

François Brémont

1.1 Address

Work Address:

INRIA Sophia-Antipolis, Project PULSAR

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Research Domains: video interpretation, scene understanding, multi-sensor fusion, spatio-temporal reasoning, event recognition, uncertainty management, machine learning and knowledge representation.

1.2 Professional History

- 2nd July 2007 - HDR, (diploma to supervise researcher) from the University of Nice – Sophia Antipolis on Scene Understanding: perception, multi-sensor fusion, spatio-temporal reasoning and activity recognition.
- 1st January 2002 - Confirmed researcher at INRIA (CR1).
- 1st February 2000 - Permanent research position at the Institut National de Recherche en Informatique et en Automatique (I.N.R.I.A.) de Sophia-Antipolis in the ORION project.
- 1997- 2000: Post-Doctorate at the University of Southern California (U.S.C.) in Los Angeles (U.S.A.), at the Institute for Robotics and Intelligent Systems (I.R.I.S.), directed by the Professors Ramakant Nevatia and Gérard Médioni.

1.3 Education

- 1994 - 1997: Doctorate in Computer Science from the University of Nice - Sophia Antipolis at I.N.R.I.A in the ORION project, « Environnement de résolution de problèmes pour l'interprétation de séquences d'images », under the direction of Monique Thonnat. Obtained with highly recognition by the jury.
- 1989 -1992: Master in Computer Science from the École Normale Supérieure de Lyon et de l'Université Claude Bernard (Lyon I) specialty in vision and artificial intelligence.
- 1989 Graduate from the École Normale Supérieure in Lyon, in Computer Science.
- 1986 - 1989: Classes Préparatoires at Descartes College in Tours.

1.4 Teaching

Teaching of **video interpretation techniques** since 6 years at the master and doctorate level and teaching in computer science for 14 years.

- 2008: Thematique School as a speaker: Dagstuhl Seminar, Wadern, Germany on February 24-29, 2008 and VISIONTRAIN School, Les Houches, France on March 10-14, 2008.
- 2003 - 2009: Teaching at EURECOM Master at Sophia Antipolis, 3h class on video understanding techniques.
- 2007: Teaching at DUIE (professional training) of the Nice University - Sophia Antipolis for gerontologist assistants – 16th February 2007, 1h30 class on video interpretation techniques.
- 2000 - 2004: Teaching at Nice University for the Master in Astronomy, 3h class on methods for statistical and Bayesian classification.
- 1994 - 1997: Teaching at Nice University for post graduated students on programming languages.

1.5 Supervision of Research Activities

Head of the group on Video Understanding in the PULSAR team since 2000. More precisely supervision of **48 students and researchers: 12 doctorate students, 22 master students and 14 research engineers.**

Co-supervisor/supervisor of 7 ongoing PhDs

- Rim Romdhame: from March 2009 till March 2012. Event Recognition in Video Scenes with Uncertain Knowledge. 100% supervision.
- Slawomir Bak: from February 2009 till February 2012. People detection in temporal video sequences by defining a generic visual signature of individuals. 100% supervision.
- Duc Phu Chau: from December 2008 till December 2011. Optimizing tracking algorithms for scene understanding. 80% co-supervision with M. Thonnat.
- Guido-Tomas Pusiol: from October 2008 till October 2011. Event Learning based on Trajectory Clustering. 100% supervision.
- Nadia Zouba: from November 2006 to November 2009. Multi-sensor analysis of people behaviour on Geriatrics and Assisted Autonomy. 75% co-supervision with M. Thonnat.
- Anh Tuan Nghiem: from November 2006 till November 2009. Video interpretation and algorithm parameter tuning. 75% co-supervision with M. Thonnat.
- Mohamed Becha Kaaniche: from April 2006 till November 2009. Gesture recognition for human activity interpretation. 100% supervision.

