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- Session: Plenary I June, 23. 09:30–11:00 Room: A
“**Homage to Prof. Jose Mira**”
Chair: Darío Maravall
Co-Chair: José Manuel Ferrández
 - “On bridging the gap between human knowledge and computers: A personal tribute in memory of Prof Mira”
Roque Marin
 - “Personal notes about the figure and legat of Professor Mira”
Ramon Ruiz Merino
 - “Intelligent patient monitoring: from hardware to learnware”
Senen Barro Ameneiro
 - “A look toward the past of my work with the professor José Mira”
Francisco J. Ríos Gómez
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- Session: J. Mira’s works June, 23. 11:30–13:30 Room: A
“**A retrospective on Prof. Jose Mira’s scientific work**”
Chair: Darío Maravall
Co-Chair: Antonio Bahamonde
 - “Remembering José Mira”
Isabel Gonzalo
 - “Detection of Speech Dynamics by Neuromorphic Units”
Pedro Gomez Vilda, Jose Manuel Ferrandez, Victoria Rodellar, Agustin Alvarez, Luis Miguel Mazaira, Rafael Martinez, Cristina Muñoz
 - “Spatio-Temporal Computation with Neural Sensorial Maps”
Jose Ferrandez, Fco. Javier Toledo Moreo, Jose Manuel Ferrandez
 - “Knowledge-Based Systems: A Tool for Distance Education”
Pedro Salcedo Lagos, María Punninghoff Junemann, Ricardo Contreras
 - “Revisiting Algorithmic Lateral Inhibition and Accumulative Computation”
Antonio Fernandez-Caballero, Maria T. Lopez, Miguel A. Fernández, José M. López-Valles
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- Session: Bioinspired Applications I June, 23. 11:30–13:30 Room: B
“**Processing Languages with bio-molecules**”
Organizer & Chair: M. Dolores Jimenez-Lopez
Co-Chair: Gemma Bel-Enguix
 - “Recombination Patterns for Natural Syntax”
M. Dolores Jimenez-Lopez, Vincenzo Manca
 - “Computing Natural Language with Biomolecules: Overview and Challenges”
Gemma Bel-Enguix
 - “A Christiansen Grammar for univerval splicing systems ”
Alfonso Ortega, Marina de la Cruz
 - “DNA replication as a model for computational linguistics”
Veronica Dahl
 - “jNEPView: a graphical trace viewer for the simulations of NEPs”
Emilio del Rosal, Miguel Cuéllar
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- Session: Robotics I June, 23. 11:30–13:30 Room: C
“**Bio-inspired computation in cooperative multi-robot systems**”
Organizer & Chair: Javier de Lope
Co-Chair: Manuel Graña and Richard Duro

- “Learning to coordinate multi-robot competitive systems by stimuli adaptation”
José Antonio Martín H., Javier de Lope, Dario Maravall
- “A behavior based architecture with auction-based task assignment for multi-robot industrial applicat”
Paula Garcia, Pilar Caamaño, Francisco Bellas, Richard Duro
- “On the control of a multi-robot system for the manipulation of an elastic hose”
Zelmar Echevoyen, Alicia d’Anjou, Manuel Graña
- “An Improved Evolutionary Approach for Egomotion Estimation with a 3D TOF Camera”
Ivan Villaverde, Manuel Graña
- “A frame for an urban traffic control architecture”
Teresa de Pedro, Ricardo Garcia, Carlos González, Javier Alonso, Enrique Onieva, Vicente Milanés, Joshué Pérez
- “Partial center of area method used for reactive autonomous robot navigation”
Jose Ramon Alvarez-Sanchez, Felix de la Paz Lopez, Jose Manuel Cuadra Troncoso, Jose Ignacio Rosado Sanchez

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- Session: Vision I June, 23. 11:30–13:30 Room: D
“**Biomedical and industrial image understanding applications**”
Organizer & Chair: Jorge Larrey-Ruiz
Co-Chair: Rafael Verdú-Monedero

