Curriculum Vitæ

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PERSONAL DATA

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1 INTRODUCTION

1.1 Motivation and Organization

This curriculum vitæ (CV) has been created to apply for a Full Professor position in the area of Telecommunications at the Electrical and Computer Department of Instituto Superior Técnico, Universidade de Lisboa, published on Edital nº 1455/2019, Diário da República, 2ª série, Nº 240, December 13, 2019. This document is organized in five sections with the following content:

Section 1: This section introduces and summarizes my academic, scientific and professional careers and includes a brief description of my vision regarding the academic and research components of my career as well as their interactions, since these are the fundamental activities of a university professor.

Sections 2 to 6: These sections answer to the requests expressed in the tender referred above. Each of these sections targets:

- ***Studies and Positions (Section 2):*** includes (i) biographic data; (ii) academic degrees; (iii) academic positions; (iv) research positions; and (v) professional and scientific organizations.

- ***Academic Activities (Section 3):*** includes (i) teaching in Portugal; (ii) teaching abroad; (iii) academic contents; (iv) student inquiries; (v) academic awards and recognitions; and (vi) scientific supervisions at various levels.

- ***Research Activities (Section 4):*** includes (i) context and research interests; (ii) collaborations; (iii) awards and scientific recognitions; (iv) project participation and coordination; (v) evaluation and audit of projects; (vi) national and international standardization activities; (vii) invited talks and panels; (viii) editorial roles; (ix) patents; (x) publications; (xi) conference talks and communications; (xii) technical reports; and (xiii) some statistics.

- ***Knowledge Transfer (Section 5):*** includes (i) short courses and tutorials; (ii) conferences and other events organization; (iii) reviewing of papers for journals and conferences; and (iv) publicly available applications and datasets.

- ***University Management (Section 6):*** includes (i) positions at school and research institute boards; (ii) M.Sc. juries; (iii) Ph.D. juries; (iv) habilitation juries abroad; and (v) academic juries.

The documents referring to this tender, including this curriculum, are available at http://www.img.lx.it.pt/~fp/Tender2019/Tender_FP_2019.htm

Along this document, the facts and events are presented in chronological order, usually by growing order.

1.2 Context

This document presents the most relevant activities developed between October 1985 and the present date, notably as a member of the following institutions:

- **1985 – Now** – Electrical and Computer Engineering Department, Telecommunications Scientific Area, from Instituto Superior Técnico, as part of the teaching staff since October 1985, notably as Stage Assistant from 1985 to 1988; Assistant from 1988 to 1991; Auxiliary Professor from 1991 to 2000; Associate Professor from 2000 to 2003; and Associate Professor with Habilitation since 2003.

- **1985 – 1993** - Centro de Análise e Processamento de Sinais, Universidade Ténica de Lisboa (CAPS-UTL) at Complexo 1 from Instituto Nacional de Investigação Científica (INIC), as a researcher from 1985 to 1993.

- **1993 – Now** - Instituto de Telecomunicações (IT), Lisbon site, as a researcher since 1993 (Senior Researcher since 2002) integrated in the Image Group until 2009 and the Multimedia Signal Processing Group since 2009.

Some of the work reported in this document has been partially developed during my stages at the following international institutions:

- *Centro Studi E Laboratori Telecomunicazioni* (CSELT), Torino, Italy, between June 1988 and August 1991, under the supervision of Dr. Leonardo Chiariglione, developing research in the field of efficient (digital) video coding which was, at the time, an emerging research topic at world level.

- *Universidade Federal do Rio de Janeiro* (UFRJ), Rio de Janeiro, Brazil, between September 2013 and August 2014, in collaboration with Prof. Eduardo da Silva, developing research in the field of efficient representation of plenoptic visual information, notably light fields.

1.3 Academic and Research Perspectives

1.3.1 Academic

Since 1984, I have been developing my academic career at IST, starting as Monitor at the Statistics course, while I was completing my graduation in Electrical and Computer Engineering. In 1985, I start focusing my academic activity in the Telecommunications domain at the Electrical and Computer Engineering Department. At the start, I lectured several courses in the area of telecommunication systems and telephone switching and, later, I focused in the field of multimedia communications, especially coding of visual signals. Along the years, I always lectured at IST, excluding a few experiences of lecturing abroad (at least for a significant time) in Spain, Austria and Brazil that will be presented later.

I consider that the main role of a university professor is motivating, creating enthusiasm, launching challenges, guiding, inspiring and creating in the students a sense of responsibility. These are not easy objectives nowadays but are certainly the added value that a professor may offer in a classroom regarding the enormous amount of information that is nowadays easily available to the students. It is this 'positive energy' that a professor must transmit to his/her students which, together with his/her personal experience, must bring the students to the lectures and justify their presence in the classroom. This is a role that the new technologies, even the most sophisticated, cannot accomplish and the eternal reason to have live lectures. Naturally, these lectures must involve the students in interactive models and become different from the past 'preaching' models. Because, in fact, the students have at their disposal a growing panoply of information technology devices and applications such as online videos, web pages, smart boards, massive open online courses (MOOCs), etc. These emerging technologies certainly bring added value, notably in allowing easy access to the information, but they may hardly substitute the presence and role of a professor in a classroom to create interest and enthusiasm, stimulate curiosity and creativity, develop critical thinking and logical reasoning, etc.

As a professor in a field of accelerated change as are multimedia technologies nowadays, it is essential that learning is centered on the fundamental concepts, tools and associated systems, before the specific solutions that, at each moment in time, solve the problems. Only in this way it is possible that the new engineers are ready to face the speedy technological evolution that creates new solutions every single day. Naturally, a solid basic formation should facilitate and boost the learning processes, notably by raising the abstraction level that allows to think beyond the 'immediate'.

However, since we are speaking of engineering, this means 'the art of doing', it is also essential 'to see, to believe' and 'to do, to learn', thus creating (practical) experiences. In this context, the concepts must, whenever possible, 'gain reality' to launch bridges to the real world. This aspect is even more critical when teaching multimedia technologies since most signals may be 'seen' and 'heard'. In this multimedia world, the results of algorithms and systems may be visualized or heard and thus the concepts and algorithms gain life and enter the eyes and hears of the students, if it is given them the chance to experiment in a

laboratory environment. It is this experimentation that may give the students the connection between the theories and concepts with the practice and the solutions, thus allowing a deeper understanding. For this reason, along the years, I have been complementing the theoretical lectures with practical lectures and laboratory sessions to 'close the circle of understanding'.

Naturally, with time, some of the research activities must gain the necessary maturity to be integrated in the teaching activities, thus renovating and modernizing the courses in order the students are better prepared for the continuously evolving outside world. This process shall establish synergies between research and teaching, which is an essential double-target in a school of excellence.

As a final word, I would like to stress that I see teaching in the context of relations between people, here teachers and students that are jointly leaving an experience. Teaching should not exist disconnected from those persons but should rather happen with those persons. The teacher has the duty to teach but also to respect, help, stimulate, encourage, understand, listen, etc. Only in this way the students may learn and not simply memorize information that will vanish soon. My best example of this attitude is the decision taken many years ago to know the names of all my students, to be able to call them individually by their names, whatever the number of students. This is an easy task if we really want to do it since the names soon become real persons with a face and not just a name on a list. This attitude has been immediately recognized by the students as a sign of respect and rewarded with a deeper relation what is certainly very important for the learning process, especially for the students with more learning difficulties, more shy, etc.

1.3.2 Research

My research (scientific) interests are in the field of visual information processing and representation, and multimedia applications, notably in the following areas:

- Visual information analysis and processing

- Visual information segmentation

- Visual information coding

- Visual information description, retrieval and summarization

- Visual information adaptation for heterogeneous environments

- Multimedia applications functionalities and requirements

- Standardization of representation methods for multimedia information

- Evolution strategies for multimedia applications

While the visual information modalities were initially image and video, along the years they have been extended to light fields, point clouds, meshes and holographic data, as it may be seen in the list of publications.

Along the years, I had/have a very intense participation in standardization committees in the area of multimedia representation, notably in the context of the ISO/IEC MPEG (Moving Picture Experts Group) and ISO/IEC/ITU-T JPEG (Joint Photographic Experts Group) committees. The reasons for this participation are explained in detail in the accompanying document with the Scientific and Academic Project.

1.4 Summary

The following list summarizes the main facts and events of my career that will be detailed in Sections 2 to 6; they refer to the period from 1985 to the present.

Academic

- Teaching of several courses in the area of telecommunications and multimedia processing.

- Creation in 1993 of one of the first courses in the world addressing visual representation with the title of 'Image Communication'.

- Creation of the pedagogical contents which support the various courses taught.

- Classification as 'Excellent Professor' is almost all the courses taught since this classification by the students exists at IST.

- Supervision of 13 Ph.D. Thesis, 8 in co-supervision, 9 concluded and 4 ongoing.

- Supervision of 45 M.Sc. Thesis, 12 pre-Bologna at IST, 31 post-Bologna at IST and 2 outside IST.

- Supervision of 19 Final Graduation Projects.

- Winner of the 'Professor de Elite QUC' Awards given by the Electrical and Computer Engineering Department based on student scores in 2008/2009, 2009/2010 e 2010/2011 (the years the award existed).

Research and Standardization

- Scientific contributions in the areas of image and video segmentation, description, summarization, denoising, attention modeling, coding and quality assessment.

- 3 edited books and 22 book chapters.

- Scientific publications in 8 book chapters and 79 international journal papers (23 invited).

- Scientific publications in 190 international conference papers.

- 111 invited talks (79 international), 43 as international conference plenary/keynote speaker.

- Researcher in 29 projects, 10 national, 11 European and 8 from other types.

Knowledge Transfer

- Participation in the organizing committees of several tens of international conferences and workshops.

- General Chair and Technical Program Chair of many of the main conferences and workshops in the field of image and video processing, notably IEEE International Conference on Image Processing (ICIP), Picture Coding Symposium (PCS), Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS), IEEE Int. Workshop on Multimedia Signal Processing (MMSP), Int. Conference on Quality of Multimedia Experience (QoMEX), Visual Communications and Image Processing Conference (VCIP) and Int. Workshop on Very Low Bitrate Video Coding (VLVB).

- General Chair of the conferences and workshops Picture Coding Symposium (PCS), Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS) and Int. Conference on Quality of Multimedia Experience (QoMEX) held in Lisbon, Portugal.

International Recognition

- Fellow of the Institute of Electrical and Electronics Engineers (IEEE) since 2008 for "contributions to object-based digital video representation technologies and standards".

- Fellow of the European Signal Processing Association (EURASIP) since 2013 for "contributions to digital video representation technologies and standards".

- Fellow of the Institute of Engineering and Technology (IET) since 2015.

- IEEE Distinguished Lecturer in 2005.

- Vice-President of the IEEE Signal Processing Society (SPS) for a 3-year mandate, 2018-2020.

- Elected member of the Board of Governors of the IEEE Signal Processing Society (SPS) in the periods 2012 and 2014-2016.

- Elected member of the Board of Directors of the European Signal Processing Association (EURASIP) for a 4-year mandate, 2015-2018.

- Editor-in-Chief of the IEEE Journal of Selected Topics in Signal Processing, January 2013 - December 2015.

- Associated Editor of the IEEE Transactions on Image Processing, IEEE Transactions on Multimedia, IEEE Transactions on Circuits and Systems for Video Technology, Signal Processing Magazine, Signal Processing: Image Communication, and Journal of Image and Video Processing.

- Chair of the MPEG and JPEG Requirements Subgroups; only expert who has ever been subgroup chair at both the main standardization committees in the multimedia representation field.

- Member of 63 Ph.D. juries, 14 in Portugal and 47 abroad.

- Winner of the First IBM Scientific Award in Portugal.

2 STUDIES AND POSITIONS

This section includes the most relevant information regarding studies and positions taken over the years.

2.1 Biographic Data

- Born in Vermelha - Cadaval (Portugal), October 27, 1962.

- Son of Edmundo Ferreira Pereira and Maria Zulmira Clara Bernardo.

- Single.

- Mobile: 919236706.

- Fixed: 218418460.

- Fax: 218418472.

- E-mail: Fernando.Pereira@lx.it.pt, fp@lx.it.pt.

- Mother tongue: Portuguese.

- Fluent in Italian, English and French.

2.2 Academic Degrees

1979   Curso Geral dos Liceus, Liceu Nacional de Gil Vicente, Lisboa, 1979, with the final average score of 18/20.

1985   Graduation in Electrical and Computer Engineering, Telecommunications and Electronics profile, Instituto Superior Técnico, Universidade Técnica de Lisboa, 1985, with the final average score of 17/20.

1988   M.Sc. in Electrical and Computer Engineering, Telecommunications and Computers profile, Instituto Superior Técnico, Universidade Técnica de Lisboa, with a Thesis entitled "Redução de redundância e resistência a erros em telecópia", under the supervision of Prof. Carlos Salema from Instituto Superior Técnico, approved with the final score of 'Very Good', July 1988. This Thesis studied the compression efficiency and error resilience performance of facsimile

standard coding solutions.

1981 Ph.D. in Electrical and Computer Engineering, Instituto Superior Técnico, Universidade Técnica de Lisboa, with a Thesis entitled "Variable bit rate video coding", under the supervision of Prof. Carlos Salema from Instituto Superior Técnico and Dr. Leonardo Chiariglione from CSELT (Italy), approved with the final score of 'Aprovado com Distinção e Louvor', July 1991. This Thesis proposed efficient video coding algorithms for Asynchronous Transfer Mode (ATM) environments.

2003 Habilitation (unanimously) in Electrical and Computer Engineering, Instituto Superior Técnico, May 2003.

2.3 Academic Positions

All my career has been developed in the following academic positions:

1984 - 1985 Monitor at Statistics and Application Section, Mathematics Department, October 1984 to September 1985.

1985 - 1988 Auxiliary Assistant at Telecommunications Section, Electrical and Computer Engineering Department, Instituto Superior Técnico, October 1985 to July 1988.

1988 - 1991 Assistant at Telecommunications Section, Electrical and Computer Department, Instituto Superior Técnico, July 1988 to July 1991.

1991 - 2000 Auxiliary Professor at Telecommunications Section, Electrical and Computer Department, Instituto Superior Técnico, full time, July 1991 to September 2000.

1995 Approved in absolute merit as Associate Professor, Telecommunications Section, Electrical and Computer Department, Instituto Superior Técnico, October 1995.

1996 Definitive Nomination (Tenure) as Professor, Telecommunications Section, Electrical and Computer Departament, Instituto Superior Técnico, July 1996.

2000 Associate Professor, Telecommunications Section, Electrical and Computer Department, Instituto Superior Técnico, full time, September 2000 to May 2003.

2003 - Now Associate Professor with Habilitation, Telecommunications Section, Electrical and Computer Department, Instituto Superior Técnico, full time, since May

2003.

2013/2014   Invited Full Professor, Universidade Federal do Rio de Janeiro, Brazil, 2013/2014.

During my career, I benefited from three sabbatical licenses:

- Sabbatical license in 1997/98 to work on the design and implementation of advanced algorithms for the efficient representation of visual information and the supervision of M.Sc. and Ph.D. students in this field.

- Sabbatical license in 2004/05 to work on the design and implementation of advanced algorithms for the efficient representation and adaptation of visual information and the supervision of M.Sc. and Ph.D. students in this field.

- Sabbatical license in 2013/14 to work on the design and implementation of advanced algorithms for the efficient representation and coding of plenoptic imaging information, notably light fields and point clouds, and the supervision of M.Sc. and Ph.D. students in this field.

  This sabbatical happened at Universidade Federal do Rio de Janeiro (Brazil), where I have been Invited Full Professor, and lectured a course on *Image Compression* at the Electrical Engineering Post-Graduation.

2.4   Research Positions

1985-1993   Researcher at Centro de Análise e Processamento de Sinais da Universidade Técnica de Lisboa (CAPS-UTL), Complexo 1 from Instituto Nacional de Investigação Científica (INIC), Instituto Superior Técnico, to develop activity in the field of digital bilevel images, color images and video coding.

1988-1991   Researcher at Centro Studi e Laboratori Telecomunicazioni (CSELT), Torino, Italy, under the supervision of Dr. Leonardo Chiariglione, with the goal to develop my Ph.D. Thesis in the field of efficient video coding for asynchronous transmission environments. During this period, I benefited from a Ph.D. scholarship from Junta Nacional de Investigação Científica e Tecnológica, Portugal.

1993-2004   Researcher at Image Group, Instituto de Telecomunicações, Lisbon site. During this period, I was responsible for the Image Group.

2002-presente   Senior Researcher at Multimedia Signal Processing Group, Instituto de Telecomunicações, Lisbon site. During this period, I was responsible for the

Multimedia Signal Processing Group most of the years.

2.5 Professional and Scientific Organizations

2.5.1 National

- Portuguese Delegate at the Moving Picture Experts Group (MPEG) from the International Standards Organization (ISO) and the International Electrotechnical Commission (IEC), 1995 – present.

- President of the National Technical Committee on Image, Audio and Multimedia Information on behalf of Instituto Superior Técnico, September 1991 - 2000.

- Member of the National Secretariat for the Audiovisual on behalf of the Secretaria de Estado da Ciência e Tecnologia, 1993/94.

- Senior Member of the Ordem dos Engenheiros (27628), Telecommunications expert, since 1999.

- Coordinator of the Telecommunications Specialization from Ordem dos Engenheiros, 1999 - 2005.

- Portuguese Delegate at the Joint Picture Experts Group (JPEG) from the International Standards Organization (ISO), the International Electrotechnical Commission (IEC) and International Telecommunications Union – Telecommunications (ITU-T), 2015 – present.

- President of the Technical Committee on Image, Audio and Multimedia Information (CT 120) on behalf of Instituto Superior Técnico, since May 2017.

2.5.2 International

ISO/IEC

- Requirements Subgroup Chair at the Moving Pictures Experts Group (MPEG) between March 2002 and March 2003 and again between January 2005 and July 2007.

- Requirements Subgroup Chair at the Joint Pictures Experts Group (JPEG), since February 2016.

  Only expert up to now who has been subgroup chair at both MPEG and JPEG, naturally at different periods in time.

IEEE

- Member (M8847972) of the Institute of Electrical and Electronics Engineers (IEEE); Senior Member since April 1999.

- Fellow of the IEEE for "contributions to object-based digital video representation technologies and standards", 2008.

- IEEE Distinguished Lecturer in 2005.

- Elected Member of the IEEE Signal Processing Society Image, Video and Multidimensional Signal Processing (IVMSP) Technical Committee, January 2004 - December 2009 and January 2016 – December 2018.

- Elected Member of the IEEE Signal Processing Society Multimedia Signal Processing (MMSP) Technical Committee, January 2006 - December 2008 and January 2011 – December 2013.

- Elected and after Honorary Member of the IEEE Circuits and Systems Society Visual Signal Processing and Communications (VSPC) Technical Committee, since June 2007.

- Elected Member of the IEEE Circuits and Systems Society Multimedia Systems and Applications (MSA) Technical Committee, since June 2008.