Co-supervisor for 5 defended PhDs

- Marcos Zuniga: from January 2005 till November 2008. Primitive Event Learning and Recognition in Video. 75% co-supervision with M. Thonnat.
- Bernard Boulay: from October 2003 till December 2006. Posture recognition for human activity interpretation. 75% co-supervision with M. Thonnat.
- Benoît Georis: from September 2002 till January 2006. Program Supervision Techniques for Easy Configuration of Video Understanding Systems. PhD of Catholic University of Louvain la neuve (UCL) Belgium. Defended in January 2006. 50% co-supervision with M. Thonnat and B. Macq.
- Think Van Vu: from October 2001 till October 2004. Temporal Scenario for Automatic Video Interprétation. Defended in October 2004. 50% co-supervision with M. Thonnat.
- Somboon Hongeng: from January 1998 till January 2004. A Unified Bayesian and Logical Approach for Video-Based Event Recognition. PhD of the University of Southern California. Defended in May 2003. 40% co-supervision with R. Nevatia.

Post-doctorate Researchers and Visiting Doctorate Students

- Gal Lavee: August 2008 till October 2008. Doctorate Researcher from Computer Science Department, Technion (Israel Institute of Technology), Technion City, Israel, in Understanding Video Events.
- Suresh Sundaram: August 2007 till August 2008. Post-doctorate Researcher from IIT-Delhi, India, in machine learning and on-line learning system for visual tracking.
- Tomi Raty: February 2007 till February 2008. Doctorate Researcher from VTT Technical Research Centre of Finland, in Scalable Video Transmission for Surveillance Systems.

Supervisor of 22 master students and 14 research engineers

- January 2007 - February 2011: Jose-Luis Patino_Vilchis, engineer for the CARETAKER and COFRIEND projects on event learning for apron monitoring.
- January 2007 - February 2011: Bernard Boulay, engineer for the COFRIEND project on activity recognition for apron monitoring.
- January 2009 - February 2010: Daniel Zullo, engineer for the CIU project on elderly people monitoring.
- December 2008-March 2009: Rim Romdhame, Institut Supérieur des Technologies Médicales de Tunis, internship on event recognition techniques.
- May 2008 - May 2010: Erwan Demairy, engineer for the ADT SUP project on Scene Understanding Platform development.
- March-September 2008: Chau Duc Phu, DEPA IFI Hanoi, internship on unsupervised learning of behaviour patterns for event recognition.
- March-September 2008: Bak SLAWEK, Poznan University of Technology Poland, internship on Incremental learning for video understanding.
- March-September 2008: Guido PUSIOL, UNC Córdoba Argentine, internship on people detection for elderly monitoring at home.
- February-August 2008: Mohamed Siala, Tunis University, internship on people detection in complex environment.
- January-July 2008: Claudio COSTAGLIOLA, Santiago University Chile, internship on Reliable Object Tracking considering Dynamic Occlusion.
- April-September 2007: Masaki Yoshimura, Soka University Tokyo Japan, internship on crowd behaviour recognition.
- May-August 2006: SAXENA Shobhit, ITT NewDehli, internship on crowd motion detection.
- April-September 2006: JACQ Patrice, DEA Paris VI, internship on learning temporal event patterns using a graph.
- March-September 2006: ZOUBA Nadia, DES Paris X, internship on information fusion with heterogeneous sensors.
- March-September 2006: NGHIEM Anh Tuan, DEPA IFI Hanoi, internship on performance evaluation for video processing.

