



## [WCCI 2016 Special Session on Machine Learning Methods applied to Vision and Robotics \(MLMVR\)](#)

Aims:

Over the last decades there has been an increasing interest in using machine learning methods combined with computer vision techniques to create autonomous systems that solve vision problems in different fields. This special session is designed to serve researchers and developers to publish original, innovative and state-of-the art algorithms and architectures for real time applications in the areas of computer vision, image processing, biometrics, virtual and augmented reality, neural networks, intelligent interfaces and biomimetic object-vision recognition.

This special session provides a platform for academics, developers, and industry-related researchers belonging to the vast communities of \*Neural Networks\*, \*Computational Intelligence\*, \*Machine Learning\*, \*Biometrics\*, \*Vision systems\*, and \*Robotics\*, to discuss, share experience and explore traditional and new areas of the computer vision and machine learning combined to solve a range of problems. The objective of the workshop is to integrate the growing international community of researchers working on the application of Machine Learning Methods in Vision and Robotics to a fruitful discussion on the evolution and the benefits of this technology to the society.

The Special Session topics can be identified by, but are not limited to, the following subjects:

- Artificial Vision
- Video tracking
- 3D Scene reconstruction
- 3D Tracking in Virtual Reality Environments
- 3D Volume visualization
- Computational Intelligence
- Machine Learning
- Intelligent Interfaces (User-friendly Man Machine Interface)
- Self-adaptation and self-organisational systems
- Multi-camera and RGB-D camera systems
- Robust computer vision algorithms (operation under variable conditions, object tracking, behaviour analysis and learning, scene segmentation)
- Multi-modal Human Pose Recovery and Behavior Analysis
- Gesture and posture analysis and recognition
- Biometric Identification and Recognition
- Extraction of Biometric Features (fingerprint, iris, face, voice, palm, gait)
- Surveillance systems

Robotics vision  
Hardware implementation and algorithms acceleration (GPUs, FPGA,s,...)

**Important dates:**

Paper Submission Deadline  
January 15, 2016

**Paper acceptance notification date**

March 15, 2016

**Final paper submission deadline**

April 15, 2016

**Conference**

July 25-29, 2016

**Submission Guidelines:**

Please follow the regular submission guidelines of WCCI 2016. Please notify the chairs of your submission by sending an email to: [jgarcia@dtic.ua.es](mailto:jgarcia@dtic.ua.es).

**Chairs:**

José García-Rodríguez -University of Alicante (Spain) ([jgarcia@dtic.ua.es](mailto:jgarcia@dtic.ua.es))  
Sergio Escalera (Spain) ([sergio.escalera.guerrero@gmail.com](mailto:sergio.escalera.guerrero@gmail.com))  
Alexandra Psarrou – University of Westminster (UK) ([psarroa@wmin.ac.uk](mailto:psarroa@wmin.ac.uk))  
Isabelle Guyon - Coplinet (USA) ([guyon@clopinnet.com](mailto:guyon@clopinnet.com))  
Andrew Lewis – Griffith University (Australia) ([a.lewis@griffith.edu.au](mailto:a.lewis@griffith.edu.au))

**Tentative program committee:**

Lourdes de Agapito - Queen Mary University of London (UK)  
Anastassia Angelopoulou – University of Westminster (UK)  
Antonis Argyros – FORTH (Greece) ([argyros@ics.forth.gr](mailto:argyros@ics.forth.gr))  
Miguel Cazorla - University of Alicante (Spain)  
Enrique Dominguez - University of Malaga (Spain)  
Richard Duro – University of Coruña (Spain)  
Robert Fisher – University of Edinburgh (UK)  
Manuel Graña - Basque Country University (Spain)  
Magnus Johnsson- Lund University (Sweden)  
Markos Mentzelopoulos – University of Westminster (UK)  
Eduardo Nebot – Australian Centre for Field Robotics (Australia)  
Asim Roy (Arizona State University, USA)  
Peter Roth - TU Graz (Austria)  
Sergio Velastin - Kingston University (UK)

Contact:

Email: [jgarcia@dtic.ua.es](mailto:jgarcia@dtic.ua.es)

Main Conference webpage: <http://www.wcci2016.org>

Special session webpage: <http://www.dtic.ua.es/~jgarcia/IJCNN2016/>

## Biographies

**Jose Garcia-Rodriguez** received his Ph.D. degree, with specialization in Computer Vision and Neural Networks, from the University of Alicante (Spain). He is currently Associate Professor at the Department of Computer Technology of the University of Alicante. His research areas of interest include: computer vision, computational intelligence, machine learning, pattern recognition, robotics, man-machine interfaces, ambient intelligence, computational chemistry, and parallel and multicore architectures. He has authored +100 publications in journals and top conferences and revised papers for several journals like Journal of Machine Learning Research, Computational intelligence, Neurocomputing, Neural Networks, Applied Softcomputing, Image Vision and Computing, Journal of Computer Mathematics, IET on Image Processing, SPIE Optical Engineering and many others, chairing sessions in the last four editions of IJCNN and IWANN and participating in program committees of several conferences including IJCNN, ICRA, ICANN, IWANN, KES, ICDP and many others.