- Certificate of Merit from IEEE 'for dedication and leadership in organizing the 2010 IEEE International Conference on Image Processing (ICIP)', September 2010.

- Elected Member-at-Large of the IEEE Signal Processing Society Board of Governors for a 1-year mandate, 2012.

- Elected Member-at-Large of the IEEE Signal Processing Society Board of Governors for a 3-year mandate, 2014-2016.

- Certificate of Merit from IEEE 'for dedication and leadership in organizing the 2016 IEEE International Conference on Image Processing (ICIP)', September 2016.

- Elected Member of the IEEE Signal Processing Society Awards Board for a 3-year mandate in 2017-2019 (resigned after 1 year due to the incompatibility with the role of IEEE Signal Processing Society Vice-President for Conferences for which has been meanwhile elected).

- Elected IEEE Signal Processing Society Vice-President for Conferences for a 3-year mandate, 2018-2020.

This role has led to a large personal international exposition and to the possibility to have a large impact on the evolution of some of the largest international conferences in the fields of signal, audio, video and multimedia processing, notably the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) and the IEEE International Conference on Image Processing (ICIP).

Other Organizations

- Member of the IEE Visual Information Engineering Technical Advisory Panel, November 2003

- Fellow of the European Signal Processing Association (EURASIP) for "contributions to digital video representation technologies and standards", 2013.

- Member of the Special Area Team (SAT) Visual Information Processing from EURASIP since 2015.

- Elected member of the EURASIP Board of Directors for a 4-year mandate, 2015-2018.

- Fellow of the Institute of Engineering and Technology (IET), October 2015**.**

- Member of the EURASIP Fellows Committee, since 2019.

3 ACADEMIC ACTIVITIES

This section includes the most relevant information regarding my academic activities.

Differently from the first years of my academic career, in the most recent years I have been lecturing only courses in the field of multimedia communications since this topic has entered the list of courses of a few graduations and the number of students has also grown (this has changed recently for multiple reasons, mostly orthogonal to the courses themselves). This lecturing has happened at both IST campus, notably Alameda and Tagus-Park.

The assessment of the courses made by the students with IST-controlled inquiries has shown that I have been highly scored by the students, notably with continuous classifications as 'IST Excellent Professor' although the courses are also considered rather demanding as mentioned in the annual reports provided by the student's representatives.

3.1 Teaching in Portugal

- *'Probabilidades e Estatística' (Probabilites and Statistics),* Statistics and Applications Section, Mathematics Department, Instituto Superior Técnico, 1984/85 (as Monitor).

- *'Sistemas de Telecomunicações II' (Telecommunication Systems II),* Electrical and Computer Engineering graduation, Telecommunication and Electronics profile, Telecommunications Section, Electrical and Computer Engineering Department, Instituto Superior Técnico, 1985/86 and 1986/87.

- *'Comutação em Redes de Comunicação' (Switching in Communication Networks),* Electrical and Computer Engineering graduation, Telecommunication and Electronics profile, Telecommunications Section, Electrical and Computer Engineering Department, Instituto Superior Técnico, 1985/86 and 1986/87.

- *'Sistemas de Telecomunicações II' (Telecommunication Systems II),* Responsible Professor, Electrical and Computer Engineering graduation, Telecommunication and Electronics profile, Telecommunications Section, Electrical and Computer Engineering Department, Instituto Superior Técnico, 1991/92.

- *'Sistemas de Telecomunicações Integrados (Integrated Telecommunication Systems),* Responsible Professor, Electrical and Computer Engineering graduation, Systems and Computers profile, Telecommunications Section, Electrical and Computer Engineering Department, Instituto Superior Técnico, 1991/92.

- *'Sistemas de Telecomunicações' (Telecommunication Systems),* Creator and Responsible Professor, Electrical and Computer Engineering graduation, Electronic Systems and Computers profile, Telecommunications Section, Electrical and Computer Engineering Department, Instituto Superior Técnico, since its creation 1992/93 until 1998/1999.

- *'Comunicação de Imagem' (Image Communication),* Creator and Responsible Professor, Electrical and Computer Engineering graduation, Telecommunications and Electronics profile, Telecommunications Section, Electrical and Computer Engineering Department, Instituto Superior Técnico, since its creation in 1992/93 until 2001/2002 when this course was substituted by the 'Comunicação de Áudio e Vídeo' course.

  The 'Comunicação de Imagem' course has been delivered, first, as an optional course at the 5th year of the Electrical and Computer Engineering graduation, Telecommunications and Electronics also Electronic Systems and Computers profiles, from 1992/93 to 2000/2001.

  When it was created in 1992/93, the 'Comunicação de Imagem' course was a pioneer at world level in the field on digital image and video coding, which was only an emerging topic at that time, far from the very wide adoption that happened after.

- *'Comunicação de Áudio e Vídeo' (Audiovisual Communication),* Creator and Responsible Professor, Electrical and Computer Engineering graduation, and later Electrical and Computer Engineering M.Sc., Telecommunications Section, Electrical and Computer Engineering Department, Instituto Superior Técnico, since its creation in 2001/2002 up to now.

  In 2001/02, the 'Comunicação de Áudio e Vídeo' course has been included in the list of courses of the Telecommunications profile of the Electrical and Computer Engineering graduation.

  In 2001/2002, the 'Comunicação de Áudio e Vídeo' course was also included in the Electrical and Computer Engineering M.Sc. (pre-Bologna M.Sc.).

  In 2007/08, the 'Comunicação de Áudio e Vídeo' course has been integrated in the list of courses of the Telecommunications profile of the Electrical and Computer Engineering M.Sc.

  In 2012/2013, this course started being lectured in the 1st semester contrary to all previous years when was lectured in the 2nd semester.

  The evolution of the number of students along the years of the 'Comunicação de Imagem' and 'Comunicação de Áudio e Vídeo' courses at Alameda campus is shown in Figure 1. The oscillations along the years on the number of students are mainly related to external factors, notably if the Final Graduation Project was mandatory or not and

the related consequences on the number of courses to follow, and also to the overall set of courses offered each year since these were always optional courses.

Figure 1 – Evolution of the number of students in the 'Comunicação de Imagem' (1992/93 to 2000/01) and 'Comunicação de Áudio e Vídeo' (since 2001/02) courses at Alameda campus.
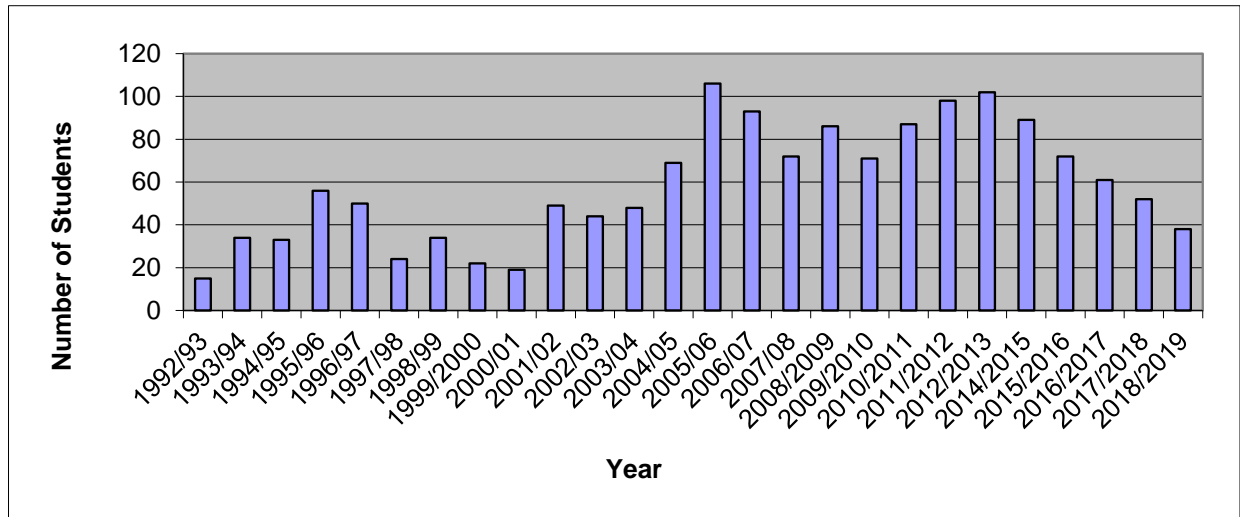
- *'Comunicação Multimédia' (Multimedia Communication),* Creator and Responsible Professor, Telecommunications and Informatics M.Sc., Telecommunications Section, Electrical and Computer Engineering Department, Instituto Superior Técnico, since its creation in 2012/2013 up to now; this course happens at the Tagus-Park campus.

The 'Comunicação Multimédia' course has been delivered for the first time to the Communication Networks M.Sc. in 2012/2013. This course had as immediate precedents the 'Comunicação de Imagem' and 'Comunicação de Áudio e Vídeo' in the Electrical and Computer Engineering M.SC. and Communication Networks M.Sc.

The 'Comunicação de Imagem' course has been offered for the first time as an optional course of the 5th year of the Electrical and Computer Engineering graduation, Telecommunications and Electronics profile as well as Electronic Systems and Computers profile, in 1992/93. This course has been offered until 2000/2002 and was then substituted by the 'Comunicação de Áudio e Vídeo' course.

At the Communication Network M.Sc., the 'Comunicação de Áudio e Vídeo' course has been offered for the first time in 2005/2006. In 2012/2013, it was substituted by the 'Comunicação Multimédia' course. This course continued to be offered when the Communication Network M.Sc. changed its name to Telecommunications and Informatics M.Sc.

In 2018/2019, the 'Comunicação Multimédia' course started to be also offered to the Electronics Engineering M.Sc. at Tagus-Park campus.

The evolution of the number of students along the years of the 'Comunicação de Áudio e Vídeo' and 'Comunicação Multimédia' courses at Tagus-Park campus is shown in Figure 2. The oscillations along the years on the number of students are mainly related to external factors, notably if the Final Graduation Project was mandatory or not and the related consequences on the number of courses to follow, and also to the overall set of courses offered each year since these were always optional courses.

Figure 2 – Evolution of the number of students at the 'Comunicação de Áudio e Vídeo' (2005/2006- 2012/2013) and 'Comunicação Multimédia' (after 2012-2013) courses at the Tagus-Park campus.
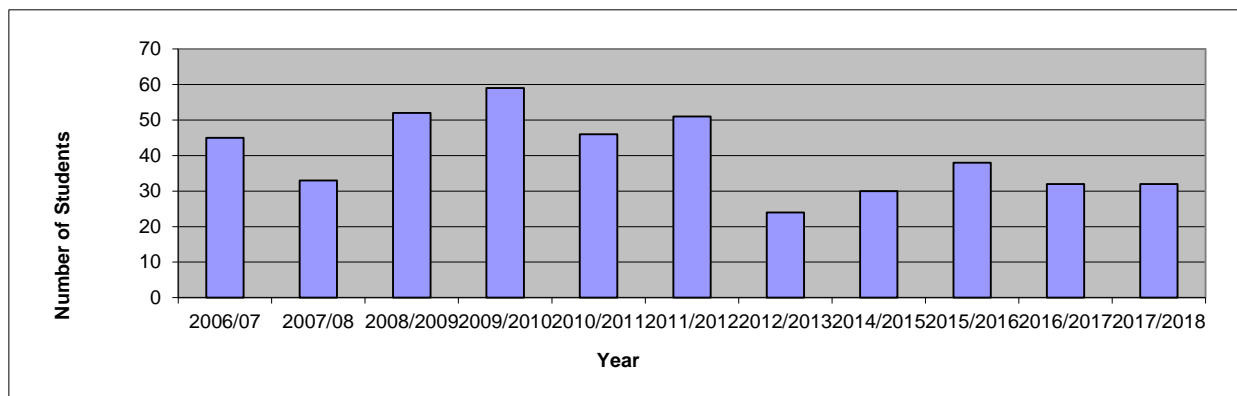
3.2 Teaching Abroad

- 'Audiovisual Compression: from Basics to Systems' as Invited Professor at Alpen-Adria-Universität Klagenfurt, Klagenfurt, Austria, October 2008.

- 'Advanced Topics on Multimedia Representation' as Invited Professor for the Master on Applications of Signal Processing in Communications, Universidade de Vigo, Vigo, Spain, November 2008, November 2009 and November 2010.

- 'Image Compression' as Invited Full Professor at Electrical Engineering Post-Graduation, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil, 2013-2014.

3.3 Academic Contents

- Support material for the 'Sistemas de Telecomunicações' course, Electrical and Computer Engineering graduation, Electronic Systems and Computers profile, Telecommunications Section, Electrical and Computer Engineering Department, Instituto Superior Técnico, notably slides for the theoretical lectures, laboratory guides and practical problems about:

  o *Basic telecommunications concepts*

- o *Radio communications systems*

- o *Satellite comumnication systems*

- o *Image communication*

- o *Communication networks*

- Support material for the 'Comunicação de Imagem', 'Comunicação de Áudio e Vídeo' and 'Comunicação Multimédia', Electrical and Computer Engineering M.Sc., Telecommunications and Informatics M.Sc., and Electronics M.Sc., Instituto Superior Técnico, notably slides for the theoretical lectures, laboratory guides and practical problems about:

  - o *Analogue TV*

  - o *Facsmilie*

  - o *Digital Photograhy*

  - o *Videotelephony and videoconference*

  - o *Digital TV*

  - o *Digital video storage*

  - o *Digital video broadcasting (DVB)*

  - o *Object-based multimedia services*

  - o *Advanced video coding*

  - o *HDTV and 4k TV*

  - o *3D video: concepts, tools and systems*

Considering the huge evolution of the multimedia representation technologies in the last three decades, the support material to the courses has been revised, improved and extended every single year in order to be always up to date. Moreover, the course syllabus themselves have been also evolving over the years. For example, while analogue TV and facsimile were topics in the nineties, this does not happen anymore with digital TV and 3D systems taking their place in the courses syllabus.

Currently the 'Comunicação de Áudio e Vídeo' and the 'Comunicação Multimédia' courses only consider digital multimedia representation and systems, from digital photography to 3D systems and including also personal communications, multimedia storage and multimedia broadcasting.

3.4 Student Inquiries

Table 1 shows the results of the inquiries to the students regarding the theoretical, practical and laboratory lectures for the courses lectured after 2010/2011 (since this is the information available at the IST database).

The classification scale is from 0 (lowest) to 9 (highest) and the scores in Table 1 correspond to the average of the following components: assiduity, punctuality, clarity in exposing, security in exposing, capacity to stimulate the interest, availability and development of reasoning and critical thinking.

Following the scores for the pedagogical assessment performed by the IST students shown in Table 1, I got the distinction of "IST Excellent Professor" in all the years considered. In the table, MEEC refers to the Electrical and Computer Engineering M.Sc., METI to the Telecommunications and Informatics M.Sc., and MERC to the Communication Networks M.Sc.

Table 1 – Pedagogical assessment scores available in the IST databases for the inquiries to the students in a [0, 9] scale.

Course	Yearo	Theoretical Lectures Assessment	Practical Lectures Assessment	Laboratory Lectures Assessment
Comunicação de Áudio e Vídeo, MEEC	2018/2019	9	9	9
Comunicação Multimédia, METI	2017/2018	Nd	Nd	Nd
Comunicação de Áudio e Vídeo, MEEC	2017/2018	9	9	9
Comunicação Multimédia, METI	2016/2017	8.88	8.94	8.88
Comunicação de Áudio e Vídeo, MEEC	2016/2017	9	9	9
Comunicação Multimédia, MERC	2015/2016	9	8.88	9
Comunicação de Áudio e Vídeo, MEEC	2015/2016	8.94	9	9
Comunicação Multimédia, MERC	2014/2015	9	9	9
Comunicação de Áudio e Vídeo, MEEC	2014/2015	9	9	9
2013/2014 Sabatic				
Comunicação Multimédia, MERC	2012/2013	8.88	9	Nd
Comunicação de Áudio e Vídeo, MEEC	2012/2013	9	9	9

Comunicação de Áudio e Vídeo, MERC	2011/2012	9	9	9
Comunicação de Áudio e Vídeo, MEEC	2011/2012	9	9	9
Comunicação de Áudio e Vídeo, MERC	2010/2011	9	NA	9
Comunicação de Áudio e Vídeo, MEEC	2010/2011	9	Nd	9

3.5 Academic Awards and Recognitions

- IST Excellent Professor according to the student scores obtained by the Pedagogical Board of Instituto Superior Técnico in all the courses lectured since 2006/2007 for which statistically relevant information was collected.

- 'Professor de Elite QUC' Award given by the Electrical and Computer Engineering Department based on student scores in 2008/2009, 2009/2010 e 2010/2011 (the years that the award existed).

3.6 Scientific Supervisions

3.6.1 Ph.D. Thesis at IST

Responsible for the supervision of the following Ph.D. Thesis:

1. "Video analysis for object-based coding and description", Paulo Luís Serras Lobato Correia, Instituto Superior Técnico, December 2002.

2. "Error resilience for advanced video coding systems", Luís Eduardo de Pinho Ducla Soares, Instituto Superior Técnico, April 2004.

3. "Rate control for object-based video coding", Paulo Jorge Lourenço Nunes, Instituto Superior Técnico, July 2007.

4. "Advances on efficient distributed video coding", João Miguel Duarte Ascenso, Instituto Superior Técnico, November 2010.

5. "Rate control in distributed video coding systems", Catarina Isabel Carvalheiro Brites, Instituto Superior Técnico, March 2011.

6. "Combining predictive and distributed video coding", Hoang Van Xiem, Instituto Superior Técnico, October 2015 (in co-supervision with Prof. João Ascenso, IST).

7. "Optimized coding strategies for interactive multiview video", Ana Karina De Abreu Goes, Instituto Superior Técnico, Dual Degree with École polytechnique fédérale de Lausanne (EPFL), Switzerland, October 2015 (in co-supervision with Prof. Pascal Frossard, EPFL, Switzerland).

8. "Light field based biometric recognition and presentation attack detection", Alireza Sepas-Moghaddam, Instituto Superior Técnico, January 2019 (in co-supervision with Prof. Paulo Lobato Correia, IST).

Currently, supervising the following Ph.D. students:

9. "Metrics for point cloud quality assessment", Alireza Javaheri, Instituto Superior Técnico (in co-supervision with Prof. João Ascenso, IST).

10. "Deep learning-based point cloud coding", André Guarda, Instituto Superior Técnico (in co-supervision with Prof. Nuno Rodrigues, Instituto Politécnico de Leiria).

3.6.2 Ph.D. Thesis outside IST

Responsible for the supervision of the following Ph.D. Thesis outside IST:

1. "Towards visualization and searching: a dual-purpose video coding approach", Renam Castro da Silva, Universidade Federal do Rio de Janeiro (UFRJ), Brazil, February 2018 (in co-supervision with Prof. Eduardo da Silva, UFRJ, Brazil).

Currently, supervising the following Ph.D. students outside IST:

2. "Light fields coding with hypercone-based prediction", Márcio Pereira, Universidade Federal do Rio de Janeiro (in co-supervision with Prof. Eduardo da Silva, UFRJ, Brazil).