- “Measurements over the Aquiles Tendon through Ecographic Images Processing”
Consuelo Bastida-Jumilla, Juan Morales Sanchez, Rafael Verdú-Monedero, Jorge Larrey-Ruiz, Jose Luis Sancho-Gomez
- “A new approach in metal artifact reduction for CT 3D reconstruction”
Valery Naranjo, Roberto Lloréns, Patricia Paniagua, Mariano Alcañiz, Salvador Albalat
- “Genetic Approaches for the Automatic Division of Topological Active Volumes”
Jorge Novo Buján, Noelia Barreira, Manuel Penedo, Jose Santos Reyes
- “Object Discrimination By Infrared Image Processing”
Ramon Miralles-Ricos, Ignacio Bosch-Roig, Soledad Gomez-Garcia, Raquel Molina-Minguez
- “Validation of fuzzy connectedness segmentation for jaw tissues”
Roberto Lloréns, Valery Naranjo, Miriam Clemente, Mariano Alcañiz, Albalat Salvador
- “Texture Classification of the Entire Brodatz Database through an Orientational-Invariant Neural Arch”
Francisco J. Díaz-Pernas, Míriam Antón-Rodríguez, J. Fernando Díez-Higuera, Mario Martínez-Zarzuela, David González-Ortega, Daniel Boto-Giralda

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- Session: Plenary II June, 24. 09:00–10:00 Room: A
“**ANLAGIS: Adaptive Neuron-like Network based on Learning Automata Theory and Granular Inference ...**”
Dario Maravall, Javier de Lope
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- Session: Plenary III June, 24. 10:00–11:00 Room: A
“**Bayes, Brains and Machine Learning**”
Tom Heskes
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- Session: **Computational Neuroscience** June, 24. 11:30–13:30 Room: A
Chair: José Manuel Ferrández
Co-Chair: Andreas Schierwagen

- “Analysis of Retinal Ganglion Cells Population Responses using Information Theory and Artificial Neur”
Jose Ferrandez, María Paula Bonomini, Eduardo Fernandez, Joaquin Rueda
 - “A network of coupled pyramidal neurons behaves as a coincidence detector”
Santi Chillemi, Michele Barbi, Angelo Di Garbo
 - “Neuron-less neural-like networks with exponential association capacity at tabula rasa ”
Demian Battaglia
 - “Brain complexity: analysis, models and limits of understanding”
Andreas Schierwagen
 - “Activity Modulation in Human Neuroblastoma Cultured Cells: Towards a Biological Neuroprocessor”
Jose Ferrandez, Markus Bongard, Victor Lorente, Jose Manuel Ferrandez, Villa Rosa, Eduardo Fernandez
 - “Solving the Independent Set Problem by Using Tissue-like P Systems with Cell Division”
Miguel A. Gutiérrez-Naranjo, Daniel Díaz-Pernil, Mario J. Perez Jimenez, Agustín Riscos-Núñez
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- Session: **Evolutionary** June, 24. 11:30–13:30 Room: B
Chair: Francisco de Asis Fernández
Co-Chair: Ana María Volker Fischer