- April 2006 - September 2008: CORVEE Etienne, engineer for the CARETAKER project on 3D coherence throughout time.
- November 2005 - July 2008: Ruihua MA, engineer for the SERKET project, on improvement of segmentation algorithms for video processing.
- April 2004 - April 2006: Gabriel DAVINI, engineer for the SAMSIT project, on behaviour recognition in trains.
- September 2003-September 2006: VALENTIN Valery, engineer for the ETISEO project, on performance evaluation for video processing.
- October 2005-April 2006 Mohamed Becha Kaaniche, master of ENIT Tunis, internship on behaviour recognition for trichogramma wasps.
- January-August 2005: Alexander Toshev, diploma thesis of Karlsruhe University, internship on learning frequent temporal event patterns.
- April-September 2004: Le Son Pham. DEPA, IFI Hanoi, internship on a video event ontology.
- March-August 2004: Jihene Bannour. DEA Saint-Etienne, internship on automatique generation of 3D animation.
- April-September 2003: Bernard Boulay. DEA, ESSI UNSA, internship on posture recognition.
- April-September 2003: Thi-Thanh-Tu Bui. DEPA, IFI Hanoi, internship on coherence verification of scenario models.
- April-December 2003: Florent Fusier. DESS Bordeaux II, internship on the detection of people's head in videos.
- March-Juillet 2002: Nicolas Moenne-Loccoz. DEA Informatique UNSA, internship on behaviour recognition with dynamique Bayesian network.
- April 2002- March 2005: Christophe Tornieri. ESSI-UNSA, internship on image reference updating and then engineer for the ALSTHOM project, on behaviour recognition in train.
- January 2002-March 2006: Magali MAZIERE, engineer for the CASSIOPEE project, on behaviour recognition for bank agency monitoring.
- April 2001-October 2001: Think Van Vu. Internship on 3D visualisation for video interpretation. internship de l'Institut de la Francophonie pour l'Informatique de Hanoi.
- Juillet-August 2001: Olivier Bertrand, internship ENS-Lyon., internship on color information for video interpretation.
- Juillet 2000-December 2002: Frédéric Cupilla. Engineer for the ADVISOR project.
- April 2000-December 2000 and August 2001 to December 2002: Alberto Avanzi. Internship Supélec on video interpretation for Mediaspace applications. Then Bull engineer for the ADVISOR project since August 2001.
- April 2000-October 2003: Binh Bui. Classification of mobile regions. Internship de l'Institut de la Francophonie pour l'Informatique de Hanoi. Then engineer for the RATP project since February 2001.
- May-August 1996: Elliott Brooks. Knowledge Inference Engine. Internship Master of Sciences, University of Edinburgh (U.K.).
- May-September 1995: Thiéry Nade. Representation of static environnement (MARES). Internship de D.E.S.S.-I.S.I., Université de Nice - Sophia Antipolis.

1.6 Collaboration and research projects

Member of the **steering committee** and **work package leader** of: 7 European projects, 10 French projects, 6 industrial projects, 1 Asian project and 1 U.S. project (corresponding to 25 research projects).

- **CIU-Santé** is a DGE French project from December 2008 to July 2011 on long-term monitoring of elderly people at home with CSTB, the Nice City Hospital, Pôle SCS, Thales Aliena Space, Actis Ingenierie, Movea, CEA and UNSA. In this project two experimental rooms have been built in Nice-Cimiez Hospital for monitoring Alzheimer patients.
- **VIDEO-ID** is an French ANR Security project from February 2008 to February 2011 on intelligent video surveillance and people biometrics. The involved partners are: Thales-TSS, EURECOM, TELECOM and Management SudParis, UIC, RATP, DGA, STSI.
- **COFRIEND**: the European ICT-FP7 project Cofriend aims at conceiving cognitive vision system for automatic monitoring of human activities. Cofriend project will start in February 2008 and end in February 2011 and follows up the Avitrack project. The project studies all activities occurring around aircraft parked on aprons at Toulouse airport. Most specifically the system have to adapt itself to lighting condition changes, weather changes, to new airport configurations, to the arrival of new servicing vehicles and new aircraft types. The performance of the system to recognize correctly the actions of interest and its capability to adapt itself to unexpected situations is a keypoint of this project. Six teams are involved in Cofriend: INRIA Sophia-Antipolis, Silogic, Toulouse airport (France), University of Reading and of Leeds (UK), University of Hamburg (Germany).
- **MONITORE**: Real-time Monitoring of TORE Plasma is an INRIA Exploratory Action from May 2008 to 2009 for the real-time monitoring of imaging diagnostics to detect thermal events in tore plasma. This work is a preparation for the design of the future ITER nuclear reactor and is done in partnership with the Imaging and Diagnostics Group of the CEA Cadarache, France.
- **SYSTEM@TIC** project **SIC**. I am participating in the SIC project from the French "pole de competitivite" SYSTEM@TIC which is a strategic initiative in security from the Paris region. More precisely the SIC project has been founded for 42 months from October 2006 to April 2010 in perimeter security for sensitive buildings. The partners include Thales, EADS, Alcatel, BULL, SAGEM, Bertin, Trusted Logic, CEA, Sodern, Axalto, GET/INT, Paris Sud and RATP. The solutions proposed by SIC project will be validated through two demonstrators, RATP subway station and Bobigny administrative building.
- **GER'HOME** In 2006, we started the GERHOME project in collaboration with CSTB (Centre Scientifique et Technique du Batiment) and the Nice City Hospital (Groupe de Recherche sur la Tophicite et le Viellissement). The GER'HOME project was funded by the PACA region. GER'HOME project is devoted to experiment and develop techniques that allow long-term monitoring