3. "Light field coding using 4D transforms", Gustavo Alves, Universidade Federal do Rio de Janeiro (in co-supervision with Prof. Eduardo da Silva, UFRJ, Brazil).

3.6.3 Pre-Bologna M.Sc. Thesis at IST

Responsible for the supervision of the following Pre-Bologna M.Sc. Thesis at IST:

1. "Sistema de televisão de alta definição HD-MAC: codificação e sensibilidade a erros", Paulo David Pinto Simões, November 1993 ('Very Good' score).

2. "Classificação e codificação de contornos", Diogo Dias Cortez Ferreira, September 1995 ('Very Good' score).

3. "Detecção de fronteiras em imagens texturadas", Paulo Jorge Lourenço Nunes, November 1995 ('Very Good' score).

4. "Codificação de sequências videotelefónicas baseada em modelos", Pedro Miguel Damásio Geada, October 1996.

5. "Animação e síntese de faces humanas usando modelos tridimensionais", Gabriel Antunes Abrantes, December 1998.

6. "Modelo alternativo de complexidade para a norma MPEG-4 visual", João Manuel Malveiro Valentim, May 2001.

7. "Descrição e procura de vídeo baseadas na forma", Carla Raquel Faria Lopes Zibreira, July 2001.

8. "Universal access to multimedia content based on the MPEG-7 standard", João Miguel da Costa Magalhães, June 2002.

   The work developed in the context of this Thesis has obtained the Young Engineer Innovation Award from Ordem dos Engenheiros, Portugal, 2002.

9. "Codificação escalável de vídeo com elevada granularidade", João Miguel Duarte Ascenso, December 2003.

10. "Face detection and object tracking in the compressed domain", Pedro Miguel Ferreira dos Santos da Fonseca, May 2004.

11. "Extracção automática de texto a partir de vídeo", Duarte Manuel da Conceição Palma, July 2004.

12. "Advances on distributed video coding", Catarina Isabel Carvalheiro Brites, December 2005.

3.6.4 Post-Bologna M.Sc. Thesis at IST

Responsible for the supervision of the following Post-Bologna M.Sc. Thesis at IST:

1. "Generic video automatic summarization", Nuno Frederico Costa Ferreira de Matos, November 2007 (19/20 score).

2. "Compressed domain H.264/AVC shot detection", Hugo Santos Varandas, October 2008 (19/20 score).

3. "Low delay distributed video coding", António Miguel dos Santos Francês Tomé, November 2009 (17/20 score).

4. "Low complexity video coding for sensor networks", Miguel Calhau Guerreiro Contente, November 2009 (18/20 score).

5. "Tiling slideshow: an audiovisual presentation method for consumer photos", Bruno Alexandre Conde Tomás, November 2009 (18/20 score).

6. "H.264/AVC perceptually controlled video coding", Ana Sofia Clemente Cabrita, July 2010 (15/20 score).

7. "Audiovisual coding simulation framework", Pedro Alexandre Oliveira Fernandes, October 2010 (19/20 score).

8. "Inpainting-based image coding: a patch-driven approach", Nuno Miguel Ventura Couto, November 2010 (18/20 score).

9. "H.264/AVC video coding: analysis and encoder control", Berto Oliveira Casquinha, November 2010 (17/20 score).

10. "Depth coding for multi-view plus depth 3D video", Gonçalo Nuno Silva do Carmo, November 2010 (17/20 score).

11. "Advances on transforms for high efficiency video coding", Miguel Lobato de Faria Pereira Capelo, April 2011 (17/20 score).

12. "Perceptual error protection using distributed video coding principles", André Seixas Dias, March 2013 (19/20 score).

13. "Distributed video coding with geometric transforms", Pedro André Faria Monteiro, March 2013 (18/20 score).

14. "Bit-depth scalable video coding", Vasco Eduardo Hungria dos Santos Nascimento, April 2013 (17/20 score).

15. "2D image rendering for 3D holoscopic content using disparity-assisted patch blending", João Filipe Oliveira Lino, November 2013 (16/20 score).

16. "Statistical reconstruction for predictive video coding", Vitor Hugo Nunes Gomes, June 2014 (16/20 score).

17. "HEVC cross segment decoding: decoders should work more", Alexandre da Silva Pratas Gabriel, November 2015 (17/20 score).

18. "Holographic information coding", José Pedro Quadrilheiro Peixeiro, April 2016 (19/20 score).

19. "Light field based 360º panoramas", André Alexandre Rodrigues Oliveira, November 2016 (16/20 score).

20. "Automatic detection of commercial blocks in broadcast TV content", Alexandre Ferreira Gomes, November 2016 (18/20 score).

21. "Omnidirectional video: adaptive coding based on saliency", Guilherme Filipe Gonçalves Luz, May 2017 (18/20 score).

22. "Extracting distinctive features from light-field images", José Abecasis Teixeira, May 2017 (18/20 score).

23. "Dynamic 3D point cloud compression", Miguel Branco Roque Nazaré Ferreira, November 2017 (15/20 score).

24. "Light field imaging coding", João Garrote, November 2017 (17/20 score).

25. "Graph-based point cloud compression, Paulo Rente, November 2017 (19/20 score).

26. "Objective quality assessment of 3D synthesized views", Luís Nunes, November 2017 (15/20 score).

27. "Ultra-narrow band satellite visual monitoring of high-sea fishing vessels", Pedro Perdigão, June 2018 (18/20 score).

28. "Adaptive plane projection for video-based point cloud coding", Eurico Manuel Rodrigues Lopes, November 2018 (18/20 score).

29. "Improved patch packing solutions for the MPEG V-PCC standard", Afonso Barroso Costa, June 2019 (17/20 score).

30. "Performance assessment of deep learning based image codecs", Filipe Maria Ferreira, November 2019 (15/20 score).

31. "End-to-end image compression optimization with deep neural networks", Paulo Miguel Ribeiro Eusébio, November 2019 (18/20 score).

3.6.5 M. Sc. Thesis outside IST

Responsible for the supervision of the following M.Sc. Thesis outside IST:

1. "Comparative performance of HEVC-based codecs for static linearly-arranged light fields", Luiz Gustavo Cardoso Tavares, September 2016 (co-supervision with Prof. Eduardo da Silva, UFRJ, Brazil).

2. "A 4-D discrete cosine transform-based light field coding solution", Gustavo de Oliveira e Alves, March 2019 (co-supervision with Prof. Eduardo da Silva, UFRJ, Brazil).

3.6.6 Final Graduation Projects at IST

Responsible for the supervision of the following Final Graduation Projects at IST:

1. "Codificação videotelefónica para comunicações móveis", Diogo Dias Cortez Ferreira and Paulo Jorge Lourenço Nunes, 1991/92.

2. "Codificação videotelefónica para comunicações móveis usando técnicas de segmentação", Mário Jorge Macedo Pimentel and Manuel Sanssen Valadas Preto, 1991/92.

3. "Descodificação e visualização de cartas meteorológicas radiodifundidas", Carlos Ferreira Borges, José António Pereira Velez and António Hermínio Morais, 1991/92.

4. "Desempenho de codecs videotelefónicos CCITT H.261 na presença de erros", Vitor Marques and Carlos Arede, 1992/93 (in collaboration with TLP).

5. "Objectos multimédia interactivos", Luís Miguel Manso and José Augusto Rodrigues, 1992/93.

6. "Equipamentos e redes de videoconferência", Rui Jorge Coutinho, José Carlos Aleixo and Jorge Oliveira, 1992/93 (in collaboration with TLP).

7. "Simulação de uma comunicação audiovisual móvel", Paulo Jorge Corado and João Manuel Maia, 1993/94.

8. "MPEG-1: codificação de vídeo para gravação", Pedro Moreira Figueira Ortigão and Sara Maria Pinto Carrasqueiro, 1994/95.

9. "Codificação de videotelefonia para a rede telefónica", Paulo Pires de Melo and Nuno Filipe dos Santos Ribeiro, 1994/95.

10. "Síntese interactiva de faces humanas", Bruno Lourenço Trindade and Mário Augusto Ferreira Godinho, ano lectivo de 1995/96 (in collaboration with Polícia Judiciária).

11. "Tecnologias para criação de conteúdo visual MPEG-4", Miguel Alexandre Farinha Cabral and Rui Filipe Efigénio Gomes, 1996/97.

12. "Sistema de simulação para codificação de imagem", Pedro Alexandre Oliveira Fernandes, 1996/97.

13. "Indexação de vídeo com base no conteúdo", Carla Raquel Faria Lopes Zibreira, Eva Lúcia di Martino Serafim and Mónica Alexandra Simões dos Santos, 1997/98.

14. "Reconhecimento automático de faces humanas", João Manuel Malveiro Valentim and João Miguel Duarte Ascenso, 1997/98.

15. "Resiliência a erros para comunicações móveis de vídeo baseadas na norma H.263+", João Miguel Ribeiro Galhordas and Wilfrid Salvador Manhente, 1999/2000.

16. "Sumarização automática de vídeo", Pedro Miguel Ferreira dos Santos da Fonseca and Tiago Filipe Rodrigues de Carvalho, 2001/2002.

17. "Segurança baseada no reconhecimento de faces", Filipe Castro Fonseca Lopes and João Araújo Fonseca, 2002/2003.

18. "Attention based image to video transmoding", Pedro Pinho and Joel Baltazar, 2004/2005.

19. "Low complexity MPEG-4 AVC encoding", Ricardo José Cipriano Almeida, 2005/2006.

3.6.7 Post-Docs at IST

1. Matteo Naccari in the field of perceptual video coding and design of new video perception models for efficient coding, May 2009 - September 2011.

3.6.8 Various Stages

1. Gianluca Cernigliaro from Universidad Politécnica de Madrid, Madrid, Spain, in multiview video coding, 2010.

2. Roberto Cesco Fabbro from Universitá di Udine, Italy, in distributed video coding, 2011.

3. Matteo Salmistraro from Technical University of Denmark, Copenhagen, Denmark, in distributed multiview video coding, 2013.

3.6.9 ERASMUS Program

1. Xavier Marichal, "Universal entropy coding of segmentation trees", Interchange with Université Catholique de Louvain, Belgium, 1995.

2. Nicola Piludu, "Implementation, comparison and evaluation of video shot detection algorithms", Interchange with Università Degli Studi Di Cagliari, Italy, 2004.

3. Roberto di Pompeo, "Review, implementation and evaluation of keyframe extraction algorithms", Interchange with Università Degli Studi Di Cagliari, Italy, 2004.

4. Andrea Putzu, "Audiovisual Generic Summarization System", Interchange with Università Degli Studi Di Cagliari, Italy, 2006.

5. Monika Maria Ziolkowska, "Scalable Distributed Video Coding", Interchange with Politechnika Warszawska, Poland, 2007.

6. Alice Orlich, "Implementation, Comparison and Evaluation of Error Concealment Tools for the H.264/AVC Video Coding Standard", Interchange with Università Degli Studi Di Cagliari, Italy, 2007.

4   RESEARCH ACTIVITIES

This section includes the most relevant information about research activities.

4.1   Context and Research Interests

After concluding my graduation on Electrical and Computer Engineering in 1985, I decided to do my M.Sc. in the same field, now with focus on telecommunications, more specifically on the emerging domain of digital image and video communication. My M.Sc. Thesis was developed in the area of bi-level image coding where I implemented the CCITT Group 3 and Group 4 bi-level image coding standard algorithms in a Texas Instruments TMS320 digital signal processor (DSP), which was then the fastest DSP on the market. This project has definitively marked my entrance in multimedia world, notably in the domain of efficient visual information representation.

Still before discussing my M.Sc. Thesis, I found myself, in June 1988, in Torino, Italy, more specifically at Centro Studi E Laboratori Telecomunicazioni (CSELT), at that time the research center for the main Italian telecom operator. The goal was to start my Ph.D. in the emerging field of digital video coding, a very hot topic in 1988. The selection of this research center for my Ph.D. (when Italy was clearly not a common destination for Portuguese Ph.D. students) was closely related to the fact that the leader of the team where I should be integrated was Dr. Leonardo Chiariglione, an emerging (not to say dominating) personality in the field of multimedia representation standardization for the three decades to come; in fact, Dr. Chiariglione is still nowadays a (the ?) major player in this field.

Precisely in 1988, the Moving Picture Experts Group (MPEG) was created under the auspices of the International Standards Organization (ISO) and the International Electrotechnical Commission (IEC), and the leadership of Dr. Leonardo Chiariglione. Along the following decades, the MPEG video and audio coding standards would change the world, not only from the media technologies point of view but also from a social point of view, following the huge success of multiple services and applications based on MPEG standards, notably digital music, digital TV, DVD, Internet and mobile streaming.

Due to this context, I have been personally with MPEG since the very early days and a large part of my Ph.D. work was driven by the MPEG objectives for video coding. In 1991, I participated, at CSELT, in the design and implementation of the first world prototype of a video decoder compliant with the MPEG-1 Video standard, targeting the storage of digital video, coded at around 1.1 Mbit/s, in Compact Discs (CD) and Winchester discs.

The MPEG connection is going to have a large impact in all my scientific career. Since 1992 (after my Ph.D. in 1991), I have been developing intense activity, at European and world

levels, in multiple research and development projects directly or indirectly connected to the standardization of multiple representation methods, where MPEG has become the reference.

Along the years, I assumed almost all roles within MPEG, notably the important role of MPEG Requirements Subgroup Chair. Later, after stopping my MPEG participation, I also become JPEG Requirements Subgroup Chair, making me the single person in the world who has both led MPEG and JPEG subgroups, naturally not at the same time.

This standardization intense participation has been very beneficial for my research activities and also for my academic activities since it has allowed the direct and privileged contact (as Requirements Chair) with the goals, processes and technologies of most of the world top companies and research institutions in the field of multimedia representation. This would certainly not have happened with the same intensity if I was not in that role.

However, strategically, I always tried to put my research topics a step ahead of the standardization topics, notably addressing the topics which would become standardization topics some years later or, alternatively, addressing non-normative tools for the standards under development, which standards need to be efficiently deployed. This has allowed me and my research team to avoid the very high speed of the normative standardization activities as well as working on less interesting 'optimization details' while focusing in unveiling the next technologies before they are relevant for standardization.

To avoid becoming too dependent on standardization activities, I have also had an intense involvement with other organizations, notably IEEE and EURASIP, especially in terms of journal editorships and conferences organization. This involvement has a more direct connection with my research activities in more fundamental topics, less standardization related. It is in this context that some of my research were born, notably video segmentation, distributed video coding, quality of experience assessment, and plenoptic data processing and coding.

4.2 Collaborations

Along the years, many national and international collaborations have been established in multiple forms, durations, topics and objectives. These collaborations were born in multiple contexts, notably European projects, international standardization groups, notably JPEG and MPEG, conferences, IEEE, etc. Some of them may have faded away from my memory but others, because of their duration or impact, may be easily listed:

1. Universitat Politècnica de Catalunya (UPC), Barcelona, Spain, Prof. Luis Torres, in object-based video coding and distributed video coding.

2. École polytechnique fédérale de Lausanne (EPFL), Lausanne, Switzerland, Prof. Touradj Ebrahimi, in visual representation, quality of experience and quality assessment.

3. Alpen-Adria-Universität Klagenfurt, Klagenfurt, Austria, Prof. Christian Timmerer, in standardization of visual representation methods.

4. Universidad Politécnica de Madrid (UPM), Madrid, Spain, Prof. Narciso Garcia, in multi-view video coding.

5. Universitá Degli Studi Di Brescia, Brescia, Italy, Prof. Riccardo Leonardi, in neural networks parameters coding.

6. Mitsubishi Electric Research Laboratories (MERL), Boston, USA, Dr. Anthony Vetro, in scalable video coding and point cloud coding.

7. University of Technology Sydney (UTS), Sydney, Australia, Prof. Ian Burnett, in standardization of metadata for visual information.

8. Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro, Brazil, Prof. Eduardo da Silva, in video coding, multi-view video coding and light field coding.

9. Instituto Politécnico de Leiria, Leiria, Portugal, Prof. Nuno Rodrigues, in deep learning-based point cloud coding.

4.3 Awards and Scientific Recognitions

1. First IBM Scientific Award, by unanimity, with a work entitled "Estudo da codificação de sinais vídeo com débitos binários variáveis", December 1990.

2. ISO Award for Outstanding Technical Contribution for the technical contributions to the MPEG-4 Visual standard, October 1998.

3. Honorable Mention from the UTL/Santander Totta Award in the area of Electrotechnical Engineering, in 2009, 2010, 2011 and 2012 (after 2012, I stopped applying).

4. Quality Reviewer Award at IEEE Int. Conf. on Multimedia and Expo (ICME'2011), Barcelona, Spain, July 2011.

5. Best Paper Award at Picture Coding Symposium (PCS'2015) with the paper "Improving enhancement layer merge mode for HEVC scalable extension" by X. HoangVan, J. Ascenso and F. Pereira, Cairns, Australia, May 2015.

6. Best Paper Award at Simpósio Brasileiro de Telecomunicações (SBrT'2015) with the paper "Studying the compression performance of video descriptors" by R. C. da Silva, F. Pereira and E. A. B. da Silva, Juiz de Fora, Brazil, September 2015.

7. Outstanding Reviewer Award at IEEE Int. Conf. on Multimedia and Expo (ICME'2018), San Diego, CA, USA, July 2018.

8. Honorable Mention Award at IEEE Int. Conf. on Multimedia and Expo (ICME'2019) with the paper "Adaptive plane projection for video-based point cloud coding" by E. Lopes, J. Ascenso, C. Brites and F. Pereira, Shanghai, China, July 2019.

4.4 Project Participation and Coordination

4.4.1 National

- **CSV: 1990 - 92** – Principal Investigator in the project "Codificação de sinais vídeo" (CSV) on behalf of Instituto Superior Técnico, integrated in the Programa Mobilizador de Ciência e Tecnologia from Junta Nacional de Investigação Científica e Tecnológica, between 1990 and 1992. This project had the main objective of designing and implementing digital image and video coding solutions.

- **NCI: 1992 - 95** - Principal Investigator in the project "Normalização de comunicações de imagem" (NCI) on behalf of Instituto Superior Técnico, integrated in the Programa Base de Investigação Científica e Tecnológica from Junta Nacional de Investigação Científica e Tecnológica, between 1992 and 1995. This project had the main objective of supporting my participation, on behalf of Portugal, in the MPEG meetings, and has allowed an intense participation in the design and specification of the MPEG-4 standard (for which an ISO Award was received).

- **Prodígios: 1995 - 98** - Principal Investigator in the project "Processamento digital de áudio e vídeo" (Prodígios) on behalf of Instituto de Telecomunicações, integrated in the Programa de Projectos de Investigação Científica e Tecnológica de Pequena e Média Dimensão from PRAXIS XXI, between 1995 and 1998. This project, which also included INESC and Grundig as partners, had the goal of boosting the collaboration between the various Portuguese teams working in the field of multimedia processing and coding.

