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- Session: BICA-I May, 28. 10:00—11:00 Room: C  
“**S01: Bio-Inspired Computing Approaches (BICA)**”  
Chair: José Santos Co-Chair: Ramiro Varela
  - “Clustering the Latent Space in Variational Autoencoders for Image Generation” *Diego Martínez, José Santos Reyes*
  - “Evolutionary algorithms for a routing problem with electric vehicles and zone prices” *Francisco Javier Gil Gala, Sezin Afsar, Juan José Palacios, Hasan Murat Afsar, Marko Durasević*

- “Memetic Algorithm for the Scientific Workflow Scheduling Problem with a Disk-Network-Computation model” *Pelayo González García, María R. Sierra, Jorge Puente Peinador, Francisco Javier Gil Gala*
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- Session: ROBOTICS-I May, 28. 11:20—12:40 Room: A  
“**ROBOTICS**”

Chair: Richard Duro

Co-Chair: Francisco Bellas

- “A Green Computing Approach for Sustainable Robotic Task Planning using Knowledge Graphs” *Miguel Ángel González Santamarta, Alejandro González Cantón, Irene González-Fernández, Francisco Martín Rico, Francisco J Rodríguez-Lera*
  - “Head-Level Structural Collapse for Scalable Preferred Semantics in Norm-Based Robotic Reasoning” *Francisco J Rodríguez-Lera, Irene González-Fernández, Miguel Ángel González Santamarta, Francisco Martín Rico, Pere Pardo Ventura*
  - “A Motivational Approach Towards Resilient Industrial Robots”  
*Jakub Müller, Alejandro Romero, Tomáš Broum, Richard J. Duro*
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- Session: NT4SM-II May, 28. 11:20—12:40 Room: B  
“**NT4SM: Intelligent Systems for the Study and Support of Youth Mental Health (CYTED)**”

Chair: Maria Paula Bonomini

Co-Chair: Gema Benedicto

- “Multimodal Depression Detection Using Hierarchical Fusion of DistilBERT and Bi-LSTM Encoders: A Deep Learning Approach on the DAIC-WOZ Corpus”  
*Francisco Ortiz, Pedro Salcedo Lagos, Juan M Gorritz*
  - “Considering ROI Selection for rPPG Beyond Heart Rate Measurement”  
*Pedro Lucas Barrera, María Paula Bonomini, Cristian Mateos*
  - “Explainable AI-Based Connectivity Learning for ADHD Detection from EEG Signals” *Diego Armando Perez Rosero, Noelia Belén Rios, María Paula Bonomini, Andrés Álvarez-Meza*
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- Session: BICA-II May, 28. 11:20—12:40 Room: C  
“**S01: Bio-Inspired Computing Approaches (BICA)**”

Chair: José Santos

Co-Chair: Ramiro Varela

- “Non-dominated Sorting Genetic Programming for solving a Bi-objective Bin Packing Problem” *Jesús Quesada, María R. Sierra, Marko Durasević, Ramiro Varela Arias, Francisco Javier Gil Gala*
  - “Valuated Multiset Reaction Systems With Maximal Evolution”  
*Victor Mitrana, Andrei Paun, Mihaela Paun*
  - “Solving the 3L-CVRP via Sparrow Search with NBC-Based Adaptive Parameter Control” *Sandy Iturra, Rodrigo Olivares*
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- Session: ROBOTICS-II May, 28. 12:40—14:00 Room: A  
“**ROBOTICS**”

Chair: Richard Duro

Co-Chair: Francisco Bellas

- “Integrating Large Language Models for Explainable Human-Machine Teaming in Autonomous Vehicles” *Jaime Pérez Moro, Alejandro Romero, Francisco Bellas*
- “Heterogeneous multi-robot team hybrid coordination architecture for missions in dynamic maritime environments” *Richard Duro, Enrique Fernández-Pérez, Julián Rodríguez-Cortegoso, Felix Orjales*

- Session: NT4SM-III May, 28. 12:40—14:00 Room: B  
**“NT4SM: Intelligent Systems for the Study and Support of Youth Mental Health (CY-TED)”**  
 Chair: Maria Paula Bonomini Co-Chair: Gema Benedicto
  - “Text-Conditioned Semantic Aggregation for Audio-Based Multiple-Instance Learning in Depression Detection” *Alejandro Patiño-Bedoya, Diego Armando Perez Rosero, Andrés Álvarez-Meza, German Castellanos-Dominguez*
  - “Explainable Mortality Risk Prediction with Causality via Hierarchical Bayesian Network” *Gatum Erlangga, Jaeil Park, Sung-Bae Cho*