of elderly people at home. In this project an experimental home has been built in Sophia Antipolis instrumented with environmental sensors such as pressure contract, water and electric consumption sensors. We have developed unsupervised event learning and recognition techniques to be integrated in a platform to provide services and to perform experiments.

- **CANTATA** is an ITEA European project started in December 2006 until December 2008. This project studies performance evaluation for multi-media content analysis algorithms and in particular for video surveillance.
- **CARETAKER** is an IST-FP6 STREP European project which started in March 2006 and will end in August 2008. The main objective of this project is to discover pertinent information in large multimedia database. The prime partner is Thales Communications (France) and others partners are: Multitel (Belgium), Kingston University (UK), IDIAP (Switzerland), Torino GTT and Roma ATAC Transport Agency (Italy), SOLID software editor for multimedia data basis (Finland) and Brno University of Technology (Czechia). We are clustering people trajectories and recognizing and learning scenarios for frequent or unexpected human activities from both video and audio events. We have managed to discover knowledge such as "travelers are 40% quicker to buy ticket during rush hours". Two demonstrators have been done in Torino and Rome subways.
- **SERKET**, is an European ITEA project in collaboration with THALES R&T, THALES Security Syst, CEA, EADS and Bull (France); Atos Origin, INDRA and Universidad de Murcia (Spanish); XT-I, Capvidia, Multitel ABSL, FPMs, ACIC, BARCO, VUB-STRO and VUB-ETRO (Belgium). The project was at the end of November 2005 and it will end in July 2008. The main objective of this project is to develop techniques to analyze crowd behaviors and to help in terrorist prevention.
- **ETISEO**: I have led the ETISEO project on performance evaluation of video understanding algorithms. This project began in 2005 and ended in January 2007. It has provided both dataset and evaluation tools which constitute a reference in "vehicles and pedestrians scene understanding". Project ETISEO has focused on the treatment and interpretation of videos involving pedestrians and (or) vehicles, indoor or outdoor, obtained from fixed cameras. This project was part of the Techno-Vision evaluation network funded by the French ministry of defense and the French ministry of research. The main partners were Silogic (coordinator, evaluator and data-provider), INRIA (scientific leader), INRETS-LEOST (data-provider) and CEA-List (data-provider). Moreover, this project had brought together governmental agencies (from UK, US and France) and about 20 international teams that have developed algorithms and wanted to evaluate and compare their technology with each other. ETISEO project had been provided them with free videos, metrics and an automatic tool to run evaluations.
- **AVITRACK** is a IST-FP6 European project in collaboration with Silogic S.A. Toulouse (FR), University of Reading (UK), CCI Aeroport Toulouse Blagnac (France), Fedespace (France), Tekever LDA, Lisbon (Portugal), ARC Seibersdorf research GMBH, Wien (Austria), Technique Universities, Vienna (Austria), IKT (Norway) and Euro Inter (Toulouse France). This 2-year project was started in February 2004 and ended in March 2006. During this project, we have developed algorithms to recognize the servicing activities around parked aircrafts in an apron area monitored by eight cameras in Toulouse

airport (France). Activities may be simple events involving one mobile object like the arrival or the departure of ground vehicles or complex scenarios like refueling or luggage loading.