- **NMARV: 1995 - 98** - Principal Investigator in the project "Normalização de métodos avançados de representação de vídeo" (NMARV) on behalf of Instituto Superior Técnico, integrated in the Programa Base de Investigação Científica e Tecnológica/95, between 1995 and 1998. This project had the main objective to continue the support to the design and specification of the MPEG-4 standard.

- **MuViDisCo: 2011 - 2013** – Investigator in the project "Multiview Video Disparity Compensation using Geometric Transforms" (MuViDisCo) on behalf of Instituto de Telecomunicações, sponsored by Fundação para a Ciência e a Tecnologia, started in June 2011, for two years. This project had the main objective to design advanced prediction models to improve the efficiency of conventional 3D video coding, notably exploiting geometric transforms to model the disparity between views.

- **MOG-QC on the GO: 2013 - 2015** – Investigator in the project "Desenvolvimento de um sistema integrado de controlo da qualidade de conteúdos audiovisuais" (MOG-QC on the GO) on behalf of Instituto Superior Técnico, integrated in the Programa FEDER/QREN, started in July de 2013, for two years. This project also included as partners Instituto Pedro Nunes (IPN), ISCTE-IUL and MOG Technologies. This project had the main objective of developing an integrated solution for the acquisition and ingest pipeline, able to automatically and real-time analyze the audiovisual quality in three main domains, notably video, audio and file format, in accordance with the relevant specifications.

- **MUVIS: 2012 - 2015** - Investigator in the project "MUlti-view distributed coding for VIsual Sensor networks" (MUVIS) on behalf of Instituto de Telecomunicações, sponsored by Fundação para a Ciência e a Tecnologia, started in March 2012, for three years. This project had the main objective of designing and implementing distributed multiview video coding solutions for visual sensor networks.

- **SeLF-ICN: 2016 - 2018** - Investigator in the project "Selectively Accessing Light Field Faces over Information Centric Networking" (SeLF-ICN) on behalf of Instituto de Telecomunicações, started in July 2016, for two years. This project had the main objective of developing a network able to behave as a huge image and video database, and allowing Information Centric Networking like network-centered name-based requests; these mechanisms should be useful for specific element requests, present in the images, notably faces. The images corresponded to views obtained from lenslet light fields.

- **PCR: 2016 - 2019** – Investigator in the project "Progressive Point Cloud Representation" (PCR) on behalf of Instituto de Telecomunicações, sponsored by Fundação para a Ciência e a Tecnologia, started in June 2016, for three years. This project had the main objective of developing efficient coding solutions for point clouds, an emerging visual representation model for many immersive applications, notably virtual and augmented reality.

- **EmergIMG: 2016 - 2019** – Investigator in the project "Emerging Image Modalities Representation and Compression (EmergIMG) on behalf of Instituto de Telecomunicações, sponsored by Fundação para a Ciência e a Tecnologia, started in June 2016, for three years. The partners were Instituto de Telecomunicações and Universidade da Beira Interior. This project had the main objective of developing coding and quality assessment tools for emerging visual modalities such as High Dynamic Range image and video, light fields and holograms.

4.4.2 European

- **MAVT: 1992 - 1996** – Investigator in the project RACE II 2072 MAVT "Mobile audiovisual terminal" on behalf of Instituto Superior Técnico. This project started in January 1992, for four years, and was of the first project in the world addressing the problem of

mobile multimedia communications; a first prototype for mobile video telephony communications has been developed. This project had a key role in the definition of the strategy and requirements for the MPEG-4 standard. This project included as partners some major European companies such as Bosch (D), Siemens (D), Philips (F), Thomson (F) and Daimler Benz (D). The participation of Instituto Superior Técnico has been focused on the design and implementation of video coding algorithms for low bitrates.

- **MANADIX: 1993 - 1996** - Investigator in the research network MANADIX "Motion analysis for advanced image communications systems", sponsored by the European Commission - DGXII in the context of the Human Capital and Mobility program, on behalf of Instituto Superior Técnico, between 1993 and 1996. This network had the main objective to boost the collaboration between several European research laboratories in the field of video motion analysis.

- **ACCOPI: 1995** - Investigator in the project RACE M1005 ACCOPI "Access control and copyright protection for images" on behalf of Instituto Superior Técnico, in 1995. This project had the key objective the definition of access control and copyright protection solutions for multimedia service in distributed environments. The participation of Instituto Superior Técnico has been focused on the compliance analysis and control of MPEG-2 Video streams.

- **MOMUSYS: 1995 - 1999** - Investigator in the project ACTS 098 MOMUSYS "Mobile multimedia systems" on behalf of Instituto Superior Técnico, between September 1995 and December 1999. This large project included about 20 European companies and universities, notably Bosch (D), Siemens (D), Philips (F) and the main telecom operators from Spain, France, Italy, Germany, Netherlands, Norway and Finland and was recognized as the European platform for the development of the MPEG-4 standard. In this project, Instituto Superior Técnico has led the activities related to the integration of the audio, video and systems components.

- **DICEMAN: 1998 - 2000** – Investigator in the project ACTS 308 DICEMAN "Distributed Internet content exchange with MPEG-7 and agent negotiations" on behalf of Instituto Superior Técnico, started in May 1998, for two years. This project included 8 European companies and universities, notably (D), CSELT (I), KPN Research (NL), INA (F) and UPC (SP) and had the key objective to develop a solution for the identification and trade of multimedia information based on the MPEG-7 standard. The participation of Instituto Superior Técnico has been focused on the development of automatic video analysis algorithms, notably for camera motion and face detection and tracking.

- **VISNET: 2003 - 2005** - Investigator in the Network of Excellence FP6 "Networked audiovisual media technologies" (VISNET) on behalf of Instituto Superior Técnico, started in December 2003, for two years. This network included 15 European companies and universities of excellence in the field of video representation.

- **DISCOVER: 2005 - 2007** - Investigator in the project "Distributed coding for video services" (DISCOVER) on behalf of Instituto Superior Técnico, started in September 2005, for two years. This project included 6 European companies and universities of excellence in the field of video representation. The key objective was the development of advanced and highly efficient distributed video coding solutions.

- **VISNET II: 2006 - 2008** – Investigator in the Network of Excellence FP6 "Networked audiovisual media technologies" (VISNET II) on behalf of Instituto Superior Técnico, started in July 2006, for 18 months. This network included 13 European companies and universities of excellence in the fields of representation, analysis and protection of audiovisual information.

- **QUALINET: 2010 - 2014** - Investigator in the project COST IC1003, "European Network on Quality of Experience in Multimedia Systems and Services" (QUALINET) on behalf of Instituto Superior Técnico, started in November 2010, for four years. In this project, Instituto Superior Técnico chaired *Working Group* 5 addressing Standardization, Certification and Dissemination. This project had the key objective to develop metrics, algorithms and protocols for the assessment of multimedia quality of experience in multiple applications and conditions.

- **VIVANT: 2010 - 2013** - Investigator in the project FP7, "Live Immerse Video-Audio Interactive Multimedia" (3D VIVANT) on behalf of Instituto de Telecomunicações, started in March 2010, for three years. This project had the key objective of developing a new generation of 3D video technology based on the capture, representation and manipulation of 3D holoscopic content.

- **GreenEyes: 2012 - 2015** - Investigator in the project FP7, "Networked energy-aware visual analysis" (GreenEyes) on behalf of Instituto de Telecomunicações, started in October 2012, for three years. This project had the key objective to develop new methodologies, algorithms and protocols, to give to wireless sensor networks, vision capabilities similar to those available in intelligent camera systems where no energy constraints are relevant.

4.4.3 Other International

- **COST 211: 1990 - 1992** – Investigator in the project COST 211 in the field of video analysis and coding, 1990.

- **MPEG-4: 1993 - 2007** - Investigator in the standardization project MPEG-4 which had the objective to specify a set of technologies for the object-based representation of audiovisual scenes. In this standardization context, I have taken multiple key roles and have presented the project at multiple occasions, from 1993 to 2007.

- **Acção Integrada Spain: 1995** – Principal Investigator in the Acção Integrada between Instituto Superior Técnico and Universitat Politècnica de Catalunya, Barcelona, Spain, entitled "Codificação de vídeo para terminais audiovisuais móveis", 1995.

- **MPEG-7: 1996 - 2007** – Investigator in the standardization project MPEG-7 which had the objective to specify a set of technologies for the description/metadata of audiovisual information. In this standardization context, I have taken multiple key roles and have presented the project at multiple occasions, from 1996 to 2007.

- **Acção Integrada Spain: 1997 –** Principal Investigator in the Acção Integrada between Instituto Superior Técnico and Universitat Politècnica de Catalunya, Barcelona, Spain, entitled "Representação, codificação e manipulação de objectos visuais", 1997.

- **MPEG-21: 2001 - 2007** - Investigator in the standardization project MPEG-21 which had the objective to specify an environment for the electronic trade of multimedia contents with associated intellectual property, from 2001 to 2007.

- **TSMV: 2015 - 2017** - Investigator in the project "Towards Super Multiview Video: Light Fields Coding" sponsored by CAPES/CNPq, Brazil. This project had the key objective to develop light field coding solutions, from 2015 to 2017.

- **LFC: 2017 - 2019** – Investigator in the project "Light Fields Compression" sponsored by Samsung Brazil, from September 2017 to October 2019. This project had the key objective to develop efficient light field coding solutions based on the 4D-DCT. The developed coding solution has been included in the JPEG Pleno Part 2 standard, addressing the coding of light fields, and two patents have been registered.

4.4.4 European Commission Collaboration

- Chair of the group "Multimedia content manipulation and management" (sub-domain 1) in the context of the Coordination Meetings of the European Program ACTS, February 1997 - May 1999.

- Chair of the ACTS MPEG Forum in the context of European Program ACTS, February 1997 - May 1999.

4.5 Evaluation and Audit of Projects

4.5.1 National

- Evaluation of projects for Junta Nacional de Investigação Científica e Tecnológica, 1994.

- Evaluation of projects for Agência de Inovação, 1996.

- Evaluation of projects for Agência de Inovação, 2001.

- Evaluation of projects for Agência de Inovação, 2002.

- Evaluation of projects for Ministério da Economia – Projectos Mobilizadores para o Desenvolvimento Tecnológico, 2002.

- Evaluation of projects for Agência de Inovação, 2006.

4.5.2 International

- Evaluation of projects for European Program RACE II – Image line – by invitation of the European Commission, 1991 and 1993.

- Auditing of projects for European Program RACE II – Image line – by invitation of the European Commission, 1992 and 1993.

- Evaluation of projects for European Program ACTS – Multimedia line - by invitation of the European Commission, 1995.

- External auditor for the ESPRIT MPEG4-PC European Project by invitation of the European Commission, 1997-1999.

- External Evaluator for the Benchmarking of the Networks and Video Communications Group of the Siemens Central Research Department, Munich, Germany, 1997.

- External auditor for the ACTS MIRADOR European Project by invitation of the European Commission, April 1999.

- Evaluation of projects for the Hong Kong Research Grants Council, annually, since 1999.

- Evaluation of projects for the European Program IST (Action 6) by invitation of the European Commission, July 1999 - November 2000.

- External auditor for the IST CODID European Project by invitation of the European Commission, February 2000.

- External auditor for the IST ADVISOR European Project by invitation of the European Commission, March 2000.

- Evaluation of projects for the Swiss National Science Foundation, 2001, 2002 e 2004.

- External auditor for the European Program CRAFT by invitation of the European Commission, May 2002.

- External auditor for the IST ELIN European Project by invitation of the European Commission, June 2002, December 2003, May 2004 and December 2004.

- Evaluation of projects for the Science Foundation Ireland in the context of the Strategic Research Cluster (SRC) Program, December 2006.

- Evaluation of projects for the Agence Nationale de la Recherche (ANR), Program CONTINT, December 2011.

- Evaluation of projects for the European Commission, 2013, 2014, 2017.

- Evaluation of projects for the Swedish Knowledge Foundation, 2016.

- Evaluation of projects for the Estonian Research Information System (ETIS), 2019.

- Evaluation of projects for the Natural Sciences and Engineering Research Council of Canada (NSERC), 2019.

4.6 National and International Standardization Activities

The standardization activities have had, with no doubts, a major impact in my career. This connection was established during my Ph.D. when Dr. Leonardo Chiariglione, at the time my Ph.D. supervisor and leader of the research group where I was working in Italy, created the most important standardization committee in the history of multimedia information representation, this means the ISO/IEC Moving Picture Experts Group (MPEG). This committee has developed most of the multimedia coding standards at the basis of most digital multimedia communication and storage systems and services and has, certainly, made a huge impact on our society and the way humans communicate nowadays.

In this context, I had a very intense participation in the MPEG committee, where I took many roles, from simple researcher to the top leadership, notably MPEG Requirements Subgroup Chair. Later, I played the same role in the ISO/IEC/ITU-T Joint Picture Experts Group (JPEG) committee. With this double MPEG-JPEG involvement, I became the only person who has been in the top MPEG and JPEG leadership, notably as Requirements Subgroup Chair.

This participation had many benefits, starting with the frequent, easy and privileged contact with the technologies and visions of the most important companies and research centers in the world in the multimedia field. This privileged contact, which was beneficial not only for me but also for my students and research team, was happening mainly in my role as MPEG and JPEG Requirements Subgroup Chair, where I was supposed to listen, analyze and assess the standardization requests and needs of these institutions, as well as their strategic visions, to decide which standardization projects and initiatives should be launched.

4.6.1 National

- National Delegate to the ISO/IEC Moving Picture Experts Group (MPEG) standardization committee, 1995 – present.

- Member of the 'Comissão Técnica de Codificação de Imagem, Áudio e Informação Multimédia', on behalf of Instituto Superior Técnico, since September 1991.

- Member of the 'Secretariado Nacional para o Audiovisual' on behalf of Secretaria de Estado da Ciência e Tecnologia, 1993/94.

- National Delegate to the ISO/IEC/ITU-T Joint Picture Experts Group (JPEG) standardization committee, 2015 – present.

- President of the 'Comissão Técnica de Codificação de Imagem, Áudio e Informação Multimédia' (CT 120) on behalf of Instituto Superior Técnico, since May 2017.

4.6.2 International

- **Chair** of the MPEG Ad Hoc Group for the MPEG-4 Tests Definition between November 1994 and July 1995. This Ad Hoc Group has defined the first set of subjective tests to assess the answers to the MPEG-4 Call for Proposals, performed in October 1995, in Los Angeles, CA, USA. These tests were the first at world level addressing very low bitrates and considering new functionalities such as object-based interaction and error resilience.

- **Editor** of the "MPEG-4 testing and evaluation procedures" document which has defined the test and assessment protocols for the evaluation of the MPEG-4 technologies, 1994-1995.

- **Chair** of the MPEG Ad Hoc Group on Web Page Creation, between March and July 1996.

- **Chair** of the MPEG Ad Hoc Group on MPEG-4 and MPEG-7 Requirements, between February and April 1997.

- **Chair** of the MPEG Ad Hoc Group on MPEG-7 Requirements, between April and October 1997.

- **Chair** of the MPEG Ad Hoc Group on Object Content Information (OCI), between July and October 1997.

- **Co-Chair** of the MPEG Ad Hoc Group on the Test and Evaluation Methods for the MPEG-7 Standard, between March and July 1998.

- Responsible for one of the evaluation teams (team leader) in the assessment of the proposals submitted following the MPEG-7 Call for Proposals, Lancaster, United Kingdom, February 1999.

- **Chair** of the MPEG Ad Hoc Group on MPEG-7 Requirements, March to October 1999.

- **Editor** of the "MPEG-7 requirements" document, 1999.

- **Chair** of the MPEG Ad Hoc Group on MPEG-7 Interoperability and Compliance, October 2000 to March 2001.

- **Editor** of the "MPEG-7 interoperability, conformance and profiling" document, October 2000 to March 2001.

- **Co-Chair** of the MPEG Ad Hoc Group on Lossless Audio Coding, between March and May de 2002.

- **MPEG Requirements Subgroup Chair** between March 2002 and March 2003 and again between January 2005 and July 2007. This MPEG subgroup defines the requirements and strategy for all MPEG standards, thus having a fundamental role on the evolution of multimedia representation standardization, in general.

- **JPEG Requirements Subgroup Chair** since February 2016, thus becoming the only person who has been a subgroup chair at both MPEG and JPEG committees. This JPEG subgroup defines the requirements and strategy for all JPEG standards, thus having a fundamental role on the evolution of image representation standardization, in general.

4.7 Invited Talks and Panels

4.7.1 National

1. "Redução de redundância em imagem digital", Seminário 'A Imagem e o Computador', Lisbon, Portugal, March 1986.

2. "Video on demand: afinal o que pode ser ?", Sessão Aberta sobre Video on Demand organized by Commission Técnica sobre a Codificação de Áudio, Vídeo e Informação Multimédia, Lisbon, Portugal, May 1994.

3. "Codificação de vídeo: novos conceitos, novas aplicações", Summer School on 'Inteligência Computacional Aplicada à Análise de Imagem e Visão por Computador', Instituto Superior Técnico, Lisbon, Portugal, September 1995.

4. "Normalização de codificação de vídeo", TV-Cabo Portugal, Lisbon, Portugal, February 1998.

5. "O desafio da comunicação de imagem no limiar do século XXI", Companhia Portuguesa Radio Marconi, Lisbon, Portugal, March 1998.

6. "Image compression algorithms", Workshop on Particle Image Velocimetry, Lisbon, Portugal, July 1998.

7. "The new MPEG standards for coding and description of audiovisual content", Jornadas de Engenharia de Telecomunicações e Computadores (JETC'99), Lisbon, Portugal, October 1999.

8. "Normas MPEG: da passividade à interactividade", Instituto Superior de Ciências do Trabalho e da Empresa, Lisbon, Portugal, January 2000.

9. "The MPEG-4 and MPEG-7 visual standards", Seminário sobre Televisão Digital, Aveiro, Portugal, January 2000.

10. "Técnicas de compressão de vídeo", Jornadas de Engenharia Electrotécnica, Instituto Politécnico de Castelo Branco, Castelo Branco, Portugal, May 2000.

11. "Projectos europeus: nem tudo o que brilha é ouro !", Seminário 'Potencialidades do 5º Programa Quadro de IDT para a Indústria Portuguesa', Ordem dos Engenheiros, Lisbon, Portugal, June 2000.

12. "Televisão digital interactiva", I Jornadas de Engenharia Electrotécnica, Instituto Politécnico de Tomar, Tomar, Portugal, April 2002.

13. "Televisão digital interactiva", Jornadas de Engenharia Electrotécnica, Instituto Politécnico de Castelo Branco, Castelo Branco, Portugal, May 2002.

14. "Representação audiovisual: novas tecnologias e aplicações", Instituto Politécnico de Leiria, Leiria, Portugal, June 2003.

15. "MPEG-7: quem descreve sempre alcança", 5º Encontro da Secção Portuguesa da Audio Engineers Association, Universidade de Trás-Os-Montes e Alto Douro, Vila Real, Portugal, June 2004.

16. "MPEG standards for advanced multimedia experiences", Opening Session of the M.Sc. on Multimedia Communication, Universidade Lusófona, Lisbon, Portugal, October 2004.

