



**RESEARCH ACTIVITIES
2011**

INDEX

1. Personnel (98).....	4
2. Reserach Agreements (1)	4
3. Competitive Projects (29)	4
3.1. New projects started on 2011 (8).....	4
3.2. Renewals (18)	5
3.3. Grants (5)	8
4. PhD Thesis (7).....	9
5. Master thesis and Master projects(12)	9
6. Research stays abroad (15).....	10
7. Research stays at CVC (13).....	10
8. Courses and seminars by CVC personnel (3)	11
9. Courses at CVC (3)	11
10. Seminars at CVC (30).....	12
11. Patents (3).....	14
12. Publications (149)	14
12.1. Books (7)	14
12.2. Book Chapters (8)	15
12.3. Journals with Impact Factor (45).....	15
12.4. Journals (3)	19
12.5. International Conferences (80)	19
12.6. National Conferences (6).....	26
13. Other Publications (49).....	26
13.1. CVC International Workshop (42)	26
13.2. Technical Reports (5).....	29
14. Other Research Activities (6)	30
15. Awards (4)	30
16. Graph.....	31

0. Summary

PERSONNEL	98
Post Doc Researchers	43
PhD students	55
RESEARCH AGREEMENTS →10.000,00€	1
COMPETITIVE PROJECTS →2.233.835,00 €	29
New projects started on 2011 → 2.014.047,00 €	8
Renewals	18
Grants →219.788,00 €	5
DOCTORAL THESES	7
MASTER THESES AND MASTER PROJECTS	12
RESEARCH STAYS ABROAD	15
RESEARCH STAYS AT CVC	13
COURSES AND SEMINARS GIVEN BY CVC PERSONNEL	3
COURSES AT CVC	3
SEMINARS AT CVC	30
PATENTS	3
PUBLICATIONS	144
Books	2
Journals	3
Journals with Impact Factor	45
Book Chapters	8
International Conferences	80
National Conferences	6
OTHER PUBLICATIONS	44
CVC International Workshop	42
Technical Reports	2
OTHER RESEARCH ACTIVITIES	6
AWARDS	4
GRAPH	

1. Personnel (98)

As of 31 December 2011, CVC personnel who perform research activities are composed by:

POST DOC RESEARCHERS (43):

- Permanent personnel contracted by the universities (19): UAB, UB, UPC, URV and UOC.
- Post doc contracts (24): including I3 and Ramon y Cajal, Juan de la Cierva, Beatriu de Pinós researchers, as well as those hired by the CVC.

PHD. STUDENTS (55): It includes any PhD student with a scholarship (CVC, UAB, FPI or FI) or a contract as an assistant at the UAB, UB, or UOC, as well as the master students.

2. Reserach Agreements (1)

TITLE: Xerox sponsored research in visual aesthetics
FUNDING ENTITY: XEROX RESEARCH CENTER EUROPE
DURATION: July 2011- July 2012
TOTAL AWARDED: 10.000,00 €
RESEARCHER: M. Vanrell

3. Competitive Projects (29)

3.1. New projects started on 2011 (8)

TITLE: SiMeVé Sistema Multiespectral de Visió Estèreo
REFERENCE: TIN2011-25606
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 2011-2014
TOTAL AWARDED: 49.368,00 €
RESEARCHER: A. Sappa

TITLE: ViDAS-UrbE - Sistemas de Visión por Computador para la Asistencia a la Conducción en Entornos Urbanos.
REFERENCE: TRA2011-29454-C03-01
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 2011-2014
TOTAL AWARDED: 87.120,00 €
RESEARCHER: A. López

TITLE: FireWatcher - Monitorización de Incendios Mediante la Inspección Aérea del Terreno.
REFERENCE: TIN2011-29494-C03-02
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 2011-2014
TOTAL AWARDED: 32.186,00 €
RESEARCHER: D. Ponsa

TITLE: TnC - Text en la Ciutat - Comprensió Centrada en Humans de Text en Escenes

REFERENCE: TIN2011-24631

FUNDING ENTITY: Ministerio de Ciencia e Innovación

DURATION: 2011-2014

TOTAL AWARDED: 78.045,00 €

RESEARCHER: D. Karatzas

TITLE: CVC - PLAN DE TRANSFERENCIA DE TECNOLOGÍA 2011

REFERENCE: OTR-2011-0292

FUNDING ENTITY: Ministerio de Ciencia e Innovación

DURATION: 2011-2014

TOTAL AWARDED: 95.000,00 €

RESEARCHER: J. Lladós

TITLE: Ajuts a la innovació TECNIO

REFERENCE: TECCIT11-1-0043

FUNDING ENTITY: AAC1Ó

DURATION: 01/01/2011 – 31/12/2011

TOTAL AWARDED: 28.595,00 €

RESEARCHER: D. Rotger

TITLE: C21: Centre de competència en interpretació ubiqua d'imatges d'alfabets visuals.

REFERENCE: 2010-CONE3-00029

FUNDING ENTITY: AGAUR

DURATION: 04/10/2011 – 03/10/2013

TOTAL AWARDED: 14.570,00 €

RESEARCHER: A. Fornés

TITLE: Robot Companions for Citizens

REFERENCE: FP7-ICT-2011-FET-F # 284951

FUNDING ENTITY: UE

DURATION: 01/05/2011 – 30/04/2012

TOTAL AWARDED: 1.629.163 (total amount of the project)

RESEARCHER: Bogdan Raducanu (IP CVC)

3.2. Renewals (18)

TITLE: Extracción de conocimiento de imágenes de documentos con contenidos heterogéneos.