- **SAMSIT** was a project in collaboration among ALSTOM, CEA, SNCF, INRETS. It started in January 2004 and ended in March 2006. We have developed techniques to automatically detect human behaviors in trains. Such detection of human behaviors are challenging ones, due to train motion, cluttered environment and fast illumination changes. Thanks to the combination of audio and video signals, we were able to detect scenarios such as scratching the window, cell-phone theft, violence and beggars.
- **SNCF:** the RASV project was collaboration with SNCF which began in September 2003 for duration of 18 months. We have applied techniques to automatically detect human behaviors in trains specified by SNCF and security operators.
- **ALSTOM:** the ALSTOM project began in April 2003 and finished in July 2003. In this project we had realized a feasibility study on an industrial application allowing detecting human behaviors in trains using video understanding techniques.
- **ISERE:** Inter-media Semantics Reasoning, We had participated in the specific Inter-media Semantics Extraction and Reasoning (ISERE) STIC-Asie action from 2004 until December 2006. ISERE project had brought together four research centers one from Asia and three from France. It promoted the development of research on semantics analysis, reasoning and multimedia data, and the application of these results in the domains of e-learning, automatic surveillance and medical databases. Besides allowing sharing scientific results, this cooperation has increased the exchange of researchers between Asia and France. The Asia partners of the ISERE action were IPAL-CNRS, I2R A-STAR and NUS for Singapor, MICA for Vietnam, the National Institute of Informatics NII for Japan and the National Cheng Kung University and the National Taiwan University for Taiwan. The French partners were INRIA-Orion, CLIPS-IMAG CNRS-INPG-UJF and IRIT.
- **STMicroElectronics:** we have cooperated with STmicroelectronics and Ecole des Mines de Paris at Fontainebleau in the framework of PACA Lab from March 2003 till March 2008. We have designed intelligent cameras integrating image analysis and interpretation capabilities. In particular a PhD doctorate (Bernard Boulay) has developed a new algorithm for 3D human posture recognition in real-time from video cameras. This work has been applied to the long-term monitoring of elderly people living at home.
- **KINOMAI:** the KINOMAI project started in December 2003 for duration of four months in collaboration with Kinomai company. We have developed an object recognition platform for image and video indexing and retrieval purposes.
- **VIGITEC:** the Vide project started in November 2003 and ended November 2005. This project was motivated by a Belgium company installing video surveillance systems. The goal of this project was to transfer vision algorithms to build two products in video surveillance. The first product was to monitor the access of building and second one was targeting urban violence such as fighting groups in the street.

- **BULL:** the goal of this technology transfer of 8 years (March 1998-2006), called TELESCOPE was to build a tool box for intelligent video surveillance. A main task was to ease its utilisation to improve its robustness and to extend its functionalities.
- **CAssiopée:** the CASSIOPEE project is a French collaboration among Le Credit Agricole, Ciel and Securitas Systemes - Eurotelis which started in January 2002 and ended in March 2006. We have developed and tested an automatic visual-surveillance platform for detection of predefined scenarios such as bank attack in a bank agency environment. The system has been validated in four bank agencies by the bank security operators located in a distant control security center.
- **RATP:** in the framework of collaboration with RATP from February 2001 till 2008, we have designed a real-time system for lateral shape recognition. We have developed an operational system which is able to detect and classify people and objects when they access the subway network (validate their ticket). The system is combining information from several sensors (one top camera, five lateral cameras, leds and optical cells) to obtain a very high recognition rate with real-time constraint.
- **ADVISOR:** the ADVISOR project - Annotated Digital Video for Intelligent Surveillance and Optimized Retrieval - was an IST European project on multi camera video surveillance systems in subways which lasted 3 years and finished in March 2003. THALES TRT UK, BULL, VIGITEC, Univ. Kingston, Univ. Reading, KCL London has participated in the project. The aim of this work was to automatically analyze, to recognize scenarios of interest, archive and annotate subway video sequences. We were able to recognize six types of behaviors: fighting, over-crowding, fraud (jumping over barrier), graffiti, blocking exit and vandalism (breaking ticket machine). This work has been validated with Brussels and Barcelona subways. A demonstrator was installed in Barcelona subway for 10 days fed continuously by four cameras and observed by real security operators during the operational time.
- **MediaSpace:** the MediaSpace was a national project on smart video conferencing which lasted from January to December 2000 in collaboration with GRAVIR team. The goal was to analyze people behaviors in office in order to improve relationships of employees from team located in different sites. Thanks to this system we were able to detect meeting (with guests) and turn of automatically the video conferencing system to protect employee privacy. We were also able to focus automatically the camera (as an intelligent camera man) on points of interest in the scene when people for instance were writing on the white board.
- **V.S.A.M.:** I have been involved in the V.S.A.M. (Video Surveillance and Activity Monitoring) from DARPA agency through the University of Southern California from October 1997 to January 2000. We have developed techniques to analyze check points depicted by videos taken by drones during the Yugoslavian war. We were able to detect whether cars were passing normally the check points or not.
- **PASSWORDS:** the PASSWORDS was an IST European project on super market, parking and subways monitoring. It has been done in collaboration with VIGITEC, SEPA, DIBE, AUCHAN from 1994 to 1997. The goal was to