- Session: BICA-III May, 28. 12:40—14:00 Room: C  
**“S01: Bio-Inspired Computing Approaches (BICA)”**  
 Chair: José Santos Co-Chair: Ramiro Varela
  - “A CNN-based approach to the reverse Game of Life problem” *Ángel Fernández Caravaca, David Guijo Rubio, Victor Manuel Vargas*
  - “Quantum-Classical Hybrid Genetic Evolutionary Algorithm for Traffic Signal Timing Optimization: A Case Study in the City of Vitoria-Gasteiz” *Hicham Affou, Francesc Rodríguez Díaz, Martinez-Alvarez Francisco, José Manuel López Guede*
  - “A Genetic Algorithm Framework for Scheduling in Automated Laboratory Analyzers” *Carlos Sánchez Muñoz, José Rojas González*

- Session: Plenary-III May, 29. 09:00—10:00 Room: A  
**“Invited speaker: Prof. Pedro Gómez”**  
**“The Arc of Speech Intelligence: From Lorente de No’s Loops to Explainable Deep Learning in Neurodegeneration”**

- Session: ECTLAB May, 29. 10:00—11:00 Room: A  
**“ECTLAB: European Culture and Technology Lab (EUT+). EPISTEAM”**  
 Chair: J.M. Ferrández Co-Chair: Silivan Moldovan
  - “Machine Voices for Human Histories: Mixed Epistemologies for Architectural Heritage” *Silivan Moldovan, Ioana Moldovan*
  - “Virtue Ethics and Emerging Technologies: Ethical Challenges in AI, Robotics, and Affective Computing” *José Manuel FERRANDEZ, Gema BENEDICTO, María Paula BONOMINI and Noel FITZPATRICK*
  - “A computational interaction model and architecture inspired by Pivotal Response Treatment (PRT)” *Gema Benedicto Rodríguez, José L. Gómez-Sirvent*

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- Session: ISATAA May, 29. 10:00—11:00 Room: B  
“**S04: Intelligent Systems for Assessment, Treatment, and Assistance in early stages of Alzheimer**”

Chair: Rafael Martínez Tomás

Co-Chair: Mariano Rincón Zamorano

- “Estimating MMSE Scores from Conversational Transcripts Using Quantized Large Language Models” *Alberto Penas, Miguel Angel Patricio Guisado, Jose Manuel Molina Lopez, Antonio Berlanga*
  - “Diagnostic tools of Neurodegenerative Conditions with Spiking Neural Networks” *David Bernal-Casas, Estela Díaz-López, Margarita Bachiller Mayoral, Teresa Cid Bartolomé, Mariano Rincon Zamorano*
  - “Do Contrastive Representations Help in Low-Sample Tabular Clinical Data? Insights from Cognitive Impairment” *Estela Díaz-López, Berta López-Pombero, Margarita Bachiller Mayoral, Mariano Rincon Zamorano, Marta García Rodríguez*
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- Session: ERTMLA May, 29. 10:00—11:00 Room: C  
“**S03: Explainable, Robust and Trustworthy Machine Learning and its Applications**”

Chair: Alfredo Vellido

Co-Chair: Caroline König

- “Trustworthy AI for neonatal facial monitoring in real NICU environments” *Nuria Velasco, Nuño Basurto, Juan Arnaez, Álvaro Herrero, Daniel Urda*
  - “Evaluating Privacy Preservation in Regression Models for a Small Medical Dataset” *Caroline Konig, Pedro Jesús Copado Mendez, Cecilio Angulo Bahun, Angela Nebot Castells, Alfredo Vellido*
  - “Interpretable MobileNetV3 for Early and Late Blight Detection in Andean Potato Leaves” *Lorena de los Angeles Guachi Guachi, Esteban Gavilánéz, Jeffrey Guerrero, Victor Osejo, Robinson Guachi, Wilman Suárez-Zambrano, Diego Peluffo-Ordóñez*
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- Session: CFIS May, 29. 11:20—12:40 Room: A  
“**S05: Crisp and Fuzzy Intelligent Systems (CFIS)**”