17. "Televisão digital: mitos e realidades", 1st Talk in the cycle 'Temas das Telecomunicações' organized by the Lisbon Science Academy, Instituto de Altos Estudos,

Engineering Academy, Ordem dos Engenheiros and IEEE ComSoc Portuguese Section, Lisbon, Portugal, May 2006.

18. "Metadata: the key for powerful multimedia personalization", Universidade Nova de Lisboa, Lisbon, Portugal, May 2007.

19. "DISCOVER monoview video codec", Workshop on Recent Advances in Distributed Video Coding, Instituto Superior Técnico, Lisbon, Portugal, November 2007.

20. "Video compression: trends and challenges", Thales Meeting, Vila Franca de Xira, Portugal, May 2009.

21. "Distributed Video Coding: an Alternative Paradigm", Faculdade de Engenharia da Universidade do Porto, Porto, October 2010.

22. "Mobile Video Compression: from Early Days to Coming Years", Sessão Comemorativo dos 20 Anos do Instituto de Telecomunicações, Instituto Politécnico de Leiria, Leiria, Portugal, May 2012.

23. "Measuring light, measuring life: driven by sensors and displays", invited talk at Encontro Nacional da Sociedade Portuguesa de Metrologia, Coimbra, Portugal, March 2015.

24. "Representing life with light: a never ending challenge", Instituto Politécnico de Leiria, Jornadas de Engenharia Electrotécnica, Leiria, Portugal, March 2017.

25. "Representing life with light: a never ending challenge", Science Academy, Lisbon, Portugal, December 2017.

4.7.2 International

1. "Image communication systems standardization - from the camel to the dromedary", Universitat Politècnica de Catalunya, Barcelona, Spain, July 1993.

2. "Very low bitrate video coding", Universitat Politècnica de Catalunya, Barcelona, Spain, July 1993.

3. "MPEG-4 requirements", Very Low Bitrate Coding/MPEG-4 Workshop, Brussels, Belgium, July 1994.

4. "MPEG-4 testing", MPEG-4 Workshop, Brussels, Belgium, July 1995.

5. Member of the Final Panel of the Computer Vision course organized by EuroPACE 2000 and ECVNet, broadcast life by satellite to Europe, January 1997.

6. "The MPEG-4 standard: what role in MPEG-21?", Workshop on MPEG-21, Noordwijkerhout, Netherlands, March 2000.

7. "New trends on visual information representation", Hanyang University, Seoul, South Korea, October 2000.

8. "MPEG-4: enabling new broadcasting experiences", Workshop on Digital Television and New Interactive Services, Expo'2000, Portuguese Pavillion, Hannover, Germany, October 2000.

9. "Visual data representation: fast, present and future", Alpen-Adria-Universität Klagenfurt, Klagenfurt, Austria, July 2001.

10. "Trends on visual data representation", Wollongong University, Wollongong, Australia, July 2001.

11. "Shape and texture adaptive intra refreshment based on refreshment need metrics", Universitat Politècnica de Catalunya, Barcelona, Spain, July 2002.

12. "MPEG-21 standard: why an open multimedia framework ?", Universitat Politècnica de Catalunya, Barcelona, Spain, July 2002.

13. "Visual representation for advanced applications: trends and challenges" invited talk at Sharjah University as IEEE Distinguished Lecturer, Sharjah, United Arab Emirates, May 2005.

14. "Bringing emotions to adapted multimedia experiences", University of Surrey, Guilford, United Kingdom, June 2005.

15. "Distributed video coding: achievements and plans", Purdue University, Laffayette, IL, USA, December 2005

16. "MPEG standards: an overview on recent achievements and trends", Thomson Consumer Electronics, Indianapolis, IL, USA, December 2005.

17. "MPEG-21: a standard for a multimedia framework", European Patent Office, Munich, Germany, September 2006.

18. "Distributed video coding: developments and challenges", Umea University, Sweden, September 2006.

19. "MPEG-7: multimedia content description interface", invited talk at Workshop on MPEG Technologies, Marrakech, Morocco, January 2007.

20. "Distributed video coding: basics, developments and challenges", Universitat Politécnica de Madrid, Spain, January 2007.

21. "Bringing emotions to adapted multimedia experiences", Universitat Autónoma de Madrid, Spain, February 2007.

22. "Processing challenges in intelligent video adaptation", Università degli Studi di Cagliari, Italy, March 2007.

23. "Multimedia application formats: why, how and what ?", Università degli Studi di Cagliari, Italy, March 2007.

24. "Recent trends on video coding: from predictions to estimations", Norwegian University of Science and Technology (NTNU), Trondheim, Norway, March 2008.

25. "Recent trends on video coding: from predictions to estimations", Alpen-Adria-Universität Klagenfurt, Klagenfurt, Austria, October 2008.

26. "Distributed video coding: developments and challenges", The Hong Kong Polytechnic University, Hong Kong, December 2008.

27. "Video coding: achievements, trends and challenges", Chinese University of Hong Kong, Hong Kong, December 2008.

28. "Video compression: will it ever be enough ?", invited talk for the Spanish Network of Excellence on Coding and Transmission of Multimedia Contents, Universitat Politècnica de Catalunya, Barcelona, Spain, February 2009.

29. "Video Coding: a Look to its Evolution", CEFET, Petrópolis, Brazil, October 2009.

30. "Distributed Video Coding: Status Quo and Perspectives", Danmarks Tekniske Universitet, Copenhagen, Denmark, October 2009.

31. "Trends on Visual Coding", Summer School on Advances in Image, Motion and Video Coding and Processing, Danmarks Tekniske Universitet, Copenhagen, Denmark, August 2011.

32. "Distributed Video Coding: Basics, Solutions and Trends", Summer School on Advances in Image, Motion and Video Coding and Processing, Danmarks Tekniske Universitet, Copenhagen, Denmark, August 2011.

33. "Video Coding: a Great Present but What Future ?", Samsung Research Center, Campinas, Brazil, June 2014.

34. "Video Coding: a Great Present but What Future ?", Universidade Federal do Amazonas, Manaus, Brazil, June 2014.

35. "Video Coding: What Comes After Success ?", Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil, August 2014.

36. "Visual coding: step by step towards reality", University of Technology, Sydney, Australia, June 2015.

37. "Visual coding: step by step towards reality", Universidade de Brasília, Brasília, Brazil, July 2015.

38. "Visual Representation Towards More Immersive Experiences", Samsung Brazil and Universidade de Campinas, Campinas, Brazil, August 2018.

4.8 Editorial Roles

4.8.1 National

1. Member of the Scientific-Technical Council of the 'Tendências XXI' journal published by Associação Portuguesa para o Desenvolvimento das Comunicações, nineties.

4.8.2 International

1. Member of the Editorial Board of Signal Processing: Image Communication, published by EURASIP, since 1994 (this means more than 25 years).

2. Associate Editor of IEEE Transactions on Circuits and Systems for Video Technology, April 1997 - December 2005.

3. Area Editor on Image/Video Compression of Signal Processing: Image Communication, since August 1999.

4. Member of the Best Paper Award Selection Committee of IEEE Transactions on Circuits and Systems for Video Technology, 2000.

5. Associate Editor of IEEE Transactions on Image Processing, January 2002 - December 2005.

6. Associate Editor of IEEE Transactions on Multimedia, April 2002 - December 2004.

7. Editorial Board Member of IEEE Press, 2003.

8. Associate Editor of IEEE Signal Processing Magazine, January 2007 - December 2008.

9. Editorial Board Member of IEEE Signal Processing Magazine, January 2009 - December 2010.

10. Associate Editor of IEEE Transactions on Multimedia, January 2009 - December 2010.

11. Associate Editor of Journal of Image and Video Processing, since July 2011.

12. Editor-in-Chief of IEEE Journal of Selected Topics in Signal Processing, January 2013 - December 2015.

4.8.3 Guest Editor

1. Guest editor of the Special Issue on MPEG-4, IEEE Transactions on Circuits and Systems for Video Technology, February 1997.

2. Guest editor of the Special Issues on MPEG-4, Signal Processing: Image Communication, May and June 1997.

3. Guest editor of the Special Issue on Object-based Video Coding and Description, IEEE Transactions on Circuits and Systems for Video Technology, December 1999.

4. Single guest editor of the Tutorial Issue on MPEG-4, Signal Processing: Image Communication, December 1999.

5. Guest editor of the Special Issue on MPEG-7 Technology, Signal Processing: Image Communication, September 2000.

6. Guest editor of the Special Issue on Multimedia Adaptation, Signal Processing: Image Communication, September 2003.

7. Guest editor of the Special Issue on the MPEG-21 Standard, IEEE Transactions on Multimedia, June 2005.

8. Guest editor of the Special Issue on Image and Video Processing Technologies, IEE Proceedings on Vision, Image and Signal Processing, June 2005.

9. Guest editor of the Special Issue on Analysis and Understanding for Video Adaptation, IEEE Transactions on Circuits and Systems for Video Technology, October 2005.

10. Guest editor do of the Special Issue on European Projects on Visual Representation Systems and Services, Signal Processing: Image Communication, October 2005.

11. Guest editor of the Special Issue on Distributed Video Coding, Signal Processing: Image Communication, June 2008.

12. Guest editor of the Special Issue on Video Surveillance, IEEE Transactions on Circuits and Systems for Video Technology, August 2008.

13. Guest editor of the Special Issue on Multimedia Quality Assessment, Signal Processing Magazine, November 2011.

14. Guest editor of the Special Issue on Distributed Video Coding, EURASIP Journal on Advances in Signal Processing, December 2013.

4.9 Patents

1. L.Masera, F.Pereira, "Perfezionamenti ai sistemi ibridi di codifica di segnali video", n.67148-A/90, regarding hybrid video coding improvements for assynchronous transmission environments, registered in Western Europe, USA, Canada and Japan, 1990.

2. E. A. B. da Silva, M. B. de Carvalho, C. L. Pagliari, M. P. Pereira, G. O. Alves, F. Pereira, V. Testoni, P. G. Freitas, "Método para comprimir dados de campo de luz usando transformadas de quatro dimensões de tamanho de bloco variável e decomposição por planos de bits", registered in Brazil (BR 10 2019 000922 5), January 2019.

3. E. A. B. da Silva, M. B. de Carvalho, C. L. Pagliari, M. P. Pereira, G. O. Alves, F. Pereira, V. Testoni, P. G. Freitas, "Method for compressing light field data using variable block-size four-dimensional transforms and bit-plane decomposition", registered in USA (USA 16/380600), April 2019.

4.10 Publications

4.10.1 Thesis

1. F. Pereira, "Redução de redundância e resistência a erros em telecópia", M.Sc. Thesis, Instituto Superior Técnico, Universidade Técnica de Lisboa, July 1988.

2. F. Pereira, "Variable bit rate video coding", Ph. D. Thesis, Instituto Superior Técnico, Universidade Técnica de Lisboa, July 1991.

4.10.2 Books

1. F. Pereira, T. Ebrahimi (editors), "The MPEG-4 Book", Prentice Hall, 2002.

2. I. Burnett, F. Pereira, R. Van de Walle, R. Koenen (editors), "The MPEG-21 Book", John Wiley & Sons, 2006.

3. F.Pereira (editor), "Comunicações Audiovisuais: Tecnologias, Normas e Aplicações", IST Press, ISBN: 978-972-8469-81-8, July 2009.

4.10.3 Book Chapters

1. F. Pereira, R. Koenen, "MPEG-7: status and directions", chapter in the book "Multimedia systems, standards and networks", edited by A. Puri e T. Chen, Marcel Dekker, Inc., 1999.

2. F. Pereira, R. Koenen, "Context, goals, and procedures", chapter in the book "Introduction to MPEG-7: Multimedia Content Description Language", edited by B. S. Manjunath, P. Salembier e T. Sikora, John Wiley & Sons, 2002.

3. F. Pereira, "Context, objectives and process", Chapter 1 in the book "The MPEG-4 Book", edited by F. Pereira e T. Ebrahimi, Prentice Hall, 2002.

4. O. Avaro, R. Koenen, F. Pereira, "MPEG-4 overview", Chapter 2 in the book "The MPEG-4 Book", edited by F. Pereira e T. Ebrahimi, Prentice Hall, 2002.

5. R. Koenen, F. Pereira, "Profiling and conformance: approach and overview", Chapter 13 in the book "The MPEG-4 Book", edited by F. Pereira e T. Ebrahimi, Prentice Hall, 2002.

6. L. Contin, V. Baroncini, F. Pereira, "Video testing for validation", Chapter 15 in the book "The MPEG-4 Book", edited by F. Pereira e T. Ebrahimi, Prentice Hall, 2002.

7. F. Pereira, P. Nunes, "Levels for visual profiles", Appendix A in the book "The MPEG-4 Book", edited by F. Pereira e T. Ebrahimi, Prentice Hall, 2002.

8. F. Pereira, "Levels for audio profiles", Appendix B in the book "The MPEG-4 Book", edited by F. Pereira e T. Ebrahimi, Prentice Hall, 2002.

9. F. Pereira, "Levels for graphics profiles", Appendix C in the book "The MPEG-4 Book", edited by F. Pereira e T. Ebrahimi, Prentice Hall, 2002.

10. F. Pereira, "Levels for scene graph profiles", Appendix D in the book "The MPEG-4 Book", edited by F. Pereira e T. Ebrahimi, Prentice Hall, 2002.

11. F. Pereira, R. Van de Walle, "Multimedia content description in MPEG-7 and MPEG-21", chapter in the book "Multimedia Content and Semantic Web: Methods, Standards and Tools", edited by G. Stamou e S. Kollias, John Wiley & Sons, 2005.

12. F. Pereira, R. Koenen, "MPEG: context, goals and working methodologies", chapter in the book "The MPEG-21 Book", edited by I. Burnett, F. Pereira, R. Van de Walle, R. Koenen, John Wiley & Sons, 2006.

13. F. Pereira, I. Burnett, "Future MPEG developments", chapter in the book "The MPEG-21 Book", edited by I. Burnett, F. Pereira, R. Van de Walle, R. Koenen, John Wiley & Sons, 2006.

14. I. Burnett, F. Pereira "An introduction to MPEG-21", chapter in the book "The MPEG-21 Book", edited by I. Burnett, F. Pereira, R. Van de Walle, R. Koenen, John Wiley & Sons, 2006.

15. P. Correia, F. Pereira, "Objective evaluation of video segmentation quality", chapter in the book "Advances in image and video segmentation", edited by Y.-J. Zhang, Idea-Group Inc., 2006.

16. F. Pereira, C. Brites, J. Ascenso, "Distributed video coding: basics, codecs and performance", chapter in the book "Distributed source coding: theory, algorithms and applications", edited by M. Gastpar e P. L. Dragotti, Academic Press, ISBN: 978-0-12-374485-2, 2009.

17. F. Pereira, "Introdução", chapter in the book "Comunicações audiovisuais: tecnologias, normas e aplicações", edited by F. Pereira, IST Press, ISBN: 978-972-8469-81-8, July 2009.

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4.11 Conference Talks and Communications

4.11.1 Invited Communications in National Conferences

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2. F. Pereira, "Digital image communication: what, how and when", Workshop on Dynamics and Complexity, Lisbon, Portugal, September 1994.

3. F. Pereira, "A invasão da imagem", 5º Congresso das Comunicações, Lisbon, Portugal, November 1994.

4. F. Pereira, "Multimedia representation technology: a new generation is already coming", Forum Multimédia, Lisbon, Portugal, November 1995.

5. F. Pereira, "New trends on image and video coding", 10th Portuguese Conference on Pattern Recognition (RECPAD'98), Lisbon, Portugal, March 1998.

6. F. Pereira, "Televisão digital: tecnologias e serviços", 4º Encontro Nacional do Colégio de Engenharia Electrotécnica, Ordem dos Engenheiros, Lisbon, Portugal, May 1999.

7. F. Pereira, "Representação Multimédia: Tecnologias e Aplicações", 4ª Conferência sobre Redes de Computadores, Covilhã, Portugal, November 2001.

4.11.2 Submitted Communications in National Conferences

1. C. Pires, J. Afonso, F. Pereira, C. Salema, "Codificação eficiente de imagens utilizando técnicas híbridas de transformada", Workshop 'Computação Gráfica no Ensino', Lisbon, Portugal, May 1991.

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15. J. Ascenso, J. Valentim, F. Pereira, "Reconhecimento automático de faces usando informação de textura e de geometria 3D", 4th Encontro Nacional do Colégio de Engenharia Electrotécnica, Lisbon, Portugal, May 1999.

16. J. Ascenso, P. L. Correia, F. Pereira, "A face detection solution integrating automatic and user assisted tools", 11th Portuguese Conference on Pattern Recognition (RECPAD'2000), Porto, Portugal, May 2000.

17. L. Ducla Soares, F. Pereira, "MPEG-7 based spatial shape concealment difficulty", 3rd Conferência de Telecomunicações, Figueira da Foz, Portugal, April 2001.

18. J. Valentim, P. Nunes, F. Pereira, "IST MPEG-4 video compliant framework", 3rd Conferência de Telecomunicações, Figueira da Foz, Portugal, April 2001.

19. J. Ascenso, P. L. Correia, F. Pereira, "A video segmentation toolbox with support for user interaction", 3rd Conferência de Telecomunicações, Figueira da Foz, Portugal, April 2001.

20. C. Zibreira, F. Pereira, "A study of similarity measures for a turning angles-based shape descriptor", 3rd Conferência de Telecomunicações, Figueira da Foz, Portugal, April 2001.

21. J. Magalhães, F. Pereira, "MPEG-7 based color temperature customization", 4th Conferência de Telecomunicações, Aveiro, Portugal, June 2003.

22. J. Magalhães, F. Pereira, "A system for universal access to multimedia content based on the MPEG-7 standard", 4th Conferência de Telecomunicações, Aveiro, Portugal, June 2003.

23. C. Brites, F. Pereira, "Distributed video coding: bringing new applications to life", 5th Conferência de Telecomunicações, Tomar, Portugal, April 2005.

24. P. Correia, F. Pereira, "Visual technologies for advanced applications: contributions by the IST-IT image group", 5th Conferência de Telecomunicações, Tomar, Portugal, April 2005.

25. L. Ducla Soares, F. Pereira, "An integrated error resilient object-based video coding architecture", 6th Conferência de Telecomunicações, Peniche, Portugal, May 2007.

26. R. Almeida, F. Pereira, "H.264/AVC low complexity encoding: a novel fast coding mode selection solution", 6th Conferência de Telecomunicações, Peniche, Portugal, May 2007.

27. J. Pedro, C. Brites, J. Ascenso, F. Pereira, "Studying the feedback channel in transform domain Wyner-Ziv video coding", 6th Conferência de Telecomunicações, Peniche, Portugal, May 2007.

28. P. Nunes, F. Pereira, "Rate control architecture for joint object-based MPEG-4 video encoding", 6th Conferência de Telecomunicações, Peniche, Portugal, May 2007.

29. D. F. de Souza, J. Ascenso, N. M. M. Rodrigues, S. M. M. Faria, F. Pereira, "Improving H.264/AVC video coding with geometric transforms", 9th Conferência de Telecomunicações, Castelo Branco, Portugal, May 2013.