show that at the time an automatic process could recognize human behavior such as loitering in the parking lot.

1.7 Software realization and dissemination

Several experiences in technological **transfer** towards **industrials** have permitted to exploit research result:

- **Consultant** for companies in intelligent video surveillance: Ivisiotech in 2006-2007 and Keeneo from 2005 to 2008.
- **Co-fonder** of a company in intelligent video surveillance in 2005 and member of scientific counsel: **Keeneo**, 15 people, awarded in the Tremplin exam Entreprise-Sénat and awarded in the national exam for spin-off creation in innovative technology in 2005.
- **Patent and Software**: co-inventor of two large software (VSIP and PFC); one of which VSIP was registered at APP (French software administration) in 2005.
- **Technological Transfer**: co-inventor of the **VSIP** platform on intelligent video surveillance for 6 European projects R&D and 6 industrial contracts (in particular Bull and Vigitec).
- **Co-inventor** of the real-time 4D software called **PFC** for counting and classifying people traveling in the subway. This software has been transferred to a SME in video processing (Timeat) in Rennes and to RATP.

1.8 Dissemination of scientific knowledge

Several articles have been disseminated towards **large news media** and have enabled to make known this scene interpretation work to a wide population:

L'Ordinateur individuel (March 1999), *Sciences et Avenir* (January 2000), *Industries et Techniques* (juillet 2000), *Transert* (June 2001), *Le Monde* (August 2001), *De Morgen* (Belgique August 2001); *La Meuse* (Belgique August 2001) *Les Echos* (September 2001), *l'Expresso* (Italie, September 2001), *Ercim News* (Europe, October 2001), *Byte.com* (Royaume-Uni, 7 April 2003), *Faits marquants de la recherche et développement à la RATP* (2004), *Stratégies et veille technologique*, Crédit Agricole (n° 7, December 2004), *Enjeux les Echos* (n° 209, January 2005), *Ca m'intéresse* (October 2005), *Webzine du CSTB* (December 2005), *Journal des Electriciens* (n° 838, April

2006), *Nice Matin* (2 October 2006), *Frost & Sullivan* (10 Jan 2008), le journal *Domotique News* no224 Jun 2008, *La Recherche* 2009.

1.9 Collaboration, Visits

Thématique mobility through 7 scientific domains (related to cognitive systems) and **geographic mobility** including 4 laboratories in France and in US:

2006 - 2009	Unsupervised learning of scenario models in Sophia-Antipolis.
2003 - 2006	Control and evaluation of programs for scene interpretation in Sophia-Antipolis.
2000 - 2003	Recognition of scenarios using temporal constraint networks in Sophia-Antipolis.
1997- 2000	Recognition of scenarios using Bayesian networks and Hidden Markov Models (HMM) in Los Angeles at R. Nevatia laboratory (U.S.A.).
1994 - 1997	Modeling of the video interpretation process in Sophia-Antipolis.
1992	Spatio-temporal reasoning for knowledge based systems in Grenoble at F. Rechenmann laboratory.
1991	Classification using neural networks at Providence - Rhodes Island (U.S.A.).

1.10 Scientific responsibilities

Participations, invitations and responsibilities for several scientific conferences:

- **Organizer** of
 - the ETISEO seminars on performance evaluation for video interpretation from January 2005 to December 2006.
 - a GdR-ISIS day (Intelligent Video Surveillance, Paris, 17 December 2008).
- **Handling editor** of the international journal “Computing and Informatics” since September 2006.