REFERENCE: TIN-2009-14633-C03-03

FUNDING ENTITY: Ministerio de Ciencia e Innovación

DURATION: 2010-2012

TOTAL AWARDED: 195.400,00 €

RESEARCHER: J. Lladós

TITLE: Tècniques de aprendizaje para sistemas de visión a gran escala: aplicaciones al reconocimiento de objetos.

REFERENCE: TIN2009-14404-C02-01

FUNDING ENTITY: Ministerio de Ciencia e Innovación

DURATION: 2010-2012

TOTAL AWARDED: 136.600,00 €

RESEARCHER: J. Vitrià

TITLE: Técnicas de aprendizaje para sistemas de visión a gran escala: aplicaciones al análisis (COORDINADA con la de J.Vitrià)
REFERENCE: TIN2009-14404-C02-02
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 2010-2012
TOTAL AWARDED: 112.200,00 €
RESEARCHER: P. Radeva

TITLE: Comprensión holística de imágenes en color: combinación de percepción "bottom-up" y semántica "top-D"
REFERENCE: TIN2009-14173
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 2010-2012
TOTAL AWARDED: 65.000,00 €
RESEARCHER: J. Van de Weijer

TITLE: Detección en tiempo real de cáncer de colón para la evaluación de calidad de las colonoscopias.
REFERENCE: TIN2009-10435
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 2010-2012
TOTAL AWARDED: 68.100,00 €
RESEARCHER: F. Vilariño

TITLE: Razonamiento epistemológico para la interpretación del contexto y de eventos de seguridad para la vigilancia.
REFERENCE: TIN2009-14501-C02-01
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 2010-2012
TOTAL AWARDED: 190.100,00 €
RESEARCHER: X. Roca

TITLE: Razonamiento epistemológico para la interpretación del contexto y de eventos de seguridad para la vigilancia. (COORDINADA con X.Roca)
REFERENCE: TIN2009-14501-C02-02
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 2010-2012
TOTAL AWARDED: 83.400,00 €
RESEARCHER: J. González

TITLE: Miocardia: Definición de un modelo integrado de la funcionalidad y anatomía muscular del ventrículo.
REFERENCE: TIN2009-13618
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 2010-2012
TOTAL AWARDED: 123.800,00 €
RESEARCHER: D. Gil

TITLE: Convenio de colaboración para la creación de un equipo de investigación en materia de reconocimiento de formas y visión artificial.
REFERENCE: CSD2007-00018
FUNDING ENTITY: Ministerio Educación y Ciencia (CONSOLIDER INGENIO)
DURATION: 01/10/2007 – 30/09/2012
TOTAL AWARDED: 1.252.800,00 €
RESEARCHER: J.J.Villanueva, J.Vitrià

TITLE: Introducción de información de color y mecanismos de atención a modelos Bio-inspirados de Visión por Computador
REFERENCE: TIN-2010-2177-C02-01
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 2010-2013
TOTAL AWARDED: 148.830,00 €
RESEARCHER: M.Vanrell

TITLE: Sistemas de asistencia al conductor basados en la monitorización de la carretera usando Visión por Computador.
REFERENCE: TRA2010-21371-C03-01
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 2010-2011
TOTAL AWARDED: 14.520,00 €
RESEARCHER: A.López

TITLE: X-QPA: a Quantitative X-ray-based intraoperative myocardial Re-perfusion Computer-assisted Analysis / Diagnosis Tool.
REFERENCE: 2010 VALOR 00158
FUNDING ENTITY: Agència de Gestió d'Ajuts Universitaris i de Recerca
DURATION: 2011-2013
TOTAL AWARDED: 76.005,00 €
RESEARCHER: C. Gatta

TITLE: Modelo de arterias coronarias adaptado al paciente y predicción de la formación y crecimiento.
REFERENCE: AIB2010SE-00210
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 2011-2012
TOTAL AWARDED: 8.000,00 €
RESEARCHER: S.Balocco

TITLE: Tratamiento del texto contenido en imágenes digitales técnicas inspiradas en la Percepción Humana.
REFERENCE: TIN2008-04998
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 01/01/2009 – 31/12/2012
TOTAL AWARDED: 50.000,00 €
RESEARCHER: D.Karatzas

TITLE: ViCoMo: Modelado de Contexto Visual
REFERENCE: TSI-020400-2009-133
FUNDING ENTITY: Ministerio de Industria, Turismo y Comercio UE (Itea2)
DURATION: 2009 – 2011
TOTAL AWARDED: 159.955,00 €
RESEARCHER: X. Roca

TITLE: "DocuRead: Componentes avanzadas de reconocimiento de contenidos documentales heterogéneos. Aplicación a mercados de diseño asistido por ordenador y banca" (AVANZA I+D)
REFERENCE: TSI020400-2008-188
FUNDING ENTITY: Ministerio de Industria, Turismo y Comercio
DURATION: 2008-2009
TOTAL AWARDED: 220.000,00 €
RESEARCHER: J. Lladós

TITTLE: Aministrative Document Automate Optimization
REFERENCE: FP7-PEOPLE-2008-IAPP-230653
FUNDING ENTITY: Marie Curie
DURATION: 2009 - 2013
TOTAL AWARDED: 184.261,26 €
RESEARCHER: J. Lladós

TITTLE: 5CofM—Five Centuries of Marriages.
REFERENCE: Project Number 269796
FUNDING ENTITY: Unió Europea
DURATION: 2011-2015
TOTAL AWARDED: 396.800,00 €
RESEARCHER: J.Lladós