**Sergio Escalera** obtained the P.h.D. degree on Multi-class visual categorization systems at Computer Vision Center, UAB. He obtained the 2008 best Thesis award on Computer Science at Universitat Autònoma de Barcelona. He leads the Human Pose Recovery and Behavior Analysis Group at UB, CVC, and the Barcelona Graduate School of Mathematics. He is an associate professor at the Department of Applied Mathematics and Analysis, Universitat de Barcelona. He is a partial time professor at Universitat Oberta de Catalunya. He is a member of the Visual and Computational Learning consolidated research group of Catalonia. He is also a member of the Computer Vision Center at Campus UAB. He is Editor-in-Chief of American Journal of Intelligent Systems and editorial board member of more than 5 international journals. He is advisor and director of ChaLearn Challenges in Machine Learning. He is co-founder of PhysicalTech company. He is an active member of the Cluster de Salut Mental de Catalunya. He is also member of the AERFAI Spanish Association on Pattern Recognition, ACIA Catalan Association of Artificial Intelligence, and he is vice-chair of IAPR TC-12: Multimedia and visual information systems. He has different patents and registered models. He has published more than 150 research papers and organized scientific events, including CCIA2004, CCIA2014, ICCV2011, and workshops at ICCV2011, ICMI2013, ECCV2014, CVPR2015, ICCV2015. He has been guest editor at JMLR, IJCV, and TPAMI. His research interests include, between others, statistical pattern recognition, visual object recognition, and HCI systems, with special interest in human pose recovery and behavior analysis from multi-modal data.

**Alexandra Psarrou** is Head of the Computer Science and Software Engineering Department at the University of Westminster. Psarrou received her BSc in Computer Science (1987) and MSc in Advanced Computer Science (1988) from Queen Mary University of London. Following her graduation Psarrou worked as a Knowledge Engineer on an AI assisted system (AICQS) for the support of UNISYS customer services (1988-1990) and as a Research Fellow on an SERC medical image interpretation project for the dynamic modelling of cancerous cells (1990-

1992). The latter project initiated Psarrou's interest in motion-based recognition and the analysis of visual behaviour. Psarrou received her PhD from Queen Mary, London in 1996 with a thesis on the use of artificial neural networks for motion-based recognition. Since 1996 Psarrou has been working on the modelling of temporal trajectories for face, gesture and gait recognition, modelling and tracking of non-rigid objects using growing neural networks and content-based retrieval from image and video databases. Psarrou joined the University of Westminster as Lecturer in 1993. She was appointed Reader and research centre director in 1999 and Head of Department in 2003. Psarrou established the Computer Vision Laboratory at the University of Westminster and has published over 60 papers in computer vision and neural networks and a book on "Dynamic Vision: From Images to Face Recognition" with Shaogang Gong and Stephen McKenna.

**Isabelle Guyon** is an Independent Consultant, and specialized in statistical data analysis, pattern recognition, and machine learning. Her areas of expertise include computer vision and bioinformatics. Her recent interest is in the applications of machine learning to the discovery of causal relationships. She pioneered applications of neural networks to pen computer interfaces, and co-invented support vector machines (SVM), a machine learning technique, which has become a textbook method. She is also the primary inventor of SVM-RFE, a variable selection technique based on SVM. She organized many challenges in machine learning over the past few. She is Action Editor of the Journal of Machine Learning Research, and an Editor of the Challenges in Machine Learning book series of Microtome.

**Andrew Lewis** is a Senior Research Specialist in eResearch Services and an Adjunct Senior Lecturer in ICT at Griffith University. He received his BE in Computer Engineering from the University of Newcastle, Australia, and his PhD in Computer Science from Griffith University, Australia. Prior to his employment with the University, he worked in industrial applied research with BHP Billiton. His research interests include: parallel optimisation algorithms for large numerical simulations, including gradient descent, direct search methods, evolutionary programming, particle swarm and ant colony systems, multi-objective optimisation techniques for engineering design, parallel, distributed and grid computing methods, and techniques and applications of advanced visualisation. He has numerous publications across this range of topics, particularly in the area of optimisation algorithms and applications.