- **Experts of the French ANR** (research agency) in 2007 and 2008 for the call "Concepts Systèmes et Outils pour la Sécurité Globale".
- **EC INFSO Expert** in the framework of Ambient Assisted Living European FP7 (HERMES and VitalMind projects).
- **Reviewer for the journals:** AIJ Artificial Intelligence Journal, IET Computer Vision, CVIU Computer Vision and Image Understanding, IJHCS International Journal of Human-Computer Studies, IJPRAI International Journal of Pattern Recognition and Artificial Intelligence, IMAVIS Image and Vision Computing, IVCJ Image and Vision Computing Journal, JPRR Journal of Pattern Recognition Research, MEP Medical Engineering and Physics, MVA Machine Vision and Applications Journal, The Open Cybernetics and Systemics Journal, PAAJ, PR Pattern Recognition Letters, EURASIP-JASP, EURASIP-JIVP Journal on Image and Video Processing, PAMI Transactions on Pattern Analysis and Machine Intelligence, Transactions on Systems Man and Cybernetics, IEEE Transactions on Multimedia, TKDE Transactions on Knowledge and Data Engineering, IEEE Transactions on Neural Networks.
- **Program committee** member of the conferences and workshops WAMOP IEEE ICNSC'06 (International Conference on Networking and Sensing Control), IEEE ECCV'06 (European Conference on Computer Vision), IEE ICDP 2005-2006, VIE 2006-2007 Visual Information Engineering, CVPR 2007 Computer Vision and Pattern Recognition, M2SFA2 2008 ECCV Workshop on Multi-camera and Multi-modal Sensor Fusion, ICVS 2008-2009 International Conference on Computer Vision Systems, VNBA 2008 ACM International Workshop on Vision Networks for Behavior Analysis, AVSS 2006-2008 IEEE Conference on Advanced Video and Signal based Surveillance, Workshop on Performance Evaluation of Tracking and Surveillance, VS-Pets2005, VS 2005-2008 The IEEE International Workshop on Visual Surveillance, IWINAC 2009 3rd International Work Conference on the Interplay between Natural and Artificial Computation, and BMVC 2008 British Machine Vision Conference.
- **Reviewer for the conferences** and workshops RFIA'03, BMVC'04'06-08, ECAI'04, WAMOP, CVPR'04-05'07-09, ACIVS'05, ICCV'05'08-09, IJCAI'05, AVSS'05-09, ECCV'06, ICVS'06-09, VIE'06-07, VS-Pets2005, VS'05-08, ICDP'05-06, ICNSC'06, CDPR'06, WMVC08, IEEE IWINAC 2008, INDIN 2008.
- **Session chair** and chairman of discussion panels of conferences ICDP'05 and WMVC 2007 IEEE Workshop on Motion and Video Computing - Austin Texas - USA, February 23-24, 2007.
- **Area chair** of the 6th IEEE International Conference on Advanced Video and Signal Based Surveillance, AVSS'09, Genoa, Italy, September 2-4, 2009.

- **Collaboration** with several international teams such as Multitel in Belgium, the University of Southern California, U.S., the National Cheng Kung University in Taiwan and University of Kingston upon Thames UK.
- Member of **steering committee** and **workpackage leader of**: 7 European projects, 10 French projects, 6 industrial projects and 1 U.S. project (corresponding to 24 research projects).
- **Reviewer of 4 PhD theses**:
 - Christophe Le Gal de l'Institut National Polytechnique de Grenoble in 2003,
 - Mr. Maxime Cottret Toulouse at LAAS in October 2007
 - Claudio Picciarelli of University of Udine, Italy in February 2008.
- **Invited Talks**
 - Workshop M.I.T. invited by A. Bobick - Massachusetts, May 1997.
 - Seminar by M. Ghallab at L.A.A.S. - Toulouse, March 1997.
 - Seminar by G. Medioni at the University of Southern California, L.A. (U.S.A.), February 1997.
 - Seminar for the workshop Connaissance et Documents Temporels (AFIA 2005), Nice, France.
 - Seminar by J. Ferryman at the conference PETS 2007 (Performance Evaluation of Tracking and Surveillance) during ICCV 2007, Rio de Janeiro Brazil.
 - Seminar at the Journée Mondiale de l'Utilisabilité, Sophia-Antipolis, November 2007.
 - Talks at AViRS 2008 (Analyse Video pour le Renseignement et la Sécurité, Paris, April 2008),
 - Talks at THEMIS 2008 (Tracking Humans for the Evaluation of their Motion in Image Sequences, part of BMVC 2008, Leeds, Sept. 2008) and
 - Talks at VS 2008 (Visual Surveillance workshop, part of ECCV 2008, Marseille, Oct. 2008).
- **Invitation for winter school** as a speaker
 - invited by B. Neumann: Dagstuhl Seminar, Wadern, Germany on February 24-29, 2008 and
 - invited by V. Hlavac: VISIONTRAIN School, Les Houches, France on March 10-14, 2008.