3.3. Grants (5)

TITTLE: Ramón y Cajal Grant
REFERENCE: RYC2011-08174
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 2011-2014
TOTAL AWARDED: 183.600,00 €
RESEARCHER: C. Gatta

TITTLE: Beca FI
REFERENCE: 2011 FIB 01022
FUNDING ENTITY: AGAUR
DURATION: 2011 - 2014
TOTAL AWARDED: 14.400,00 €
RESEARCHER: A. Dutta

TITTLE: Beca BE - Reconeixement de text manuscrit dels històrics llibres matrimonials de Barcelona.
REFERENCE: 2010BE10020
FUNDING ENTITY: AGAUR
DURATION: 15/11/2011 – 15/03/2012
TOTAL AWARDED: 8.438,00 €
RESEARCHER: A. Fornés

TITTLE: Beca estancia breve en otro centro de I+D (subprograma FPI-MICINN)
REFERENCE: EEBB-I-12-03949
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 02/04/2012 – 31/07/2012
TOTAL AWARDED: 6.650,00 €
RESEARCHER: P. Márquez

TITTLE: Beca estancia breve en otro centro de I+D (subprograma FPI-MICINN)
REFERENCE: EEBB-I-12-05783
FUNDING ENTITY: Ministerio de Ciencia e Innovación
DURATION: 01/04/2012 – 31/07/2012
TOTAL AWARDED: 6.700,00 €
RESEARCHER: J. Marín

4. PhD Thesis (7)

- **Javier Vázquez**, "*Colour constancy in natural images through colour naming and sensor sharpening*". **CVC-UAB**, February 28, 2011.
- **Jesús Jaime Moreno Escobar**, "*Perceptual Criteria on Image Compression*", **CVC-UAB**, July 1, 2011.
- **Santi Seguí**, "*Contributions to the Diagnosis of Intestinal Motility by Automatic Image Analysis*", **CVC-UB**, July 12, 2011.
- **Ferran Diego**, "*Probabilistic Alignment of Video Sequences recorded by Moving Cameras*", **CVC-UAB**, July 22, 2011.
- **Eduard Vázquez**, "*Unsupervised Image Segmentation Based on Material Reflectance Description and Saliency*", **CVC-UAB**, October 7, 2011.
- **Pierluigi Casale**, "*Approximate Ensemble Methods for Physical Activity Recognition Applications*", **CVC – UB**, November 4, 2011.
- **Fahad Shahbaz Khan**, "*Coloring bag-of-words based image representations*", **CVC - UAB**, December 2, 2011.

5. Master thesis and Master projects(12)

- Jenyu Liu, "*Face Recognition on Riemannian Manifolds*", UAB, July 2011.
- Arturo Bonnin, "*Contributions to Object Detection using Depth Images*", UAB, July 2011.
- **Maria del Camp Davesa**, "*Human action categorization in image sequences*", **CVC-UAB**, September 2011.
- **Carles Sánchez**, "*Tracheal ring detector in bronchoscopy*", **CVC-UAB**, September 2011.
- Luis Ruíz, "*From raw depth images to 3D model representations*", UAB, September 2011
- **Yainuvis Socarrás**, "*Image segmentation for improving pedestrian detection*", **CVC-UAB**, September 2011.
- Roger Gimeno, "*Automatic Analysis of Brain Caudate Nuclei Abnormalities in pediatric ADHD*", UAB, September 2011.
- **Alejandro González**, "*Evaluation of spatiotemporal descriptors for pedestrian detection in video sequences*", **CVC-UAB**, September 2011.
- Ferran Poveda, "*Recent advances in tractographic representation of heart muscular architecture*", UAB, September 2011.
- Ming Yong Yoon "*Joint document recognition and homography estimation for hand-held devices*", UAB, September 2011.
- Lluís Bayo, "*Staff segmentation in music score images using dynamic programming*", UAB, September 2011.
- **Juan Manuel Núñez**, "*Computer vision techniques for characterization of finger joints in X-ray images*", **CVC-UAB**, September 2011.

6. Research stays abroad (15)

POSTDOCTORAL:

- **Dra. Alícia Fornés**, Institute of Computer Science and Applied Mathematics University of Bern, Berna (Switzerland), February-July 2011.
- **Dr. David Gerónimo**, Laboratoire d'Analyse et d'Architecture des Systèmes (LAAS-CNRS), Toulouse (France), February-July 2011.
- **Dra. Aura Hernández Sabaté**, Biomedical Engineering Department, Thorax Centrum (Erasmus MC), Rotterdam (Netherlands), May – July 2011.

PREDOCTORAL:

- **Javier Marín**, Pattern Recognition Group, School of Computer Science, Bangor University, Bangor Gwynedd (United Kingdom), February-July, 2011.
- **David Fernández**, ITESOFT, Aimargues (France), February-March, 2011.
- **Noha Elfiky**, Computer Science Department, Engineering Faculty, University of Amsterdam, Amsterdam (Netherlands), March-June 2011.
- **Wenjuan Gong**, Fraunhofer Institut für Optronik, Systemtechnik und Bildauswertung, Ettlingen (Germany), April – July 2011.
- **Shida Beigpour**, Fridrich Alexander University of Erlangen, Nürnberg (Germany), April – July 2011.
- **Ariel Amato**, Dipartimento di Ingegneria dell'Informazione, Università degli Studi di Modena e Reggio Emilia (Italy), April – July 2011.
- **Murad Al Haj**, the Computer Vision Laboratory, University of Maryland, Maryland (USA), April-August 2011.
- **Jorge Bernal**, Lloyd Institute – Trinity College, Dublin (Irlanda), July – October 2011.
- **Albert Gordo**, XRCE Xerox Research Centre Europe, Meylan (France)
- **Naila Murray**, XRCE Xerox Research Centre Europe, Meylan (France), July 2011 – March 2012.
- **David Vázquez**, Daimler AG, Department of Environment Perception, Ulm (Germany), October 2011 – April 2012.

