

Postdoctoral Fellowship under the Marie S. Curie Actions Cofund project “Opening Sphere UAB-CEI to Postdoctoral Fellows (P-Sphere)” Gran Agreement 665919.

Department or Institution involved



Human Pose Recovery and Behavior Analysis

Topic description

Human Action/Gesture recognition is a challenging area of research that deals with the problem of recognizing people in images, detecting and describing body parts, inferring their spatial configuration, and performing action/gesture recognition from still images or image sequences, also including multi-modal data. Because of huge space of human configurations, body pose recovery is a difficult problem that involves dealing with several distortions: illumination changes, partial occlusions, changes in the point of view, rigid and elastic deformations, or high inter and intra-class variability, just to mention a few. Even with the high difficulty of the problem, modern Computer Vision techniques and new tendencies deserve further attention, and promising results are expected in the next years. Moreover, several subareas have been recently defined, such as Affective Computing, Social Signal Processing, Human Behavior Analysis, or Social Robotics. The effort involved in this area of research will be compensated by its potential applications: TV production, home entertainment (multimedia content analysis), education purposes, sociology research, surveillance and security, improved quality live by means of monitoring or automatic artificial assistance, etc.

Project supervisor & hosting group

Prof. Sergio Escalera will supervise the Fellow.

Sergio Escalera obtained the Ph.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 has been visiting professor at TU Delft and Aalborg Universities. 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 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, ICM12013, ECCV2014, CVPR2015, ICCV2015. He has been guest editor at JMLR, TPAMI, and IJCV. 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.

The hupba group has received several grants and projects, including the following participation in european projects: Herrmes 2007-2010 // WIDER – Green Growing of SMEs: Innovation and Development in the Energy Sector in the Mediterranean Area 2015 // TeSLA 2016-2018 // Disruptive OnLine Stylist Engine by Value Agents 2015 // SEE.4C – SpatiotEmporal ForEcasting: Coopetition to meet Current Cross-modal Challenges 2016-2017 // Cost Action: Integrating Vision & Language.

Planned Secondments

The Fellow will realize stays in the group to push the research in the topics of Human Pose Recovery and Behavior Analysis from multi-modal input data. In particular, we want the fellow to perform advances in the following topics:

- Human-based and deep learning-based feature extraction for human analysis
- Compositional models analysis for human pose recovery and scene understanding
- Temporal series and behavior analysis

Candidate's profile

A PhD in Computer Vision and Machine Learning

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