1.11 2008-2009 realizations

- **New Publications**

- 2 international journals
 - 10 international conferences
 - 3 national conferences
- **(Co-)supervision of 4 new PhDs**
- **Defense of one PhD:** Marcos Zuniga on Primitive Event Learning and Recognition in Video. 75% co-supervision with M. Thonnat.
- **4 new research projects**
 - CIU-Santé on Alzheimer patient monitoring,
 - VIDEO-ID on video surveillance and people biometrics,
 - COFRIEND on learning and airport monitoring,
 - MONITORE on real-time monitoring of tore plasma.
- **Invitation** for winter school as a speaker
 - invited by B. Neumann: Dagstuhl Seminar, Wadern, Germany on February 24-29, 2008 and
 - invited by V. Hlavac: VISIONTRAIN School, Les Houches, France on March 10-14, 2008.
- **Invited Talks**
 - at AViRS 2008 (Analyse Video pour le Renseignement et la Sécurité, Paris, April 2008),
 - at THEMIS 2008 (Tracking Humans for the Evaluation of their Motion in Image Sequences, part of BMVC 2008, Leeds, Sept. 2008) and
 - at VS 2008 (Visual Surveillance workshop, part of ECCV 2008, Marseille, Oct. 2008).
- **Seminar Organizer** for a GdR-ISIS day (Intelligent Video Surveillance, Paris, 17 December 2008).
- **EC INFSO Expert** for in the framework of Ambient Assisted Living FP7 (HERMES project).
- **ANR Expert** for the 2008 edition of Project Call: "Concepts Systèmes et Outils pour la Sécurité Globale".
- **Reviewer** for the PhD defense of Mr Claudio Piciarelli at Udine University (Italy).
- **Area chair** of the 6th IEEE International Conference on Advanced Video and Signal Based Surveillance, AVSS'09, Genoa, Italy, September 2-4, 2009.
- **Program Committee** member of M2SFA2 2008 ECCV Workshop on Multi-camera and Multi-modal Sensor Fusion, ICVS 2008-2009 International Conference on Computer Vision Systems, VNBA 2008 ACM International Workshop on Vision Networks for Behavior Analysis, AVSS 2008 IEEE Conference on Advanced Video and Signal based Surveillance, VS 2008 The Eighth IEEE International Workshop on Visual Surveillance, IWVAC 2009 3th

International Work Conference on the Interplay between Natural and Artificial Computation, and BMVC 2008 British Machine Vision Conference.

- **Reviewer** for the journals: PAMI Transactions on Pattern Analysis and Machine Intelligence, CVIU Computer Vision and Image Understanding, PR Pattern Recognition, Transactions on Systems Man and Cybernetics, IJPRAI International Journal of Pattern Recognition and Artificial Intelligence, MVA Machine Vision and Applications Journal, IMAVIS Image and Vision Computing, The Open Cybernetics and Systemics Journal, JPRR Journal of Pattern Recognition Research, IVP EURASIP Journal on Image and Video Processing, IEEE Transactions on Multimedia, TKDE Transactions on Knowledge and Data Engineering, MEP Medical Engineering and Physics, IET Computer Vision, and Artificial Intelligence Journal.
- **Reviewer** for the conferences and workshops: CVPR 2008-2009 Computer Vision and Pattern Recognition, INDIN 2008 6th IEEE International Conference on Industrial Informatics.