7. Research stays at CVC (13)

POSTDOCTORAL:

- Dr. Djemel Ziou, Chaire de Recherche du CRSNG, Dept. Informatique, Université de Sherbrooke, Quebec (Canada), January – February 2011.
- Dr. Gustavo Camps-Valls, Image Processing Laboratory (IPL), Universitat de València, January 24, 25, 26 2011.
- Prof. Horst Bunke, Research Group on Computer Vision and Artificial Intelligence IAM, University of Bern, March 2011.
- Dr. Antonio Fernández, Departamento de Diseño en la Ingeniería, Universidad de Vigo, April 8 – May 23 2011

- Dr. Ergina Kavallieratou, Information and Communication Systems Engineering Department, University of the Aegean, Samos (Greece), June 2011.
- Dr. Alejandro Tosselli, Pattern Recognition and Human Language Technologies, Instituto Tecnológico de Informática (ITI), València, July 11-15, 2011.
- Dr. Sophie Wuerger, University of Liverpool, (United Kingdom), September - December 2011.
- Dr. Liang Wang, National Laboratory of Pattern Recognition (NLPR), Institute of Automation, Chinese Academy of Sciences, Beijing (China), November 2 a 18, 2011.
- Dr. Cristian Aguilera, Universidad del Bio-Bio, Talcahuano (Chile), November 14 – May 14, 2012.

PREDOCTORAL:

- Nadezhda Ivanova Zlateva, Bulgarian Academy of Sciences, Institute of Information and Communication Technologies, Dept. Image Processing and Recognition, April - June 2011.
- Alexander Delianov Marinov, Bulgarian Academy of Sciences, Institute of Information and Communication Technologies, Dept. Image Processing and Recognition, April – June 2011.
- Thanh Ha Do, LORIA Laboratoire Lorrain de Recherche en Informatique et ses Applications, Nancy (France), November 2011.
- Adele Barbulescu, Aalborg University, Aalborg (Dinamarca), November 2011-April 2012. Dr. Sophie Wuerger, University of Liverpool, (United Kingdom), September – December 2011.

8. Courses and seminars by CVC personnel (3)

- "Proyectos en Visión y temas relacionados", in RED PRISMA anual meeting, Universidad de Granada, February 10-11, 2011. Speaker: **Dr. Josep Lladós**
- "Perception-bases representations for computational colour". CCIW2011-Computational Color Imaging Workshop, April, 20-21 2011, Milano (Italy). Speaker: **Dr. Maria Vanrell**.
- "Visión Artificial Aplicada a la Industria" in Jornada Empresarial "Visión Artificial Aplicada a la Industria", Parc de Recerca de la UAB, on May 24, 2011. Speaker: **Dr. David Rotger**

9. Courses at CVC (3)

- Course "Kernel Methods", given in the official mater of Computer Vision and Artificial Intelligence. Dr. Gustavo Camps-Valls, Image Processing Laboratory (IPL), Universitat de València. January 24, 25, 26, 2011, Bellaterra (Spain).

- Course “Towards the unification of Structural and Statistical Pattern Recognition”, impartit en el Màster oficial en Visió per Computador I Intel·ligència Artificial. Prof. Horst Bunke, Research Group on Computer Vision and Artificial Intelligence IAM, University of Bern, March 28-29, 2011. Bellaterra (Spain).
- Course “ADASENS Training”, **Dr. Antonio López**, in CVC (Bellaterra), September 15-16, 2011.

10. Seminars at CVC (30)

1. *Recent advances on contact less hand biometrics and off line signature verification*. Speaker: Miguel Ángel Ferrer, Instituto Universitario para el Desarrollo Tecnológico y la Innovación en Comunicaciones, ULPG, January 2011.
2. *Iterative Gussianization Frameworkd for Image Processing*. Speaker: Gustavo Camps-Valls, Image Processing Laboratory (IPL), Universitat de València, January 2011.
3. *Learning of Data Collections in High-Dimensinal Spaces without Supervision*. Speaker: Djemel Ziou, Chaire de Recherche du CRSNG, Dept. Informatique, Université de sherbrooke, Quebec (Canada), January 2011.
4. *Wearable devices for the visually impaired. Lesson learnt from autonomous robotics*. Speaker: Francisco Escolano Ruiz, Robot Vision Group, Computer Science Department, Universidad de Alicante, February 2011.
5. *Illuminant Color Estimation in Suport of Vision Applications*. Speaker: Elli Angelopoulou, the Pattern Recognition Lab Computer Science Department, University of Erlangen-Nurember (Germany), February 2011.
6. *Colour Constancy in Natural Scenes: a Computational look*. Speaker: Anya Hurlbert, Institute of Neuroscience, Newcastle University (UK), March 2011.
7. *Ebook readers: Challenges and Opportunities for Document Analysis Research*. Speaker: Simone Marinai, Dipartimento di Sistemi e Informatica, Università di Firenze (Italy), March 2011.
8. *Governance and Technology: Imaging Law*. Speaker: Pompeu Casanovas, Institute of Law and Technology – UAB, April 2010.
9. *Albatrosses, jackals and gaze shifts*. Speaker: Giuseppe Boccignone, Dipartimento di Science and dell'Informazione, Università di Milano, Milà (Italy), April 2011.
10. *Actom Sequence Models for Efficient Action Detection / Improving Web Image Search Results Using Query-Relative Classifiers*. Speakers: Adrien Gaido and Josip Krapac (Phd candidates), MSR-INRIA (LEAR Team), INRIA Grenoble, Grenoble (France), May 2011.
11. *Unsupervised STDP-based Learning and Computer Vision Applications*. Speaker: Dr. Timothée Masquelier, Computational Neuroscience Group, ICREA and Univ. Pompeu Fabra, Barcelona, May 2011.
12. *A multimodal interactive image information retrieval system for smartphones*. Speaker: Dr. Antonio Pertusa Ibáñez, Departamento de Lenguajes y Sistemas Informáticos, Universidad de Alicante, May 2011.
13. *A New Metaheuristic Multiobjective Optimization Algorithm / Multiobjective Fuzzy Clustering*. Speakers: Prof. Sanghamitra Bandyopadhyay, Max Planck Institute for Informatiks (Saarbrucken, Germany) & Machine Intelligence Unit – Indian Statistical Institute (Kolkata, India), i Prof. Ujjwal Maulik, German