30. X. HoangVan, J. Ascenso, F. Pereira, "Designing an HEVC based scalable video coding extension", 9th Conferência de Telecomunicações, Castelo Branco, Portugal, May 2013.

31. D. K. Shah, J. Ascenso, C. Brites, F. Pereira, "Studying platelet-based depth map coding", 9th Conferência de Telecomunicações, Castelo Branco, Portugal, May 2013.

32. R. C. da Silva, F. Pereira, E. A. B. da Silva, "Studying the compression performance of vídeo descriptors", 33rd Simpósio Brasileiro de Telecomunicações, Juiz de Fora, MG, Brazil, September 2015 (Best Paper Award).

4.11.3 Invited Communications in International Conferences

1. F. Pereira, "MPEG-4 - The new kid on the block", Second Annual European Video and Image Compression Conference, London, United Kingdom, November 1995.

2. F. Pereira, "MPEG-4: a new challenge for the representation of audio-visual information", keynote speech at Picture Coding Symposium (PCS'96), Melbourne, Australia, March 1996.

3. L. Torres, M. Kunt, F. Pereira, "Second generation video coding schemes and their role in MPEG-4", European Conference on Multimedia Applications, Services and Techniques (ECMAST'96), Louvain-la-Neuve, Belgium, May 1996.

4. F. Pereira, "The MPEG-4 standard: evolution or revolution ?", survey lecture at Radio Science and Telecommunications' 96, Lulea, Sweden, June 1996.

5. F. Pereira, "Very low bitrate video coding and MPEG-4: still a good relation", European Signal Processing Conference (EUSIPCO'96), Trieste, Italy, September 1996.

6. F. Pereira, "MPEG-7: a standard for content-based audiovisual description", invited speech at 2nd Int. Conference on Visual Information Systems (VISUAL'97), San Diego, CA, USA, December 1997.

7. F. Pereira, "MPEG-4: a new approach to audiovisual coding", MUST'98, Paris, France, May 1998.

8. F. Pereira, "MPEG-4 and MPEG-7: coding and describing multimedia objects", invited speech at Information Society Technologies Conference (IST'98), Vienna, Austria, December 1998.

9. F. Pereira, "MPEG-7: a standard for describing audiovisual information", Workshop on Multimedia Databases and MPEG-7, London, United Kingdom, January 1999.

10. F. Pereira, "MPEG-4 and MPEG-7: technologies and functionalities", plenary speech at VIII Simposium Nacional de Reconocimiento de Formas y Analisis de Imagenes, Bilbao, Spain, May 1999.

11. F. Pereira, "The MPEG-7 standard: a challenge to describe multimedia information", invited speech at European Workshop on Content-Based Multimedia Indexing (CBMI'99), Toulouse, France, October 1999.

12. F. Pereira, "MPEG-4: concepts, tools and applications", International Symposium on Image/Video Communications over Fixed and Mobile Networks, Rabat, Morocco, April 2000.

13. F. Pereira, "MPEG-7: multimedia content description standard", invited speech at Korea Telecom International Symposium 2000, Seoul, South Korea, October 2000.

14. F. Pereira, "MPEG-21 standard: why an open multimedia framework ?", invited speech at 8th International Workshop on Interactive Distributed Multimedia Systems, Lancaster, United Kingdom, September 2001.

15. F. Pereira, "MPEG-4 and MPEG-7: audiovisual standards for the XXIst century ?", invited speech at IMAGINA'2002, Monte-Carlo, Monaco, February 2002.

16. F. Pereira, "Trends on visual representation for multimedia communications", plenary speech at 6th IEEE International Conference on High Speed Networks and Multimedia Communications, Estoril, Portugal, July 2003.

17. F. Pereira, "Audiovisual content adaptation", plenary speech at 6th Baiona Workshop on Signal Processing in Communications, Baiona, Spain, September 2003.

18. F. Pereira, "Overview on multimedia compression standards", area review talk at 17th International Conference on Pattern Recognition (ICPR'2004), Cambridge, United Kingdom, August 2004.

19. F. Pereira, "MPEG-21 standard: towards the integration of multimedia technologies", plenary talk at 11th Int. Workshop on Systems, Signals and Image Processing, Poznan, Poland, September 2004.

20. F. Pereira, "Multimedia content adaptation: may one fit all ?", invited talk at Int. Conference on Computer Vision and Graphics, Warsaw, Poland, September 2004.

21. F. Pereira, "MPEG-21 standard: developing and integrating multimedia technologies", invited talk at 7th COST 276 Workshop, Ankara, Turkey, November 2004.

22. F. Pereira, "Sensations, perceptions and emotions: towards quality of experience evaluation for consumer electronics video adaptations", invited talk at 1st International Workshop on Video Processing and Quality Metrics for Consumer Electronics, Scottsdale, AZ, USA, January 2005.

23. F. Pereira, "Multimedia representation technologies: from coding to personalization", plenary talk at 5th Conference on Telecommunications, Tomar, Portugal, April 2005.

24. F. Pereira, "From coding to personalization using MPEG standards", invited talk as IEEE Distinguished Lecturer at 12th IEEE Technical Exchange Meeting (TEM), Dahran, Saudi Arabia, May 2005.

25. F. Pereira, "MPEG-21 standard: defining an open multimedia framework", plenary talk at 47th International Symposium ELMAR-2005 focused on Multimedia Systems and Applications, Zadar, Croatia, June 2005.

26. F. Pereira, "Content and context: two worlds to bridge", keynote talk at 4th International Workshop on Content-Based Multimedia Indexing (CBMI'2005), Riga, Latvia, June 2005.

27. F. Pereira, "Processing challenges in intelligent video adaptation", plenary talk as IEEE Distinguished Lecturer at Advanced Concepts for Intelligent Vision Systems (ACIVS'2005), Antwerp, Belgium, September 2005.

28. F. Pereira, "Content adaptation: a metadata challenge", invited talk as IEEE Distinguished Lecturer at IEEE Workshop on Multimedia Compression, Bangalore, India, October 2005.

29. F. Pereira, "Distributed video coding - basics and trends", invited talk at 2nd MPEG Workshop on Future Directions in Video Compression, Nice, France, October 2005.

30. F. Pereira, "Multimedia representation in MPEG standards: achievements and challenges", keynote lecture at 1st International Conference on Signal Processing and Multimedia Applications (SIGMAP), Setúbal, Portugal, August 2006.

31. F. Pereira, "Developments and trends on video coding: is there a xVC virus ?", invited talk at 2nd International Conference on Ubiquitous Information Management and Communication (ICUIMC'08), Suwon, South Korea, February 2008.

32. F. Pereira, "Analysis for video coding: moving it from the encoder to the decoder", invited talk at International Conference on Image Analysis and Recognition (ICIAR), Póvoa de Varzim, Portugal, June 2008.

33. F. Pereira, "Video compression: still evolution or time for revolution?", keynote speech at Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS), London, United Kingdom, May 2009.

34. F. Pereira, "Distributed video coding: basics, main solutions and trends", ICME Workshop on Multimedia Signal Processing and Novel Parallel Computing, New York, NJ, USA, July 2009.

35. F. Pereira, "Video compression: discussing the next steps", ICME Workshop on Emerging Multimedia Circuits and Systems Technologies, New York, NJ, USA, July 2009.

36. F. Pereira, "Video compression: enabling more exciting experiences …", invited talk at International Telecommunications Symposium (ITA), Manaus, Brazil, September 2010.

37. F. Pereira, "Video compression: an evolving technology for better user experiences …", invited talk at 2nd National Conference on Telecommunications (CONATEL), Arequipa, Peru, May 2011.

38. F. Pereira, "Visual compression: the foundational technology for better TV experiences", EUROITV'2011, Lisbon, Portugal, June 2011.

39. F. Pereira, "Visual representation: a great present but what future ?", invited talk at European Signal Processing Conference (EUSIPCO'2013), Marrakech, Morocco, September 2013.

40. F. Pereira, "Visual coding: step by step towards reality", keynote speech at Picture Coding Symposium (PCS'2015), Cairns, Australia, June 2015.

41. F. Pereira, "JPEG PLENO: going deep the plenoptic way", plenary talk at IEEE Int. Workshop on Hot Topics in 3D (Hot3D), in conjunction with the IEEE Int. Conf. on Multimedia & Expo (ICME'2016), Seattle, WA, USA, July 2016.

42. F. Pereira, "Visual representation: exploiting new modalities for more realistic experiences", keynote speech at Int. Workshop on Advanced Image Technology, Penang, Malaysia, January 2017.

43. F. Pereira, "From pixels to voxels: how is coding evolving ?", plenary speech at European Workshop on Visual Information Processing (EUVIP'2019), Roma, Italy, October 2019.

4.11.4 Submitted Communications in International Conferences

1. F. Pereira, C. Salema, "Error sensitivity of the Modified Huffman Code", IEEE Mediterranean Electrotechnical Conference (MELECON'89), Lisbon, Portugal, April 1989.

2. F. Pereira, "HDTV image coding with constant quality in an Asynchronous Transfer Mode network", Third Int. Workshop on HDTV, Torino, Italy, August 1989.

3. F. Pereira, L. Masera, "An ATM adapted video coding algorithm operating at low bitrates", Second Int. Workshop on 64 kbit/s Coding of Moving Video, Hannover, Germany, September 1989.

4. F. Pereira, L. Masera, "Constant quality coding in ATM networks: from videophone to HDTV", Workshop Technology for ATD, Paris, France, October 1989.

5. F. Pereira, M.Quaglia, P.Delicati, "A VBR video coding algorithm for digital storage media", Int. Workshop on Packet Video, Morristown, MS, USA, March 1990.

6. F. Pereira, L. Masera, "High quality still picture mode embedded into a hybrid coding scheme", Picture Coding Symposium (PCS'90), Cambridge, MS, USA, March 1990.

7. F. Pereira, L. Masera, "Constant quality video coding in ATM networks: an iterative algorithm", Latvian Int. Signal Processing Conference, Riga, Latvia, April 1990.

8. F. Pereira, "Constant quality video coding on the CCITT H.261 algorithm", IASTED Int. Conf. on Signal Processing and Digital Filtering, Lugano, Switzerland, June 1990.

9. F. Pereira, L. Masera, "Bitrate optimization for fixed picture transmissions with an ATM adapted CCITT H.261 algorithm", Bilkent Int. Conf. on New Trends in Communications, Control and Signal Processing, Ankara, Turkey, July 1990.

10. F. Pereira, L. Masera, "Two-layers knowledge based videophone coding", Int. Workshop on 64 kbit/s Coding of Moving Video, Rotterdam, Netherlands, September 1990.

11. F. Pereira, L. Masera, "An ATM adapted video coding algorithm using knowledge based techniques", European Signal Processing Conference (EUSIPCO'90), Barcelona, Spain, September 1990.

12. C. Pires, F. Pereira, J. Afonso, "The emerging JPEG coding standard: performance analysis", Symposium de la Union Cientifica Internacional de Radio, Vigo, Spain, September 1990.

13. F. Pereira, "The variable bitrate video coding challenge", Simposium de la Union Cientifica Internacional de Radio, Vigo, Spain, September 1990.

14. F. Pereira, L. Masera, "Two-layers constant quality video coding for ATM environments", Visual Communications and Image Processing Conference (VCIP'90), Lausanne, Switzerland, October 1990.

15. F. Pereira, L. Masera, "Broadband video communications: the constant quality coding question", Int. Conf. on Integrated Broadband Services and Networks, London, United Kingdom, October 1990.

16. C. Pires, J. Afonso, F. Pereira, "Progressive still image coding: transform analysis", IEEE Mediterranean Electrotechnical Conference (MELECON'91), Ljubljana, Yugoslavia, May 1991.

17. J. Afonso, C. Pires, F. Pereira, C. Salema, "Efficient ordering of block transform coefficients for image compression", Symposium de la Union Cientifica Internacional de Radio, Cáceres, Spain, September 1991.

18. F. Pereira, "Video communications in the Broadband-Integrated Services Digital Network", Int. Conf. on Computer Communications, Beijing, China, October 1991.

19. F. Pereira, C. Salema, "Cell loss resilience for B-ISDN video communications", Workshop on Broadband Communications, Estoril, Portugal, January 1992.

20. C. Pires, S. Battista, F. Pereira, C. Salema, "MPEG picture coding standards: an evolution towards computer image applications", 2ⁿᵈ Int. Conf. on Computational Graphics and Visualization Techniques (COMPUGRAPHICS'92), Lisbon, Portugal, December 1992.

21. D. Lappe, S. Panis, F. Pereira, M. Roser, D. Schinkel, D. Thoreau, "A proposal for a reference model for mobile video applications", Picture Coding Symposium (PCS'93), Lausanne, Switzerland, March 1993.

22. F. Seytter, F. Pereira, M. Roser, F. Dervaux, "Applications and services for a mobile audiovisual terminal", Picture Coding Symposium (PCS'93), Lausanne, Switzerland, March 1993.

23. C. Pires, S. Battista, F. Pereira, "Adaptive coding of differential motion compensated CCIR 601 images", IMAGE'COM 93, Bordeaux, France, March 1993.

24. F. Pereira, D. Cortez, P. Nunes, "Mobile videotelephone communications: the CCITT H.261 chances", Conference on Image Communications and Video Compression (EUROPTO), Berlin, Germany, April 1993.

25. M. M. Sequeira, F. Pereira, "Global motion compensation and motion vector smoothing in an extended H.261 recommendation", Conference on Image Communications and Video Compression (EUROPTO), Berlin, Germany, April 1993.

26. F. Seytter, F. Pereira, M. Roser, F. Dervaux, "Services and requirements for a mobile audio-visual terminal", Workshop on Mobile Communications, Metz, France, June 1993.

27. M. M. Sequeira, F. Pereira, "Knowledge-based videotelephone sequence segmentation", Visual Communications and Image Processing Conference (VCIP'93), Cambridge, MS, USA, November 1993.

28. F. Pereira, "A mobile audio-visual terminal for the DECT system", IEEE Mediterranean Electrotechnical Conference (MELECON'94), Antalya, Turkey, April 1994.

29. F. Pereira, "What is happening with very low bitrate audio-visual coding ?", RACE Mobile Workshop, Amsterdam, Netherlands, May 1994.

30. F. Pereira, R. Koenen, "New trends on the standardization of multimedia information", Int. Conf. on Multimedia Communications, Southampton, United Kingdom, April 1995.

31. R. Koenen, F. Pereira, "MPEG-4: a new way towards multimedia mobile communications", RACE Mobile Telecommunications Summit, Cascais, Portugal, November 1995.

32. C. Pires, C. Salema, F. Pereira, "Scene change analysis for digital HDTV using the MPEG-2 framework", Int. Workshop on HDTV and the Evolution of Television, Taipei, Taiwan, November 1995.

33. P. Nunes, F. Pereira, "Boundary detection in textured images using Markov random fields modelling", IMAGECOM'96, Bordeaux, France, May 1996.

34. P. Correia, F. Pereira, "Video analysis for coding: objectives, features and methods", 2cd Erlangen Symposium "Advances in Digital Image Communication", Erlangen, Germany, April 1997.

35. G. Abrantes, F. Pereira, "3D facial animation using the MPEG-4 SNHC verification model", ECMAST'97 Workshop on SNHC, Milan, Italy, May 1997.

36. P. Correia, F. Pereira, "Segmentation of video sequences in a video analysis framework", Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'97), Louvain-La-Neuve, Belgium, June 1997.

37. F. Pereira, "Very low bitrate video coding: the content-based approach", Workshop on Coding Techniques for Very Low Bitrate Video (VLVB'97), Linkoping, Sweden, July 1997.

38. G. Abrantes, F. Pereira, "An MPEG-4 SNHC compatible implementation of a 3D facial animation system", Int. Workshop on Synthetic-Natural Hybrid Coding and Three Dimensional Imaging, Rhodes, Greece, September 1997.

39. P. Nunes, F. Pereira, "Rate control for scenes with multiple arbitrarily shaped video objects", Picture Coding Symposium (PCS'97), Berlin, Germany, September 1997.

40. P. Nunes, F. Pereira, F. Marqués, "Multi-grid chain coding of binary shapes", IEEE Int. Conf. on Image Processing (ICIP'97), Santa Barbara, CA, USA, October 1997.

41. L. Ducla Soares, F. Pereira, "MPEG-4: a flexible coding standard for the emerging mobile multimedia applications", IEEE Int. Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC'98), Boston, MS, USA, September 1998.

42. P. Correia, F. Pereira, "User interaction in content-based video coding and indexing", European Signal Processing Conference (EUSIPCO'98), Rhodes, Greece, September 1998.

43. G. Abrantes, F. Pereira, "Interactive analysis for MPEG-4 facial models configuration", EUROGRAPHICS'98, Lisbon, Portugal, September 1998.

44. P. Correia, F. Pereira, "Proposal for an integrated video analysis framework", IEEE Int. Conf. on Image Processing (ICIP'98), Chicago, IL, USA, October 1998.

45. L. Ducla Soares, F. Pereira, "An alternative to the MPEG-4 object-based error resilient video syntax", IEEE Int. Conference on Image Processing (ICIP'98), Chicago, IL, USA, October 1998.

46. P. Nunes, F. Pereira, "Object-based rate control for the MPEG-4 visual simple profile", Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'99), Berlin, Germany, May 1999.

47. P. Salembier, N. O'Connor, P. Correia, F. Pereira, "Hierarchical visual description schemes for still images and video sequences", IEEE Int. Conference on Image Processing (ICIP'99), Kobe, Japan, October 1999.

2000

48. F. Pereira, "Visual data representation: recent achievements and future developments", European Signal Processing Conference (EUSIPCO'2000), Tampere, Finland, September 2000.

49. P. Correia, F. Pereira, "Estimation of video object's relevance", European Signal Processing Conference (EUSIPCO'2000), Tampere, Finland, September 2000.

50. L. Ducla Soares, F. Pereira, "Influence of encoder parameters on the decoded video quality for MPEG-4 over W-CDMA mobile networks", IEEE Int. Conf. on Image Processing (ICIP'2000), Vancouver, Canada, September 2000.

51. P. Correia, F. Pereira, "Objective evaluation of relative segmentation quality", IEEE Int. Conf. on Image Processing (ICIP'2000), Vancouver, Canada, September 2000.

52. C. Zibreira, F. Pereira, "Image description and retrieval using MPEG-7 shape descriptors", 4th European Conference on Research and Advanced Technology for Digital Libraries, Lisbon, Portugal, September 2000.

53. P. Nunes, F. Pereira, "MPEG-4 compliant video encoding: analysis and rate control strategies", Asilomar Conference on Signal and Image Processing, Pacific Grove, CA, USA, October 2000.

2001

54. P. Nunes, F. Pereira, "Scene level rate control algorithm for MPEG-4 video coding", Visual Communications and Image Processing (VCIP'2001), San Jose, CA, USA, January 2001.

55. P. Correia, F. Pereira, "Standalone objective evaluation of segmentation quality", Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2001), Tampere, Finland, May 2001.