- “How to do Recombination in Evolution Strategies: An Empirical Study”
Juan Chen, Michael Emmerich, Rui Li, Joost N. Kok, Thomas Baeck
 - “Serial Evolution”
Volker Fischer, Ana Maria Tomé, Elmar W. Lang
 - “A Sensitivity Clustering Method for Hybrid Evolutionary Algorithms”
Francisco de Asís Fernández Navarro, Pedro Antonio Gutierrez, Cesar Hervas Martinez, Juan Carlos Fernández
 - “Controlling Particle Trajectories in a Multi-Swarm Approach for Dynamic Optimization Problems”
Pavel Novoa, David Pelta, Carlos Cruz, Ignacio Garcia del Amo
 - “Clustering Ensembles Using Ants Algorithm”
Javad Azimi, Paul Cull, Xiaoli Fern
 - “Fuzzy Classification Of Mortality By Infection Of Severe Burnt Patients Using Multiobjective Evoluti”
F. Jimenez, G. Sanchez, Jose M. Juarez, J. M. Alcaráz, J. F. Sánchez
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- Session: Apps. Expert Systems I June, 24. 11:30–13:30 Room: C
“**New perspectives of application of expert systems I**”
Organizer & Chair: María Jesús Taboada iglesias
Co-Chair: Rafael Martínez Tomás
 - “Knowledge and event-based system for video-surveillance tasks”
Angel Rivas Casado, Rafael Martinez Tomas
 - “Computational Agents to Model Knowledge - Theory, and Practice in Visual Surveillance”
Jose Mira, Ana E. Delgado, Antonio Fernandez-Caballero, Jose M. Gascueña, Maria T. Lopez
 - “ARDIS: Knowledge-based Dynamic Architecture for Real-Time Surface Visual Inspection”
David Martin Gomez, Mariano Rincon Zamorano, María Carmen García-Alegre Sánchez, Domingo Guinea Díaz
 - “KBS in Context Aware Applications: Commercial Tools”
Nayat Sánchez-Pi, Javier Carbó, Jose Manuel Molina Lopez
 - “A study of applying knowledge modelling to evidence-based guidelines”
Maria Taboada, Maria Meizoso, Diego Martínez, Serafín Tellado
 - “Knowledge Based Information Retrieval With An Adaptive Hypermedia System”
Francisca Grimón Mejias, Josep Maria Monguet, Jordi Ojeda
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- Session: Vision II June, 24. 11:30–13:30 Room: D
“**Bio-inspired computer vision applications**”
Organizer & Chair: Mariano Rincón Zamorano
Co-Chair: Enrique J. Carmona Suárez
 - “A block-based human model for visual surveillance”
Encarnación Folgado Zúñiga, Mariano Rincon Zamorano, Margarita Bachiller Mayoral, Enrique J. Carmona Suarez
 - “Image Equilibrium: A Global Image Property For Human-Centered Image Analysis”
Óscar Sánchez, Mariano Rincon Zamorano
 - “Vision-Based Text Segmentation System for Generic Display Units”
Jose Carlos Castillo, Maria T. Lopez, Antonio Fernandez-Caballero
 - “Blind Navigation along a Sinuous Path by Means of the See ColOr Interface”
Guido Bologna, Benoit Deville, Thierry Pun
 - “Access control to security areas based on facial classification”
Aitor Moreno Fdz. de Leceta, Mariano Rincon Zamorano
 - “Classifying a new descriptor based on Marr’s visual theory”
Jose Manuel Perez-Lorenzo, Sebastian Garcia Galan, Antonio Bandera, Ricardo Vazquez-Martin, Rebeca Marfil
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- Session: Plenary IV June, 25. 09:00–10:00 Room: A
“**Non-Invasive Brain-Computer Interaction**”
Jose del R. Millan
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- Session: Plenary V June, 25. 10:00–11:00 Room: A
“**Neural Prosthetic interfaces with the central nervous system: Current status and future prospects**”
Eduardo Fernandez
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- Session: Robotics II June, 25. 11:30–13:30 Room: A
“**Robotics and Neuroscience**”
Organizer & Chair: Eris Chinellato
Co-Chair: Emilia Barakova and Angel P. del Pobil

- “Eye-Hand Coordination for Reaching in Dorsal Stream Area V6A: Computational Lessons”
Eris Chinellato, Beata J. Grzyb, Nicoletta Marzocchi, Annalisa Bosco, Patrizia Fattori, Angel del Pobil
 - “Toward an Integrated Visuomotor Representation of the Peripersonal Space”
Eris Chinellato, Beata J. Grzyb, Patrizia Fattori, Angel del Pobil
 - “Evidence for peak-shaped gaze fields in area V6A: implications for sensorimotor transformations...”
Rossella Breveglieri, Annalisa Bosco, Andrea Canessa, Patrizia Fattori, Silvio P. Sabatini
 - “Segmenting Humans from Mobile Thermal Infrared Imagery”
Jose Carlos Castillo, Juan Serrano-Cuerda, Antonio Fernandez-Caballero, Maria T. Lopez
 - “My Sparring Partner is a Humanoid Robot –A parallel framework for improving social skills ”
Tino Lourens, Emilia I. Barakova
 - “Brain-Robot Interface for Controlling a Remote Robot Arm”
Eduardo Iáñez, M. Clara Furió, José M. Azorín, José Alejandro Huizzi, Eduardo Fernandez
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- Session: **Bioinspired Applications II** June, 25. 11:30–13:30 Room: B
Chair: Guido Sciacicco
Co-Chair: Pedro Gómez-Vilda