Cancer Research Center (Heilderberg, Germany) & Dept. of Computer Science and Engineering, Jadavpur University (Jadavpur, India), May 2011.

14. *Learning Gaussian Graphical Models with Domain Specific Priors*. Speaker: Dr. Dimitris Samaras, Associate Professor Stony Brook University, (New York, USA), June 2011.
15. *Document Image Processing and Word Spotting*. Speaker: Dr. Ergina Kavallieratou, Information and Communication Systems Engineering Department, University of the Aegean, Samos (Greece), June 2011.
16. *4D PET-CT Imaging for Radiotherapy Treatment Planning*. Speaker: Matthijs Kruis, Netherlands Cancer Institute, Utrecht (Netherlands), June 2011.
17. *In Uncertainty in Artificial Intelligence 2011*. Speaker: Jean Honorio, Image Analysis Lab, Computer Science Dep., Stony Brook University, New York (USA), July 2011.
18. *Affine Transforms between Image Space And Color Space For Invariant Local Descriptors*. Speaker: Damien Muselet, Laboratoire Hubert Curien, Universite Jean Monnet, Saint-Etienne, France, September 2011.
19. *Supervised learning of gaussian mixture models for visual vocabulary Januaryation*. Speaker: Damien Muselet, Laboratoire Hubert Curien, Universite Jean Monnet, Saint-Etienne, France, September 2011.
20. *Visual Attention: Effects of Blur*. Speaker: Rahat Khan, Laboratoire Hubert Curien, Universite Jean Monnet, Saint-Etienne, France, September 2011.
21. *Incorporating Spatial Information in Bag-of-Visual-Word framework*. Speaker: Rahat Khan, Laboratoire Hubert Curien, Universite Jean Monnet, Saint-Etienne, France, September 2011.
22. *Layered Surfaces Decomposition using the Spider Model*. Speaker: Robby Tan, Department of Information and Computing Sciences, Utrecht University, Utrecht (Netherlands), October 2011.
23. *Affective Image Classification using Features Inspired by Psychology and Art Theory*. Speaker: Allan Hanbury, Department Information & Software Engineering Group, Vienna University of Technology, Viena (Austria), October 2011.
24. *LARTREAT EU Project: Computer, Experimental and Clinical Model of the Three-dimensional Plaque*. Speaker: Nenad Filipovic, University of Kragujevac (Serbia), October 2011.
25. *Learning ComSpeakers for Human Sensing*. Speaker: Fernando de la Torre, ComSpeaker Analysis Laboratory. Carnegie Mellon University, Pittsburg (USA), November 2011.
26. *Multi-scale Stacked Sequential Learning: An effective and efficient meta-learning scheme for context aware classification*. Speaker: Dr. Carlo Gatta, CVC i Universitat de Barcelona, November 2011.
27. *Special Seminar Session – 14 de November de 2011*
 - Track 1: *Monocular 3D Pose Estimation*. Speaker: Srimal Jayawardena, Research School of Information Sciences and Engineering. College of Engineering and Computer Science Australian National University, Canberra (Australia).
 - Track 2: *Saliency, visual attention and image quality*. Speaker: Jue Wang, CiSRA, Canon Information Systems Research Australia, North Ryde (Australia).
 - Track 3: *Space, Design and Interactive Vision: Creating a Spatial Operating Environment*. Speaker: David Minnen, Oblong Industries, Los Angeles (USA).

Track 4: *Perturb-and-MAP Random Fields: Using Discrete Optimization to Learn and Sample from Energy Models*. Speaker: George Papandreou, University of California, Los Angeles (USA).

28. *Enhanced Visual Analysis for Cluster Tendency Assessment and Data Partitioning*. Speaker: Prof. Liang Wang, National Laboratory of Pattern Recognition (NLPR), Chinese Academy of Sciences, Beijing (China), November 2011.
29. *Change Detection in Streaming Multivariate Data Using Likelihood Detectors*. Speaker: Dr. Ludmila I. Kuncheva, School of Computer Science, Bangor University, Wales (UK), November 2011.
30. Express Seminar: *Contributions to the Diagnosis of Intestinal Motility by Automatic Image Analysis*, Santi Seguí, CVC-UB, i *Approximate Ensemble Methods for Physical Activity Recognition Applications*, Pierluigi Casale, CVC-Barcelona Digital, November 2011.