56.   J. Valentim, P. Nunes, F. Pereira, "Evaluating MPEG-4 video decoding complexity", 2nd Workshop and Exhibition on MPEG-4, San Jose, CA, USA, June 2001.

57.   J. Valentim, P. Nunes, F. Pereira, "An alternative complexity model for the MPEG-4 video verifier mechanism", IEEE Int. Conf. on Image Processing (ICIP'2001), Thessaloniki, Greece, October 2001.

2002

58.   L. Ducla Soares, F. Pereira, "Texture refreshment need metric for resilient object-based video coding", IEEE Int. Conf. on Multimedia and Expo (ICME'2002), Lausanne, Switzerland, August 2002.

59.   L. Ducla Soares, F. Pereira, "Shape refreshment need metric for object-based resilient video coding", IEEE Int. Conf. on Image Processing (ICIP'2002), Rochester, NY, USA, September 2002.

60.   F. Pereira, "MPEG-21 framework: more than just multimedia technologies", European Symposium on Intelligent Technologies, Hybrid Systems and their implementation on Smart Adaptive Systems, Albufeira, Portugal, September 2002.

61.   L. Ducla Soares, F. Pereira, "Adaptive shape-texture intra coding refreshment for error resilient object-based video", IEEE Int. Workshop on Multimedia Signal Processing, St. Thomas, Virgin Islands, USA, December 2002.

2003

62.   P. Correia, F. Pereira, "A proposal for the classification of video segmentation application scenarios", Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2003), London, United Kingdom, April 2003.

63.   P. Fonseca, F. Pereira, "Automatic video summarization system based on MPEG-7 descriptions", Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2003), London, United Kingdom, April 2003.

64.   P. Fonseca, F. Pereira, "Skin colour detection based on MPEG-7 dominant colour descriptor", Picture Coding Symposium (PCS'2003), St. Malo, France, April 2003.

65.   P. Fonseca, F. Pereira, P. Correia, "Using MPEG-7 descriptions to create video summaries", Workshop on Transmitting, Processing and Watermarking Multimedia Contents, Bordeaux, France, March 2003.

2004

66. L. Ducla Soares, F. Pereira, "Temporal shape error concealment by global motion compensation", Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2004), Lisbon, Portugal, April 2004.

67. P. Correia, F. Pereira, "Change detection-based video segmentation for surveillance applications", Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2004), Lisbon, Portugal, April 2004.

68. P. Nunes, F. Pereira, "Rate and distortion modeling analysis for mpeg-4 video intra coding", Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2004), Lisbon, Portugal, April 2004.

69. J. Ascenso, F. Pereira, "H.264/AVC fine grain scalability using bitplane coding", Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2004), Lisbon, Portugal, April 2004.

70. L. Ducla Soares, F. Pereira, "Temporal shape error concealment for object-based video", 2nd Int. Symposium on Image/Video Communications over Fixed and Mobile Networks (ISIVC'2004), Brest, France, July 2004.

71. P. Nunes, F. Pereira, "Rate and distortion models for MPEG-4 video encoding", SPIE's 49th Annual Symposium on Optical Science and Technology, Applications of Digital Image Processing, Denver, CO, USA, August 2004.

72. W. Skarbek, A. Buchowicz, A. Pietrowcew, F. Pereira, "Bit-rate control for video compression with ROI", Int. Conference on Computer Vision and Graphics, Warsaw, Poland, September 2004.

73. D. Palma, J. Ascenso, F. Pereira, "Automatic text extraction in digital video based on motion analysis", Int. Conf. on Image Analysis and Recognition (ICIAR'2004), Porto, Portugal, September 2004.

74. L. Ducla Soares, F. Pereira, "Motion-based shape error concealment for object-based video", IEEE Int. Conf. on Image Processing (ICIP'2004), Singapore, October 2004.

75. J. Ascenso, F. Pereira, "Drift reduction for a H.264/AVC fine grain scalability with motion compensation architecture", IEEE Int. Conf. on Image Processing (ICIP'2004), Singapore, October 2004.

76. L. Ducla Soares, F. Pereira, "Combining space and time processing for shape error concealment", Picture Coding Symposium (PCS'2004), San Francisco, CA, USA, December 2004.

2005

77. L. Natário, F. Pereira, "Bringing adaptive GOP size to the MPEG-4 scalable video coding standard", 5th EURASIP Conference on Speech and Image Processing, Multimedia Communications and Services, Smolenice, Slovakia, June 2005.

78. L. Ducla Soares, F. Pereira, "Spatial texture error concealment for object-based image and video coding", 5th EURASIP Conference on Speech and Image Processing, Multimedia Communications and Services, Smolenice, Slovakia, June 2005.

79. J. Ascenso, C. Brites, F. Pereira, "Improving frame interpolation with spatial motion smoothing for pixel domain distributed video coding", 5th EURASIP Conference on Speech and Image Processing, Multimedia Communications and Services, Smolenice, Slovakia, June 2005.

80. J. Ascenso, C. Brites, F. Pereira, "Motion compensated refinement for low complexity pixel based distributed video coding", IEEE Int. Conf. on Advanced Video and Signal-Based Surveillance, Como, Italy, September 2005.

81. L. Natário, C. Brites, J. Ascenso, F. Pereira, "Extrapolating side information for low-delay pixel-domain distributed video coding", Int. Workshop on Very Low Bitrate Video Coding, Sardinia, Italy, September 2005.

82. A. Trapanese, M. Tagliasacchi, S. Tubaro, J. Ascenso, C. Brites, F. Pereira, "Embedding a block-based intra mode in frame-based pixel domain Wyner-Ziv video Coding", Int. Workshop on Very Low Bitrate Video Coding, Sardinia, Italy, September 2005.

83. A. Trapanese, M. Tagliasacchi, S. Tubaro, J. Ascenso, C. Brites, F. Pereira, "Improved correlation noise statistics modeling in frame-based pixel domain Wyner-Ziv video coding", Int. Workshop on Very Low Bitrate Video Coding, Sardinia, Italy, September 2005.

84. F. Pereira, "A triple user characterization model for video adaptation and quality of experience evaluation", IEEE Int. Workshop on Multimedia Signal Processing (MMSP'05), Shanghai, China, November 2005.

2006

85. L. Ducla Soares, F. Pereira, "Spatial scene level shape error concealment for segmented video", Picture Coding Symposium (PCS'06), Beijing, China, April 2006.

86. C. Brites, J. Ascenso, F. Pereira, "Modeling correlation noise statistics at decoder for pixel based Wyner-Ziv video coding", Picture Coding Symposium (PCS'06), Beijing, China, April 2006.

87. J. Baltazar, P. Pinho, F. Pereira, "Visual attention driven image to video transmoding", Picture Coding Symposium (PCS'06), Beijing, China, April 2006.

88. C. Brites, J. Ascenso, F. Pereira, "Improving transform domain Wyner-Ziv video coding performance", IEEE Int. Conf. on Acoustics, Speech, and Signal Processing (ICASSP'06), Toulouse, France, May 2006.

89. A. Trapanese, M. Tagliasacchi, S. Tubaro, J. Ascenso, C. Brites, F. Pereira, "Intra mode decision based on spatio-temporal cues in pixel domain Wyner-Ziv video coding", IEEE Int. Conf. on Acoustics, Speech, and Signal Processing (ICASSP'06), Toulouse, France, May 2006.

90. M. Dalai, R. Leonardi, F. Pereira, "Improving turbo codec integration in pixel-domain distributed video coding", IEEE Int. Conf. on Acoustics, Speech, and Signal Processing (ICASSP'06), Toulouse, France, May 2006.

91. C. Brites, J. Ascenso, F. Pereira, "Feedback channel in pixel domain Wyner-Ziv video coding: myths and realities", European Signal Processing Conference (EUSIPCO'06), Florence, Italy, September 2006.

92. P. Pinho, J. Baltazar, F. Pereira, "Integrating low-level and semantic visual cues for improved image-to-video experiences", Int. Conf. on Image Analysis and Recognition (ICIAR'2006), Póvoa de Varzim, Portugal, September 2006.

93. C. Brites, J. Ascenso, F. Pereira, "Studying temporal correlation noise modeling for pixel based Wyner-Ziv video coding", IEEE Int. Conf. on Image Processing (ICIP'2006), Atlanta, GA, USA, October 2006.

94. J. Ascenso, C. Brites, F. Pereira, "Content adaptive Wyner-Ziv video coding driven by motion activity", IEEE Int. Conf. on Image Processing (ICIP'2006), Atlanta, GA, USA, October 2006.

95. L. Ducla Soares, F. Pereira, "Spatio-temporal scene level error concealment for shape and texture data in segmented video content", IEEE Int. Conf. on Image Processing (ICIP'2006), Atlanta, GA, USA, October 2006.

96. M. Tagliasacchi, A. Trapanese, S. Tubaro, J. Ascenso, C. Brites, F. Pereira, "Exploiting spatial redundancy in pixel domain Wyner-Ziv video coding", IEEE Int. Conf. on Image Processing (ICIP'2006), Atlanta, GA, USA, October 2006.

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32. F. Pereira, R. Koenen, "Classification of MPEG-4 applications as supported by basic or extended requirements", Document ISO/IEC/JTC1/SC29/WG11/MPEG94/185, Grimstad, Norway, July 1994.

33. F. Pereira, R. Koenen, "Some improvements on MPEG-4 requirements", Document ISO/IEC/JTC1/SC29/WG11/MPEG94/186, Grimstad, Norway, July 1994.

34. R. Koenen, F. Pereira, "MPEG-4 (requirements) proposal", Ad Hoc Group meeting on MPEG-4 Requirements, Piscataway, NJ, USA, October 1994.

35. R. Koenen, F. Pereira, "Proposal for MPEG-4 direction", Document ISO/IEC/JTC1/SC29/WG11/MPEG94/394, Singapore, November 1994.

36. F. Pereira, "Slides of the MPEG-4 Lausanne seminar", Document ISO/IEC/JTC1/SC29/WG11/MPEG95/292, Tokyo, Japan, July 1995.

37. F. Martins, F. Pereira, "Representation and modeling of solid objects for MPEG-4 synthetic image coding", Document ISO/IEC/JTC1/SC29/WG11/MPEG95/238, Tokyo, Japan, July 1995.

38. P. Geada, F. Pereira, "Demonstration of a content-based multimedia data access application", Document ISO/IEC/JTC1/SC29/WG11/MPEG95/239, Tokyo, Japan, July 1995.

39. F. Pereira, R. Koenen, "Proposal for MPEG-4 general requirements", Document ISO/IEC/JTC1/SC29/WG11/MPEG96/1086, Tampere, Finland, July 1996.

40. T. Alpert, L. Contin, R. Koenen, F. Pereira, "Evaluation protocol for the MPEG-4 error robustness subjective test", Document ISO/IEC/JTC1/SC29/WG11/MPEG96/996, Tampere, Finland, July 1996.

41. R. Koenen, F. Pereira, T. Alpert, L. Contin, "Proposal for evaluation of object-based quality", Document ISO/IEC/JTC1/SC29/WG11/MPEG96/990, Tampere, Finland, July 1996.

42. F. Pereira, "What about profiles in MPEG-4", Document ISO/IEC/JTC1/SC29/WG11/MPEG96/1226, Chicago, IL, USA, September 1996.

43. P. L. Correia, F. Pereira, "Analysis model: what should it be ?", COST 211ter SIM96/47, Ankara, Turkey, October 1996.

44. F. Pereira, "Report of ad hoc group on MPEG requirements (MPEG-4 and MPEG-7)", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/1883, Bristol, United Kingdom, April 1997.

45. F. Pereira, "First proposals for MPEG-7 visual requirements", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/1941, Bristol, United Kingdom, April 1997.

46. F. Pereira, P. Geada, "Sketch-based database searching: a demonstration of an MPEG-7 application", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/1942, Bristol, United Kingdom, April 1997.

47. L. Ducla Soares, F. Pereira, "Error resilient syntax for MPEG-4 I-VOPs", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/1943, Bristol, United Kingdom, April 1997.

48. F. Pereira, "Interproject coordination of ACTS projects on SNHC", Project ACTS MOMUSYS, Deliverable 38, April 1997.

49. F. Pereira, "Report of the Ad Hoc Group on MPEG-7 requirements", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/2209, Stockholm, Sweden, July 1997.

50. F. Pereira, "Proposal for second draf of MPEG-7 requirements", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/2210, Stockholm, Sweden, July 1997.

51. F. Pereira, "Proposal for first draft of MPEG-7 applications", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/2282, Stockholm, Sweden, July 1997.

52. F. Pereira, "Object Content Description Information (OCDI) in MPEG-4", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/2426, Stockholm, Sweden, July 1997.

53. F. Pereira, "Report of the Ad Hoc Group on MPEG-7 requirements", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/2604, Fribourg, Switzerland, October 1997.

54. F. Pereira, "Report of the Ad Hoc Group on Object Content Information (OCI) in MPEG-4", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/2605, Fribourg, Switzerland, October 1997.

55. F. Pereira, "Third draft of MPEG-7 requirements", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/2606, Fribourg, Switzerland, October 1997.

56. R. Koenen, F. Pereira, K. Brandenburg, "Discussion on audio profiles", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/2689, Fribourg, Switzerland, October 1997.

57. F. Pereira, O. Avaro, "Proposal for Object Content Information (OCI) in MPEG-4", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/2694, Fribourg, Switzerland, October 1997.

58. G. Abrantes, F. Pereira, "Results for MPEG-4 facial animation system", Document ISO/IEC/JTC1/SC29/WG11/MPEG97/2697, Fribourg, Switzerland, October 1997.

59. F. Pereira, "Push and pull models in MPEG-7", Document ISO/IEC/JTC1/SC29/WG11/MPEG98/2990, San Jose, CA, USA, February 1998.

60. G. Abrantes, F. Pereira, "Implementation and evaluation of MPEG-4 facial animation tools", Document ISO/IEC/JTC1/SC29/WG11/MPEG98/3312, Tokyo, Japan, March 1998.

61. P. Nunes, F. Pereira, "Rate control in object-based video coding frameworks", Document ISO/IEC/JTC1/SC29/WG11/MPEG98/3593, Dublin, Ireland, July 1998.

62. F. Pereira, "MPEG-7 content donated by portuguese broadcasters (RTP & SIC)", Document ISO/IEC/JTC1/SC29/WG11/MPEG98/3738, Dublin, Ireland, July 1998.

63. F. Pereira, "Revised MPEG-4 applications", Document ISO/IEC/JTC1/SC29/WG11/MPEG98/3867, Atlantic City, NJ, USA, October 1998.

64. F. Pereira, "Some useful data about Portuguese MPEG-7 content", Document ISO/IEC/JTC1/SC29/WG11/MPEG98/3892, Atlantic City, NJ, USA, October 1998.

65. F. Pereira et al., "Final report on standardisation activities", Doc. AC098\IST\WP1.2\DS\P\029\B, Project ACTS MOMUSYS, January 1999.

66. P. Nunes, F. Pereira, "Implementing the MPEG-4 natural visual profiles and levels", Document ISO/IEC/JTC1/SC29/WG11/MPEG99/4878, Vancouver, Canada, July 1999.

67. P. Nunes, F. Pereira, "Implementing the MPEG-4 video buffering verifier for the core profile- some results", Document ISO/IEC/JTC1/SC29/WG11/MPEG99/5168, Melbourne, Australia, October 1999.

68. F. Pereira, "About profiling in MPEG-7", Document ISO/IEC/JTC1/SC29/WG11/MPEG2000/6011, Geneva, Switzerland, May 2000.

69. F .Pereira, "MPEG-7 conformance definition and profiling", Document ISO/IEC/JTC1/SC29/WG11/MPEG2001/6716, Pisa, Italy, January 2001.

70. J. Magalhães, F. Pereira, "User environment characterization in UMA applications", Document ISO/IEC/JTC1/SC29/WG11/MPEG2001/6744, Pisa, Italy, January 2001.

71. J. Valentim, P. Nunes and F. Pereira, "Evaluating MPEG-4 video complexity for an alternative video verifier mechanism complexity model", Document ISO/IEC/JTC1/SC29/WG11/MPEG2001/7028, Singapore, March 2001.

72. J. Magalhães, F. Pereira, "Correction and extensions to MPEG-7 coding formats", Document ISO/IEC/JTC1/SC29/WG11/MPEG2001/7310, Sydney, Australia, July 2001.

73. J. Magalhães, F. Pereira, "Describing user environment for UMA applications", Document ISO/IEC/JTC1/SC29/WG11/MPEG2001/7312, Sydney, Australia, July 2001.

74. F. Pereira, P. Nunes, "Levels for visual profiles", Document ISO/IEC/JTC1/SC29/WG11/MPEG2001/7619, Pattaya, Thailand, December 2001.

75. F. Pereira, "Proposal for MPEG-7 requirements", Document ISO/IEC/JTC1/SC29/WG11/MPEG2001/7620, Pattaya, Thailand, December 2001.

76. I. Burnett, F. Pereira, "Requirement for streaming digital items", Document ISO/IEC/JTC1/SC29/WG11/MPEG2004/11289, Palma de Mayorca, Spain, October 2004.

77. F. Pereira, "MPEG-7: a contribution to understand the present and plan the future", Document ISO/IEC/JTC1/SC29/WG11/MPEG2005/11874, Busan, South Korea, April 2005.

78. F. Pereira, "Proposal for JPEG PLENO requirements", JPEG meeting, Warsaw, Poland, July 2015.

79. J. P. Peixeiro, C. Brites, J. Ascenso, F. Pereira, "Holographic data coding: benchmarking available coding standards", JPEG meeting, Brussels, Belgium, October 2015.

80. G. Alves, E.A.B. Silva, F. Pereira, "Light field coding: benchmarking available coding standards", Doc. WG1m71029, JPEG meeting, La Jolla, CA, USA, February 2016.

81. A. Javaheri, C. Brites, F. Pereira, J. Ascenso, "Subjective and objective quality evaluation of 3D point cloud denoising algorithms", Doc. WG1m75024, JPEG meeting, Sydney, Australia, March 2017.

82. A. Javaheri, C. Brites, F. Pereira, J. Ascenso, "Subjective and objective quality evaluation of compressed point clouds", Doc. WG1m77037, JPEG meeting, Macau SAR, China, October 2017.

83. F. Ferreira, J. Ascenso, C. Brites, F. Pereira, J. Ascenso, "Report on subjective and objective quality assessment of selected learning-based image coding solutions", Doc. WG1m85054, JPEG meeting, San Jose, CA, USA, November 2019.

84. A. M. Tourapis, J. Kim, K. Mammou, D. Singer, F. Pereira, "Scalability support in V-PCC", Doc. WG11m52755, MPEG meeting, Brussels, Belgium, January 2020.

85. A. M. Tourapis, J. Kim, K. Mammou, D. Singer, F. Pereira, "Scalability support in V-PCC", Doc. WG1m86014, JPEG meeting, Sydney, Australia, January 2020.

4.13 Some Statistics

As complementary information, Table 2 shows the Google Scholar citation statistics and h-indexes.

Table 2 – Google Scholar Statistics for 'Fernando Pereira'.