- “Quality Checking of Medical Guidelines using Interval Temporal Logics: A Case Study”
Guido Sciacicco, Jose M. Juarez, Manuel Campos
 - “Results of an Adaboost approach on Alzheimer’s Disease detection on MRI”
Alexandre Savio, Maite García-Sebastián, Manuel Graña, Jorge Villanúa
 - “Neurobiological significance of automatic segmentation: application to the early diagnosis of alzhei”
Ricardo Insausti, Mariano Rincon Zamorano, César González-Moreno, Emilio Artacho-Pérula, Amparo Díez-Peña, Tomás García-Saiz
 - “A Braitenberg Lizard: Continuous Phonotaxis with a Lizard Ear Model”
Danish Shaikh, John Hallam, Jakob Christensen-Dalsgaard, Lei Zhang
 - “Determining Sound Source Orientation from Source Directivity and Multi-Microphone Recordings”
Francesco Guarato, John Hallam
 - “A Method to Minimize Distributed PSO Algorithm Execution Time in Grid Computer Environment”
Fernando Parra Rodriguez, Sebastian Garcia Galan, Antonio J. Yuste Delgado, Rocio Perez Prado, J. Enrique Muñoz Exposito, Sebastian Bruque Camara
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- Session: Knowledge Modeling June, 25. 11:30–13:30 Room: C
“The role of knowledge based system on supporting elderly care at home”
Organizer & Chair: Juan Antonio Botía Blaya
Co-Chair: José Tomás Palma Méndez
 - “Ontology Based Approach to the Detection of Domestic Problems for Independent Senior People”
Juan Botía, José Palma, Ana Villa, David Pérez, Emilio Iborra
 - “A Wireless Sensor Network for Assisted Living at Home of Elderly People”
Francisco Fernández, Juan Zapata
 - “An Ambient Assisted Living system for Telemedicine with detection of symptoms”
Antonio Jara, Miguel A. Zamora-Izquierdo, Antonio F. Gómez-Skarmeta
 - “Applying context-aware computing in dependent environments”
Juan Agustín Fraile Nieto, Javier Bajo Pérez, Juan Manuel Corchado
 - “A Smart Solution for Elders in Ambient Assisted Living”
Nayat Sánchez-Pi, Jose Manuel Molina Lopez
 - “Convergence of Emergent Technologies for the Digital Home”
Celia Gutierrez, Sara Perez
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- Session: **Posters** June, 25. 17:00–18:00 Room: P
Chair: José Manuel Ferrández
Co-Chair: Roberto Iglesias
 - “Time estimation in injection molding production for automotive industry based on SVR and RBF”
Miguel Reboreda Tourón, Manuel Fernández-Delgado, Senén Barro Ameneiro
 - “Classification of Welding Defects in Radiographic Images Using an ANN with Modified Performance Functi”
Juan Zapata
 - “Analysis of Brain SPECT Images for the diagnosis of Alzheimer using first and second order moments”
Diego Salas-Gonzalez, Juan M. Górriz, Javier Ramírez, Miriam López, Ignacio Álvarez, Fermín Segovia, Carlos G. Puntonet
 - “Prediction and Inheritance of Phenotypes”
Antonio Bahamonde, Jaime Alonso, Juan Jose del Coz, Jorge Diez, Jose Ramon Quevedo, Oscar Luaces
 - “On cumulative entropies and lifetime estimations”
Antonio Di Crescenzo, Maria Longobardi
 - “Functional Brain Image Classification Techniques for Early Alzheimer Disease Diagnosis”
Javier Ramírez, Rosa Chavez, Juan M. Górriz, Ignacio Álvarez, Miriam López, Diego Salas-Gonzalez, Fermín Segovia
 - “Genetic Algorithm combined with Tabu Search for the Job Shop Scheduling Problem with Setup Times”
Miguel A. González, Camino R. Vela, Ramiro Varela
 - “Support Vector Machines and Neural Networks for the Alzheimer’s Disease Diagnosis Using PCA”
Miriam López, Javier Ramírez, Juan M. Górriz, Ignacio Álvarez, Diego Salas-Gonzalez, Fermín Segovia, Manuel Gómez-Río
 - “A memory-based particle filter for visual tracking through occlusions”
Antonio Montemayor, Juan J Pantrigo, Javier Hernández
 - “Comparing Feature Point Tracking with Dense Flow Tracking for Facial Expression Recognition”
José Ruiz, Ana Belen Moreno Diaz, Juan J Pantrigo, Angel Sanchez Calle
 - “Assesment of a Speaker Recognition System based on an Auditory Model and Neural Nets”
Ernesto Martínez-Rams, Vicente Garceran-Hernandez
 - “Denoising of Radiotherapy Portal Images using Wavelets”
Antonio González-López, Juan Morales Sanchez, Consuelo Bastida-Jumilla, Francisco López-Sánchez, Bonifacio Tobarra-González