11. Patents (3)

TITLE: ENDOSCOPY SYSTEM WITH MOTION SENSORS

Authors: Gerard Lacey, County Wicklow, **Fernando Vilariño**

Pub. N°: US 2011/0032347

Publication date: February 10, 2011

TITLE: Device, System And Method For Automatic Detection Of Contractile Activity In An Image Frame

Authors: Panagiota Spyridonos, **Fernando Vilariño**, **Jordi Vitrià**, **Petia Radeva**, Fernando Azpiroz, Juan Malagelada

Pub. N°: US 2011/0044515 A1

Publication date: February 24, 2011

TITLE: Method For Obtaining Drivable Road Area

Authors: **José Manuel Álvarez**, **Felipe Lumbreras**

Pub. N°: PCT/EP2010/058733

Publication date: 29/12/2011

12. Publications (149)

12.1. Books (7)

1. S. Escalera, X. Baró, O. Pujol, J. Vitrià, P. Radeva. *Traffic-Sign Recognition Systems*. **SpringerBriefs in Computer Science**. Springer. ISBN 978-1-4471-2244-9. November 2011.
2. J. Vitrià, J. Sanchez, M. Raposo, M. Hernández. ***Pattern Recognition and Image Analysis***. LNCS 6669, Springer-Verlag, ISBN: 978-3-642-2125.
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55. Miguel Angel Bautista, Oriol Pujol, Xavier Baro, & Sergio Escalera. (2011). Introducing the Separability Matrix for Error Correcting Output Codes Coding. In Carlo Sansone, Josef Kittler, & Fabio Roli (Eds.), **10th International conference on Multiple Classifier Systems** (Vol. 6713, pp. 227–236). LNCS.

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60. Mohammad Rouhani, & Angel Sappa. (2011). Implicit B-Spline Fitting Using the 3L Algorithm. In **18th IEEE International Conference on Image Processing** (pp. 893–896).
61. Muhammad Anwer Rao, David Vazquez, & Antonio Lopez. (2011). Color Contribution to Part-Based Person Detection in Different Types of Scenarios. In W. Kropatsch A. Berciano H. Molina D. D. P. Real (Ed.), **14th International Conference on Computer Analysis of Images and Patterns** (Vol. 6855, pp. 463–470). Berlin Heidelberg: Springer.
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65. Naila Murray, Sandra Skaff, Luca Marchesotti, & Florent Perronnin. (2011). Towards Automatic Concept Transfer. In **Proceedings of the ACM SIGGRAPH/Eurographics Symposium on Non-Photorealistic Animation and Rendering** (167.176). ACM Press.
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67. Naveen Onkarappa, & Angel Sappa. (2011). Space Variant Representations for Mobile Platform Vision Applications. In W. Kropatsch A. Berciano H. Molina D. D. P. Real (Ed.), **14th International Conference on Computer Analysis of Images and Patterns** (Vol. 6855, pp. 146–154).

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69. Pierluigi Casale, Oriol Pujol, & Petia Radeva. (2011). Approximate Convex Hulls Family for One-Class Classification. In Carlo Sansone, Josef Kittler, & Fabio Roli (Eds.), ***10th International Workshop on Multiple Classifier Systems*** (Vol. 6713, pp. 106–115). LNCS.
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74. Shida Beigpour, & Joost Van de Weijer. (2011). Object Recoloring Based on Intrinsic Image Estimation. In ***13th IEEE International Conference in Computer Vision*** (pp. 327–334).
75. Simone Balocco, Carlo Gatta, Francesco Ciompi, Oriol Pujol, Xavier Carrillo, Josepa Mauri, et al. (2011). Combining Growcut and Temporal Correlation for IVUS Lumen Segmentation. In Jordi Vitria, Joao Miguel Raposo, & Mario Hernandez (Eds.), ***5th Iberian Conference on Pattern Recognition and Image Analysis*** (Vol. 6669, pp. 556–563). LNCS. Berlin: Springer.
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77. Victor Ponce, Mario Gorga, Xavier Baro, & Sergio Escalera. (2011). Human Behavior Analysis from Video Data Using Bag-of-Gestures. In ***22nd International Joint Conference on Artificial Intelligence*** (pp. 2836–2837).
78. Volkmar Frinken, Andreas Fischer, Horst Bunke, & Alicia Fornes. (2011). Co-training for Handwritten Word Recognition. In ***11th International Conference on Document Analysis and Recognition*** (pp. 314–318).
79. Wenjuan Gong, Jürgen Brauer, Michael Arens, & Jordi Gonzalez. (2011). Modeling vs. Learning Approaches for Monocular 3D Human Pose Estimation. In ***1st IEEE International Workshop on Performance Evaluation on Recognition of Human Actions and Pose Estimation Methods***.
80. Xavier Perez, Cecilio Angulo, & Sergio Escalera. (2011). Biologically Inspired Path Execution Using SURF Flow in Robot Navigation. In ***11th International Work Conference on Artificial Neural Networks*** (pp. 581–588). Springer.