Chair: Antonio J. Tallón-Ballesteros

Co-Chair: Mariano Rincón Zamorano

- “From Adversarial Attacks to Demonstrations for Robust NLP Systems” *Natalia Madrueno, Óscar Soto-Sánchez, Daniel Palacios-Alonso, Alberto Fernández-Isabel, Isaac Martín de Diego*
  - “Patch-Based Explainability for CNN Classification Models” *Guido Bologna*
  - “Hybrid SAT-based Decision Trees” *Marco Perrotta, Guido Sciavicco, Simona Tenasini*
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- Session: LTTL May, 29. 11:20—12:40 Room: B  
“**S08: Learning tools to lecture**”

Chair: Antonio J. Tallón-Ballesteros

Co-Chair: Sung Bae. Cho

- “Teaching Embodied Artificial Intelligence to Children through Computer-Based Simulation: the TEACH E-AI 2C Robotic Farm” *Clara Nobile, Alessio Manfredini, Davide Marocco, Onofrio Gigliotta, Michela Ponticorvo*

- “Embodied Reading: Enhancing Digital Reading Comprehension through Lecto-entreno System” *Mabel Urrutia, Michael Villanueva, Pamela Guevara, Karina Fuentes-Riffo, Pedro Salcedo Lagos, Esteban Pino, Geoffrey Hecht*
  - “GUI-based tools to lecture data analytics: an exploratory data analysis scenario” *Kelsy Cabello-Solorzano, Alejandro Bautista-Juárez, Luís Correia, Sung-Bae Cho, Antonio J. Tallón-Ballesteros*
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● Session: SCAPC May, 29. 11:20—12:40 Room: C

“S07: Socio-Cognitive, Affective and Physiological Computing”

Chair: Antonio Fernández Caballero

Co-Chair: Jose M. Ferrández

- “Exploring Whisper’s Latent Space for Emotion Recognition from Vocal Bursts”  
*José L. Gómez-Sirvent, Francisco López de la Rosa, Paulo Novais, Antonio Fernández-Caballero*
  - “Multimodal Temporal Deep Learning for ADHD Classification in Ecologically Valid Virtual Reality: An Exploratory Study”  
*Francisco Javier Celdrán, Roberto Sánchez-Reolid, José J. González-García, Dulce Romero-Ayuso, Olga C. Santos, Pascual González*
  - “Design of an Embodied Conversational Agent for Autism Intervention: A Comparative Framework Between Physical Robots and Virtual Agents”  
*José L. Gómez-Sirvent, Gema Benedicto Rodríguez, Antonio Fernández-Caballero*
  - “Comparative Evaluation of Recent Deep Architectures for Arousal Classification from Electrodermal Activity” *Roberto Sánchez-Reolid, Francisco Javier Celdrán, Daniel Sánchez-Reolid, Antonio Fernández-Caballero*
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# Social Program

**Coffee break** May 27, 28 and 29, from 11:00 am to 11:20 am. Served at the entrance of room A.

**Lunch** May 27 and 28, for registered participants (standard and attendant A) and accompanying persons with [blue](#), [green](#), [yellow](#), [red](#), [purple](#) and [orange](#) ticket. Served at 14:00 h. in the restaurant inside the Congress Venue (Barcelo Fuerteventura Mar).

**Brain & Arts** May 27, Wednesday. Prof. E. Fernández.

**RTNAC meeting** May 28, Thursday, 15:30–16:30, Room A. Meeting in Spanish, for RTNAC members only.

**CYTED meeting** May 28, Thursday, 16:30–17:30, Room A. Meeting in Spanish, for CYTED members only.

## May 27, Wednesday

20:00 h. – **Welcome Reception** at the Resort Marina, [Barcelo Fuerteventura Mar](#).

## May 28, Thursday

21:00 h. – Congress **official dinner** (casual wear) in *Hotel Elba Palace*  
Buses will depart from Congress Venue at 20:30h. In addition, a shuttle bus will be available at the end of the dinner to return to the Hotel Barcelo Fuerteventura Mar.

# Congress Venue

[Barcelo Fuerteventura Mar](#) Avenida del castillo SN, Caleta de Fuste, 35610, Antigua, (Spain)

Plus Code: [94XR+4PX Castillo Caleta de Fuste](#)

\* Special reduced prices for accommodation in the hotel and near it through our Technical Secretariat (see contact in the next page).