- “Breast Cancer Classification applying Artificial Metaplasticity”
Alexis Marcano-Cedeño, Diego Andina, Fulgencio S. Buendía-Buendía
 - “Detection of Microcalcifications using Coordinate Logic Filters and Artificial Neural Networks”
Joel Quintanilla-Domínguez, María Guadalupe Cortina-Januchs, José Miguel Barrón-Adame, Antonio Vega-Corona, Fulgencio S. Buendía-Buendía, Diego Andina
 - “Characterisation of Multiple Patterns of Activity in Networks of Relaxation Oscillators with Inhibit”
Tiaza Bem, John Hallam
 - “SDSM based SdFasArt for Enhanced Maneuver Prediction”
Ana Toledo, Rafael Toledo-Moreo, Jose Manuel Cano-Izquierdo
 - “Scaling power laws in the restoration of perception with increasing stimulus in deficitary natural..”
Isabel Gonzalo, Miguel A. Porrás
 - “A Genetic Algorithm for the Open Shop Problem with Uncertain Durations”
Juan Jose Palacios, Jorge Puente, Camino R. Vela, Ines Gonzalez-Rodriguez
 - “Analytical Models for Transient Responses in the Retina”
Gabriel de Blasio, Moreno Diaz Arminda, Roberto Moreno-Díaz
 - “Classification of SPECT images using clustering techniques revisited”
Juan M. Górriz, Javier Ramírez
 - “Using Reconfigurable Supercomputers and C-to-hardware Synthesis for CNN Emulation”
Jose Javier Martinez-Alvarez, Garrigos Guerrero Francisco J., Fco. Javier Toledo Moreo, Jose Manuel Ferrandez
 - “Mathematical foundations of the center of area method for robot navigation”
Felix de la Paz Lopez, Jose Ramon Alvarez-Sanchez, Jose Ignacio Rosado Sanchez, Jose Manuel Cuadra Troncoso
 - “Reveal the Collaboration in a Open Learning ”
Antonio Rodríguez Anaya, Jesús González Boticario
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• Session: **Bioinspired Applications III**

June, 26. 09:00–11:00 Room: A

Chair: Pedro Salcedo Lagos

Co-Chair: José Antonio Martín Hernández

- “Performance of high school students in learning math. A neural network approach.”
Ricardo Contreras, Pedro Salcedo Lagos, María Punninghoff
 - “A Strategy for Evolutionary Spanning Tree Construction within Constrained Graphs with Application to”
Santiago Vazquez-Rodriguez, Richard Duro
 - “An Evolutionary Approach for Correcting Random Amplified Polymorphism DNA Images”
María Punninghoff, Ricardo Contreras, Luis Rueda
 - “The kNN-TD Reinforcement Learning Algorithm”
José Antonio Martín H., Javier de Lope, Dario Maravall
 - “CIE-9-MC Code Classification with knn and SVM”
David Lojo, David Losada, Barreiro Alvaro
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• Session: Apps. Expert Systems II

June, 26. 09:00–11:00 Room: B

“New Perspectives of application of Expert Systems II”

Organizer & Chair: Rafael Martínez Tomás

Co-Chair: Luis Criado

- “Rule Evolving System for Knee Lesion Prognosis from Medical Isokinetic Curves”
Jorge Couchet, José María Font, Daniel Manrique
 - “An Architecture Proposal for Adaptive Neuropsychological Assessment”
Guil-Reyes Francisco, Maria M. Antequera, M. Teresa Daza, Jose M. Juarez, Ginesa López-Crespo
 - “SONAR: A Semantically Empowered Financial Search Engine.”
Juan Miguel Gómez, Francisco Garcia-Sanchez, Rafael Valencia-Garcia, Ioan Toma, Carlos García-Moreno
 - “The problem of constructing general-purpose semantic search engines”
Luis Criado Fernández, Rafael Martinez Tomas
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• Session: Vision III

June, 26. 09:00–11:00 Room: C

“Reasoning and cooperating in automatic perceptual systems”

Organizer & Chair: Miguel Angel Patricio

Co-Chair: Luis Usero and Angel Arroyo

- “Reasoning on the Evaluation of Wildfires Risk using the Receiver Operating Characteristic curve and ”
Luis Usero, M. Xose Rodriguez-Lopez
 - “Optimised Particle Filter Approaches to Object Tracking in Video Sequences”
Artur Loza, Fanglin Wang, Miguel Angel Patricio Guisado, Jesus Garcia Herrero, Jose Manuel Molina Lopez
 - “Towards interoperability in tracking systems: an ontology-based approach”
Juan Gomez-Romero, Miguel Angel Patricio Guisado, Jesus Garcia Herrero, Jose Manuel Molina Lopez
 - “Multimodal agents in Second Life and the new agents of virtual 3D environments”
Angel Arroyo, Francisco Serradilla, Oscar Calvo
 - “Application of Artificial Neural Networks to Complex Dielectric Constant Estimation from Free-Space ”
Antonio Jurado, David Escot, David Poyatos, Ignacio Montiel
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