12.6. National Conferences (6)

1. J. Bernal, J. Sánchez, F. Vilariño. *Depth of Valleys Accumulation Algorithm for Object Detection*. In: Pattern Recognition and Image Analysis. Proceedings of the **14th International Conference of the Catalan Association of Artificial Intelligence**, CCIA 2011, Lleida, 26-28 October 2011.
2. A. Hernández, C. Gatta, L. Igual, S. Escalera, P. Radeva. *Automatic Angiography Segmentation based on Improved Graph-cut*. **Jornada TIC Salut Girona**, 4-5 May, Girona, Spain, 2011. Poster.
3. L. Igual, A. Hernandez, S. Escalera, M. Reyes, J. Moya, J.C. Soliva, J. Faquet, O. Vilarroya, P. Radeva. *Automatic Techniques for Studying Attention-Deficit/Hyperactivity Disorder*. **Jornada TIC Salut Girona**, 4-5 May, Girona, Spain, 2011. Poster. Slides.
4. X. Pérez-Sala, C. Angulo, S. Escalera. *Biologically Inspired Turn Control in Robot Navigation*. **14th International Conference on the Catalan Association of Artificial Intelligence**, CCIA 2011. Lleida, 26-28 October, 2011.
5. A. Ramisa, D. Aldavert, S. Vasudevan, R. Toledo, R. Lopez de Mantaras. *The IIIA30 Mobile Robot Object Recognition Dataset*. In Proceedings of the **Eleventh Portuguese Robotics Open**, Robotica 2011.
6. D. Roche, D. Gil, J. Giraldo. *An inference model for analyzing termination conditions of Evolutionary Algorithms*. In **14th International Conference of the Catalan Association of Artificial Intelligence**, CCIA 2011, Lleida, 26-28 October 2011.

13. Other Publications (49)

13.1. CVC International Workshop (42)

1. Antonio Hernández-Vela, M. R., Laura Igual, Josep Moya, Verónica Violant, & Sergio Escalera. *ADHD indicators modelling based on Dynamic Time Warping from RGBD data: a feasibility study* **6th CVC Workshop on the Progress of Research and Development CVCRD 2011**.
2. Carles Sanchez, F. Javier Sanchez, & Debora Gil. *Detecting tracheal rings in videobronchoscopy images* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011**.
3. David Vazquez, Javier Marin, David Geronimo, Daniel Ponsa, Jaume Amores, & Antonio Lopez. *Scale-Dependent Image Pyramid Smoothing Improves Detection of Close Pedestrians* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011**.
4. Joan Manel Nuñez, Fernando Vilariño, & Debora Gil. *Computer Vision Techniques for finger joint sclerosis detection in X-ray images* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011**.
5. Jorge Bernal del Nozal, F. J. S. P. y F. L. V. F. *Towards Automatic Polyp Detection with a Polyp Appearance Model* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011**.

6. Miguel Angel Bautista, Sergio Escalera, Xavier Baro, & Oriol Pujol. *Analyzing the Separability Matrix for ECOC Coding* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
7. Oscar Amoros, Sergio Escalera, Ana Puig, & Maria Salamo. GPGPU Volume Classification using SimpleOpenCL. *6th CVC Workshop on the Progress of Research and Development, 1, 6th CVC Workshop on the Progress of Research and Development CVCRD 2011.*
8. Patricia Marquez, Debora Gil, & Aura Hernandez. A Confidence Measure for Assessing Optical Flow Accuracy in the Absence of Ground Truth. In *ICCV Workshop* (pp. 2042–2049). **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
9. Patricia Marquez, Debora Gil, & Aura Hernandez. *Heading for an Assessment of Optical Flow Accuracy in the Absence of Ground Truth* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
10. Sergio Vera, Debora Gil, Agnes Borrás, F. Javier Sanchez, Frederic Perez, & Miguel A.Gonzalez. *A Comparative Study of Medial Surface Algorithms* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
11. Victor Ponce, Miguel Reyes, Xavier Baro, Mario Gorga, & Sergio Escalera. *Two-level GMM Clustering of Human Poses for Automatic Human Behavior Analysis* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
12. Albert Gordo, Ernest Valveny, & Florent Perronnin. *Report on Large-Scale Document Retrieval and Classification* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
13. Alejandro Gonzalez Alzate, & Jaume Amores. *Evaluation of Spatiotemporal Descriptors on Pedestrian Detection in Video Sequences* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
14. Anjan Dutta, Josep Lladós, & Umapada Pal. *Symbol Spotting and Recognition Using Structural Features of Graph Paths* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
15. Antonio Clavelli, Giuseppe Boccignone, Dimosthenis Karatzas, Mario Ferraro, & Josep Lladós. (2011). *Towards Modelling an Attention-based Text Localization Process That Relies on a Composite Search Strategy* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
16. Bhaskar Chakraborty. *Human Action Recognition in Complex Scenes Using a Selective STIP Detector* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
17. David Augusto Rojas, Fahad Shahbaz Khan, & Joost Van de Weijer. *Evaluating Color Detectors and Descriptors for Object Recognition* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
18. David Fernandez, Josep Lladós, & Alicia Fornes. *Word Spotting in Old Handwritten Documents* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**

19. Diego Alejandro Cheda, Daniel Ponsa, & Antonio Lopez. *Identifying Close and Distant Image Regions* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
20. Ekaterina Zaytseva, & Jordi Vitria. *A Shared Sketch Learning Algorithm for Object Recognition* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
21. Farshad Nourbakhsh, Dimosthenis Karatzas, & Ernest Valveny. *Logo Detection in Color Document Collections* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
22. Fernando Barrera, Felipe Lumbreras, & Angel Sappa. *Multimodal Stereo for Advanced Driver Assistance Systems* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
23. Jaume Gibert, & Ernest Valveny. *Advances on Graph Embedding by Statistics on Node Representative* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
24. Jon Almazan, Alicia Fornes, & Ernest Valveny. *A Non-Rigid Feature Extraction Method for Shape Recognition* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
25. Jose Carlos Rubio, & Joan Serrat. *Matching Image Regions with Hierarchical Graphs* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
26. Josep Maria Gonfaus. *FACE ME. Live Face Detection on Android* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
27. Lluís Pere De las Heras, & Gemma Sanchez. *New Advances on Floorplan Structure Interpretation at CVC* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
28. Marc Serra, Robert Benavente, Olivier Penacchio, & Maria Vanrell. *Overview and Comparison of Methods for Recovering Intrinsic Images* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
29. Marco Pedersoli. (2011). *CtFdet: A library for Coarse-to-Fine Inference for Object Detection* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
30. Marina Alberti, Carlo Gatta, Simone Balocco, Josepa Mauri, & Petia Radeva. *3D Automatic Luminal Border Detection* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
31. Mario Rojas, David Masip, & Jordi Vitria. *Automatic Prediction of Facial Trait Judgments* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
32. Michal Drozdal, Santiago Seguí, Jordi Vitria, & Petia Radeva. *Video Segmentation Using Adaptive Windowing Technique* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
33. Mohammad Rouhani, & Angel Sappa. *A Correspondence Free Registration Through Embedding on Implicit Functions* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
34. Monica Piñol, & Ricardo Toledo. *Video Retrieval Using Q-Learning* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**