## Internet connection

During the conference venue there will be wireless access (802.11b/802.11g compatible) to Internet available inside and near the conference rooms, and also some wired connections in a specific place.

## Language

English will be the official language of IWINAC/ICINAC2026. Simultaneous translation will *not* be provided.

# Registration Fees

The registration form must be completed with the Conference Technical Secretariat, BCD M&E Travel (please, see the address below), at your earliest convenience. The form must be accompanied by the payment in Euros. No registration will be considered until the payment is received.

Registrations fees	Until April 30th	After April 30th
Standard (*) (+) (#)	€525	€625
Session Organizer (*) (+) (#)	€425	€525
Attendant A (*) (+)	€200	€225
Attendant B (+)	€125	€150
2nd paper and more (#)	€325	€375

- (\*) Includes attending the sessions, coffee breaks and lunches.
- (+) Includes social events (welcome reception and sight-seeing tour) and official dinner.
- (#) Includes the “Lecture Notes in Computer Science” books (Springer-Verlag) of the work-conference proceedings.

## Technical Secretariat of the Conference

Please, contact the Technical Secretariat for any information or details about registration, accommodation, travels, etc.

**Ana M<sup>a</sup> García del Alba**  
**BCD M&E**  
Avenida Maisonnave, 11, 7<sup>o</sup>  
E-03003 Alicante (Spain)  
Phone: (+34) 910-53-75-44  
E-mail: <[iwinac.icinac@bcdme.es](mailto:iwinac.icinac@bcdme.es)>

Starting 15:30 h. **May 26**, and during the Conference, the Secretariat will maintain a desk at the congress venue. Previous registration will be necessary to attend the Conference. Registration form: [https://www.bcdeventos.es/qrnbcd/fonline/cong/acceso\\_cong.php?idcgrs=975355&idioma=en](https://www.bcdeventos.es/qrnbcd/fonline/cong/acceso_cong.php?idcgrs=975355&idioma=en)



Congress URL <http://iwinac.eu/iwinac.org/iwinac2026/>

# Travel Information

**Fuerteventura Airport** (international code “FUE”) with flights from Spain, and many international airports is located 7 km from the Congress venue in Caleta de Fuste (Antigua). Please, contact our **Technical Secretariat** (BCD M&E) for more detailed information on travel and accommodation.

**Fuerteventura**, declared a UNESCO Biosphere Reserve, is one of the main islands of the Canary Islands archipelago (Spain). Known for its stunning white-sand beaches and volcanic landscapes, it is a world-renowned destination for tourism and outdoor activities. The island features a desert-like subtropical climate, characterized by warm temperatures and very low rainfall throughout the year. During May, median daily temperatures are around 21-24 °C, with a refreshing sea breeze and sunshine guaranteed, making it an ideal location for international gatherings.

Interactive map of IWINAC/ICINAC2026 places: [https://v.gd/map\\_ICINAC2026](https://v.gd/map_ICINAC2026)

## Currency, Banks and Tipping

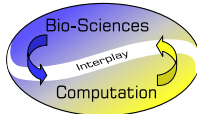
The monetary unit in Spain is the EURO (symbol €). The euro is divided into a hundred cents (symbol ¢). Coins: 1, 2, 5, 10, 20 and 50 cents; 1 and 2 euros. Banknotes: 5, 10, 20, 50, 100, 200 and 500 euros. Banknotes of 500 euros are usually only accepted at bank offices. The maximum cash payment allowed is 2500 euros. All international credit cards (Visa, American Express, Master Card, Euro-card, Diners Club, etc.) are widely accepted by hotels, restaurants and shops, and also in many ATMs or cashpoints. Business is transacted from 09:00 to 14:00 h. Monday to Friday. Money can be changed outside normal banking hours at hotels, travel agencies and other business, displaying a “Cambio/Change” sign. Take your passport or identity card with you when changing traveler’s checks. Since the service charge is normally included in restaurant, hotel and taxi bills, tipping is always optional.

## Electricity

Electric supply is AC 220 V / 50 Hz standard continental European, with two round pin plugs for appliances.

## Assistance and insurance

Participants are advised to make their own arrangements regarding travel insurance and medical assistance during the Conference. Neither the Organization nor the Conference Secretariat is able to accept any responsibility whatsoever for damage or injury to persons or their belongings during the Conference.



IWINAC/ICINAC2026



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