35. Muhammad Anwer Rao, David Vazquez, & Antonio Lopez. *Coloring Pedestrian Detectors* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
36. Muhammad Muzzamil Luqman, & Josep Lladós. *Efficient Indexing and Retrieval of Graphs Using Techniques for Embedding Graphs in Real-Valued Feature Spaces* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
37. Naila Murray, Maria Vanrell, Xavier Otazu, & Carlos Alejandro Parraga. *What are you looking at? Improving Visual gaze Estimation by SaliencyInduction* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
38. Naveen Onkarappa, & Angel Sappa. *Reverse Log-Polar Representation* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
39. Noha Elfiky. *Automatic Learning of Pyramid Shapes* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
40. Victor Borjas, Petia Radeva, & Jordi Vitria. *Plane Division of People in Crowded Scenes* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
41. Wenjuan Gong. *Modeling vs. Learning Approaches for Monocular 3D Human Pose Estimation* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**
42. Yainuvis Socarras Salas, Antonio Lopez, & David Vazquez. (2011). *Image Segmentation for Improving Human Detection* (J.Vázquez-Corral D. G. F.Diego, Ed.) **6th CVC Workshop on the Progress of Research and Development CVCRD 2011.**

13.2. Technical Reports (5)

1. Joan Manel Nuñez. (2011). *Computer vision techniques for characterization of finger joints in X-ray image*. Master's thesis. **CVC Technical Report #165**
2. Alejandro González. (2011). Evaluation of spatiotemporal descriptors for pedestrian detection in video sequences. Master's Thesis. **CVC Technical Report #166.**
3. Yainuvis Socarrás. (2011). Image segmentation for improving pedestrian detection. Master's Thesis. **CVC Technical Report #167.**
4. Carles Sánchez. (2011). *Tracheal ring detection in bronchoscopy*. Master's thesis. **CVC Technical Report #168.**
5. Maria del Camp Davesa. (2011). Human action categorization in image sequences. Master's Thesis. **CVC Technical Report #169.**

14. Other Research Activities (6)

- **13th International Conference on Computer Vision – ICCV 2011**
November 6-13, 2011, Barcelona, Spain
- **5th Iberian Conference on Pattern Recognition and Image Analysis - IbRPIA 2011**
June 8-10, 2011, Las Palmas de Gran Canaria, Spain
- **ADAO Final Review**
May 27, 2011. CVC, Bellaterra
- **CVPR 2011 Talks**, CVC, Bellaterra, June 8, 2011.
 - *Unsupervised Local Color Correction for Coarsely Registered Images*, Miguel Riem de Oliveira, Angel Sappa, Vitor Santos.
 - *Asymmetric Distances for Binary Embeddings*, Albert Gordo, Florent Perronnin.
 - *Saliency Estimation Using a Non-Parametric Low-Level Vision Model*, Naila Murray, Maria Vanrell, Xavier Otazu, C. Alejandro Parraga.
 - *A Coarse-to-fine approach for fast deformable object detection*, Marco Pedersoli, Andrea Vedaldi, Jordi González.
- **6th Computer Vision Center Workshoo CVCR&D 2011**: on the Progress of Research and Development. October 28, 2011, CVC, Bellaterra, Spain
- **Technical Forum**: "Introduction to Android Programming and OpenCV for Android". Sergio García, December 1, 2011. CVC, Bellaterra

15. Awards (4)

- **Best Paper award ICDAR 2011 - 11th International Conference on Document Analysis and Recognition**
Paper Title: *Browsing Heterogeneous Document Collections by a Segmentation-free Word Spotting Method*
Authors: David Aldavert, Ricardo Toledo, Marçal Rusiñol, Josep Lladós
September 18-21, 2011, Beijing, China
- **Best Thesis 2009-2010 Award IbPRIA 2011**
Thesis Title: *Writer Identification by a Combination of Graphical Features in the Framework of Old Handwritten Music Score*
Author: Dra. Alícia Fornés va rebre el Premi AERFAI a la millor tesi 2009-2010, IbPRIA 2011, a Las Palmas de Gran Canaria, June 8-10 2011
- **Award NIPS2011 Domain Adaptation Workshop:**
ADAS Group was given a special mention and also won one of the economical prizes sponsored by Google, with a poster presented at NIPS2011 Domain Adaptation Workshop.
December 17, 2011, Sierra Nevada (Spain).
- **2nd Prize, Best R+D Infrastructure 2011 "Sello Innovación":**
This award is for the collaboration tasks between companies and R+D infrastructures in order to promote the commercial relationships on Research and innovation.
October, 2011. Madrid (Spain)

16. Graph