	All	Since 2014
Citations	11125	2673
h-index	48	24
i10-index	150	65

5 KNOWLEDGE TRANSFER

5.1 Short Courses and Tutorials

1. F. Pereira, "MPEG-4: the key for a new generation of multimedia applications", invited tutorial at 5th International Workshop on Interactive Distributed Multimedia Systems and Telecommunication Services, Oslo, Norway, September 1998.

2. F. Pereira, "Applications of MPEG-4", MPEG-4 and MPEG-7 IAB Tutorial Workshop, International Academy of Broadcasting, Montreux, Switzerland, May 2000.

3. F. Pereira, "MPEG-4: media objects and scenes", tutorial day on Multimedia and MPEG, Alpen-Adria-Universität Klagenfurt, Klagenfurt, Austria, July 2002.

4. F. Pereira, "Media representation standards for the new millenium", invited tutorial at Joint International Workshop on Interactive Distributed Multimedia Systems/Protocols for Multimedia Systems (IDMS/PROMS'2002), Coimbra, Portugal, December 2002.

5. F. Pereira, "MPEG standards: media technology for advanced applications", tutorial at IV Conferência de Telecomunicações, Aveiro, Portugal, June 2003.

6. F. Pereira, "MPEG-based audiovisual content adaptation", tutorial at Workshop Moumir, Porto, Portugal, June 2003.

7. R. Van de Walle, I. Burnett, F. Pereira, "Integration of multimedia technologies and MPEG-21", tutorial at IEEE International Conference on Multimedia and Expo (ICME'2003), Baltimore, MD, USA, July 2003.

8. F. Pereira, H. Hellwagner, "MPEG-4/7/21: a family of standards", tutorial at International Conference on Parallel and Distributed Computing (Euro-Par 2003), Klagenfurt, Austria, August 2003.

9. F. Pereira, "MPEG visual representation standards", tutorial as IEEE Distinguished Lecturer at IEEE Workshop on Multimedia Compression, Bangalore, India, October 2005.

10. F. Pereira, "Multimedia representation standards: the MPEG case", Summer School on Multimedia Digital Libraries: Machine Learning and Cross-Modal Technologies for Access and Retrieval, San Vincenzo, Italy, June 2006.

11. F. Pereira, "Multimedia application formats: why, how and what", invited talk at Workshop on Advanced Multimedia Standards, Hangzhou, China, October 2006.

12. F. Pereira, O. Au, "MPEG multimedia standards: evolution and recent developments", tutorial at IEEE International Conference on Multimedia and Expo (ICME'2007), Beijing, China, July 2007.

13. F. Pereira, "MPEG multimedia standards: evolution and future developments", tutorial at ACM Multimedia, Augsburg, Germany, September 2007.

14. F. Pereira, "Video coding technologies: past, present and future", tutorial at IEEE Asia Pacific Conference on Circuits and Systems (APCCAS'2008), Macau, China, December 2008.

15. F. Pereira, "Recent achievements on video coding", VISNET II Summer School, Istanbul, Turkey, June 2009.

16. F. Pereira, "Mobile video compression", tutorial at 5th International Mobile Multimedia Communications Conference, London, United Kingdom, September 2009.

17. F. Pereira, "3D video coding: the predictive and distributed approaches", International Telecommunications Symposium'2014, San Paulo, Brazil, August 2014.

18. F. Pereira, "Plenoptic imaging representation", European Signal Processing Conference (EUSIPCO'2015), Nice, France, August 2015.

19. J. Ascenso, F. Pereira, "Point cloud coding: the status quo", European Signal Processing Conference (EUSIPCO'2019), La Coruna, Spain, September 2019.

20. J. Ascenso, F. Pereira, "Point cloud coding: the status quo", IEEE Int. Conf. on Multimedia and Expo (ICME'2020), London, United Kingdom, July 2020.

5.2 Conferences and Other Events Organization

5.2.1 National Conference Committees

1. Member of the Scientific Committee of the Portuguese Conference on Pattern Recognition (RECPAD'98), Lisbon, Portugal, March 1998.

2. Member of the Organizing Committee of the Conferência de Telecomunicações (CONFTELE'99), Sesimbra, Portugal, April 1999.

3. Member of the Program Committee of the Encontro Português de Computação Gráfica, Lisbon, Portugal, October 2001.

4. Member of the Program Committee of the Conferência de Redes de Computadores (CRC'2002), Faro, Portugal, September 2002.

5. Member of the Program Committee of the Conferência de Redes de Computadores (CRC'2003), Bragança, Portugal, September 2003.

6. Member of the Program Committee of the Encontro Português de Computação Gráfica, Porto, Portugal, October 2003.

7. Member of the Technical Committee of the Conferência de Telecomunicações (CONFTELE'07), Peniche, Portugal, May 2007.

8. Member of the Program Committee of the Encontro Português de Computação Gráfica, Porto Salvo, Portugal, October 2007.

9. Member of the Technical Committee of the Conferência de Telecomunicações (CONFTELE'09), Santa Maria da Feira, Portugal, May 2009.

10. Member of the Program Committee of the Encontro Português de Computação Gráfica, Covilhã, Portugal, October 2009.

11. Member of the Technical Committee of the Conferência de Telecomunicações (CONFTELE'13), Castelo Branco, Portugal, May 2013.

12. Member of the Scientific Committee of the Encontro Português de Computação Gráfica, Leiria, Portugal, November 2014.

13. Member of the Technical Committee of the Conferência de Telecomunicações (CONFTELE'19), Lisbon, Portugal, June 2019.

5.2.2 International Conference Committees

1. Member of the Scientific Committee of the Picture Coding Symposium (PCS'96), Melbourne, Australia, March 1996.

2. Member of the Program Committee of IMAGECOM'96, Bordeaux, France, May 1996.

3. Member of the Program Committee of the European Conference on Multimedia Applications, Services and Techniques (ECMAST'96), Louvain-la-Neuve, Belgium, May 1996.

4. Member of the Scientific Committee of the European Signal Processing Conference (EUSIPCO' 96), Trieste, Italy, September 1996.

5. Member of the Program Committee of the European Conference on Multimedia Applications, Services and Techniques (ECMAST'97), Milan, Italy, May 1997.

6.   Member of the Steering Committee of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'97), Louvain-la-Neuve, Belgium, June 1997.

7.   **Chair** of the 1st MPEG-4 Seminar, Fribourg, Switzerland, November 1997.

8.   Member of the Organizing Committee of the 1st Multimedia Technical Exposition, Fribourg, Switzerland, November 1997.

9.   **Chair** of the 2nd MPEG-4 Seminar, San Jose, CA, USA, February 1998.

10. Member of the Program Committee of the European Conference on Multimedia Applications, Services and Techniques (ECMAST'98), Berlin, Germany, May 1998.

11. Member of the Scientific Committee of the European Signal Processing Conference (EUSIPCO' 98), Rhodes, Greece, September 1998.

12. Member of the Program Committee of the Int. Workshop on Very Low Bitrate Video Coding (VLBV'98), Urbana, IL, USA, October 1998.

13. Member of the Program Committee of the Visual Communications and Image Processing Conference (VCIP'99), San Jose, CA, USA, January 1999.

14. Member of the Program Committee of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'99), Berlin, Germany, May 1999.

15. Member of the Program Committee of the Int. Conf. on Visual Information Systems (VISUAL'99), Amsterdam, Netherlands, June 1999.

16. **Chair** of the 3rd MPEG-4 Seminar, Vancouver, Canada, July 1999.

17. Member of the Program Committee of the IEEE Int. Conf. on Multimedia Computing and Systems (ICMCS'99), Florence, Italy, June 1999.

18. Member of the Program Committee of the Workshop on Content-Based Multimedia Indexing (CBMI'99), Toulouse, France, October 1999.

19. Member of the Scientific Committee of the Int. Workshop on Very Low Bitrate Video Coding (VLBV'99), Kyoto, Japan, October 1999.

2000

20. Member of the Program Committee of the Visual Communications and Image Processing Conference (VCIP'2000), Perth, Australia, June 2000.

21. Member of the Scientific Committee of the Int. Symposium on Image/Video Communication over Fixed and Mobile Network, Rabat, Morocco, April 2000.

22. Member of the Technical Committee of the Int. Packet Video Workshop, Cagliari, Italy, May 2000.

23. Member of the Organizing Committee of the 1st Workshop and Exhibition on MPEG-4 held in the context of ISCAS 2000, Geneva, Switzerland, May 2000.

2001

24. Member of the Program Committee of the Visual Communications and Image Processing Conference (VCIP'2001), San Jose, CA, USA, January 2001.

25. Member of the Scientific Committee of the Picture Coding Symposium (PCS'2001), Seoul, South Korea, April 2001.

26. Member of the Technical Committee of the Int. Packet Video Workshop, Taejon, South Korea, April 2001.

27. **President** of the Program Committee of the Int. Conference on Media Futures, Florence, Italy, May 2001.

28. Member of the Program Committee of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2001), Tampere, Finland, May 2001.

29. Member of the Organizing Committee of the Workshop and Exhibition on MPEG-4 as Tutorials Chair, San Jose, CA, USA, June 2001.

30. Member of the Program Committee of the Symposium on Advanced Concepts for Intelligent Vision Systems, Baden-Baden, Germany, July 2001.

31. Member of the Program Committee of the EURASIP Conference on Digital Signal Processing for Multimedia Communications and Services, Budapest, Hungary, September 2001.

32. Member of the Program Committee of the Int. Workshop on Interactive Distributed Multimedia Systems, Lancaster, United Kingdom, September 2001.

33. Member of the Program Committee of the IEEE Int. Conf. on Image Processing (ICIP'2001), Thessaloniki, Greece, October 2001.

34. Member of the Scientific Committee of the Int. Workshop on Very Low Bitrate Video Coding (VLVB'2001), Athens, Greece, October 2001.

2002

35.   Member of the Program Committee of the Int. Conf. on Visual Information Systems (VIS'2002), Hsin Chu City, Taiwan, March 2002.

36.   Member of the Technical Committee of the Int. Packet Video Workshop, Pittsburgh, PA, USA, April 2002.

37.   Member of the Organizing Committee of the Workshop and Exhibition on MPEG-4 as Tutorials Chair, San Jose, CA, USA, June 2002.

38.   Member of the Organizing Committee of the IEEE Int. Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC'2002), Lisbon, Portugal, September 2002.

39.   Member of the Organizing Committee of the IEEE Int. Conf. on Image Processing (ICIP'2002) as European Liaison, Rochester, NY, USA, September 2002.

40.   Member of the Program Committee of the 4th Symposium on Advanced Concepts for Intelligent Vision Systems (ACIVS'2002), Ghent, Belgium, September 2002.

41.   Member of the Program Committee of the Joint Int. Workshop on Interactive Distributed Multimedia Systems/Protocols for Multimedia Systems (IDMS/PROMS'2002), Coimbra, Portugal, November 2002.

2003

42.   Member of the Scientific Committee of the Picture Coding Symposium (PCS'2003), St-Malo, France, April 2003.

43.   Member of the Technical Committee of the Int. Packet Video Workshop, Nantes, France, April 2003.

44.   Member of the Program Committee of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2003), London, United Kingdom, April 2003.

45.   Member of the Program Committee of the Int. Symposium on Signal Processing and its Applications (ISSPA'2003), Paris, France, May 2003.

46.   Member of the Program Committee of the EURASIP Conference focused on Video/Image Processing and Multimedia Communications (EC-VIP-MC'2003), Zagreb, Croatia, July 2003.

47.   Member of the Program Committee of the IEEE Int. Conf. on High Speed Networks and Multimedia Communications, Estoril, Portugal, July 2003.

48. **Track Chair** of the Program Committee of the IEEE Int. Conf. on Multimedia and Expo (ICME'2003), Baltimore, MD, USA, July 2003.

49. **Global chair** for the topic Distributed Systems and Distributed Multimedia at the Int. Conf. on Parallel and Distributed Computing (Euro-Par'2003), Klagenfurt, Austria, August 2003.

50. **Tutorials Chair** in the Program Committee of the IEEE Int. Conf. on Image Processing (ICIP'2003), Barcelona, Spain, September 2003.

51. Member of the Scientific Committee of the Int. Workshop on Very Low Bitrate Video Coding (VLVB'2003), Madrid, Spain, September 2003.

52. Member of the Program Committee of the Symposium on Advanced Concepts for Intelligent Vision Systems (ACIVS'2003), Ghent, Belgium, September 2003.

53. Member of the Program Committee of the Int. Conf. on Visual Information Systems (VIS'2003), Miami, FL, USA, September 2003.

54. Member of the Program Committee of the Int. Workshop on Multimedia Interactive Protocols and Systems (MIPS'2003), Naples, Italy, November 2003.

55. Member of the Program Committee of the Int. Conf. on Information, Communications and Signal Processing (ICICS'2003), Singapore, December 2003.

2004

56. **General Chair** of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2004), Lisbon, Portugal, April 2004.

57. Member of the Program Committee of the IEEE Int. Conf. on Multimedia and Expo (ICME'2004), Taipei, Taiwan, June 2004.

58. Member of the Scientific Committee of the Int. Symposium on Image/Video Communications over Fixed and Mobile Networks (ISIVC'04), Brest, France, July 2004.

59. Member of the Program Committee of the Int. Conf. on Pattern Recognition (ICPR'2004), Cambridge, United Kingdom, August 2004.

60. Member of the Program Committee of the Symposium on Advanced Concepts for Intelligent Vision Systems (ACIVS'2004), Brussels, Belgium, August-September 2004.

61. Member of the Program Committee of the Int. Conf. on Visual Information Systems (VIS'2004), San Francisco, CA, USA, September 2004.

62. Member of the Program Committee of the European Signal Processing Conference (EUSIPCO' 2004), Vienna, Austria, September 2004.

63. Member of the Program Committee of the Int. Workshop on Systems, Signals and Image Processing (IWSSIP'04), Poznan, Poland, September 2004.

64. Member of the Program and Advisory Committee of the Int. Conf. on Image Analysis and Recognition (ICIAR'2004), Porto, Portugal, September-October 2004.

65. Member of the Program Committee of the IEEE Int. Conf. on Image Processing (ICIP'2004), Singapore, October 2004.

66. Member of the Technical Committee of the European Workshop on the Integration of Knowledge, Semantic and Digital Media Technologies, London, United Kingdom, November 2004.

67. Member of the Scientific Committee of the Picture Coding Symposium (PCS'2004), San Francisco, CA, USA, December 2004.

68. Member of the Technical Committee of the Int. Packet Video Workshop, Irvine, CA, USA, December 2004.

2005

69. Member of the Program Committee of the IASTED Int. Conf. on Internet and Multimedia Systems and Applications (EuroIMSA'2005), Grindelwald, Switzerland, February 2005.

70. Member of the Program Committee of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2005), Montreux, Switzerland, April 2005.

71. Member of the Program Committee of the Int. Workshop on Content-Based Multimedia Indexing (CBMI'2005), Riga, Latvia, June 2005.

72. Member of the Program Committee of the Int. Conf. on Multimedia Services Access Networks (MSAN'2005), Orlando, FL, USA, June 2005.

73. Member of the Reviewing Committee of the Iberian Conf. on Pattern Recognition and Image Analysis (IbPRIA'2005), Estoril, Portugal, June 2005.

74. **Track chair** of the IEEE Int. Conf. on Multimedia and Expo (ICME'2005), Amsterdam, Netherlands, July 2005.

75. Member of the Program Committee of the Int. Conf. on Visual Information Systems (VIS'2005), Amsterdam, Netherlands, July 2005.

76. Member of the Program Committee of the Visual Communications and Image Processing Conference (VCIP'2005), Beijing, China, July 2005.

77. Member of the Program Committee of the Int. Symposium on Signal Processing and its Applications (ISSPA'2005), Sydney, Australia, August 2005.

78. **President** of the Technical Committee of the Int. Workshop on Very Low Bitrate Video Coding (VLVB'2005), Cagliari, Italy, September 2005.

79. Member of the Program Committee of the IEEE Int. Conf. on Image Processing (ICIP'2005), Genova, Italy, September 2005.

80. Member of the Program and Advisory Committee of the Int. Conf. on Image Analysis and Recognition (ICIAR'2005), Toronto, Canada, September 2005.

81. Member of the Program Committee of the Int. Workshop on Systems, Signals and Image Processing (IWSSIP'05), Chalkida, Greece, September 2005.

82. Member of the Program Committee of the Symposium on Advanced Concepts for Intelligent Vision Systems (ACIVS'2005), Antwerp, Belgium, September 2005.

83. Member of the Program Committee of the Int. Conf. on Information, Communications & Signal Processing (ICICS'2005), Bangkok, Thailand, December 2005.

2006

84. Member of the Technical Committee of the Int. Workshop on Video Processing and Quality Metrics for Consumer Electronics (VPQM'06), Scottsdale, AZ, USA, January 2006.

85. Member of the Technical Committee of the Int. Symposium on Communications, Control and Signal Processing (ISCCSP'2006), Marrakech, Morocco, March 2006.

86. Member of the Technical Committee of the Int. Packet Video Workshop, Hangzhou, China, April 2006.

87. Member of the Scientific Committee of the Picture Coding Symposium (PCS'2006), Beijing, China, April 2006.

88. Member of the Program Committee of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2006), Seoul, South Korea, April 2006.

89. Member of the Program Committee of the Int. Conf. on Telecommunications (ICT'2006), Funchal, Portugal, May 2006.

90. Member of the Program Committee of the Workshop on Visual Computing and Multimedia, Glasgow, Scotland, May 2006.

91. Member of the Program Committee of the Int. Workshop on Semantic Web Annotations for Multimedia (SWAMM'2006), Edinburgh, Scotland, May 2006.

92. Member of the Program Committee of the IEE Visual Information Engineering (VIE'2006), Bangalore, India, September 2006.

93. Member of the Program Committee of the Int. Conf. on Image Analysis and Recognition (ICIAR'2006), Póvoa de Varzim, Portugal, September 2006.

94. Member of the Program Committee of the Symposium on Advanced Concepts for Intelligent Vision Systems (ACIVS'2006), Antwerp, Belgium, September 2006.

95. Member of the Program Committee of the Int. Mobile and Multimedia Communications Conference (MobiMedia'2006), Alghero, Italy, September 2006.

96. Member of the Program Committee of the IEEE Int. Conf. on Image Processing (ICIP'2006), Atlanta, GA, USA, October 2006.

97. Member of the Scientific Committee of the Iberoamerican Congress on Pattern Recognition (CIARP'2006), Cancun, Mexico, November 2006.

2007

98. Member of the Technical Committee of the Int. Workshop on Video Processing and Quality Metrics for Consumer Electronics (VPQM'07), Scottsdale, AZ, USA, January 2007.

99. Member of the Program Committee of the Visual Communications and Image Processing Conference (VCIP'2007), San Jose, CA, USA, January 2007.

100. Member of the Technical Committee of the Int. Symposium on Signal Processing and its Applications (ISSPA'07), Sharjah, United Arab Emirates, February 2007.

101. Member of the Technical Committee of the Int. Conf. on Visual Information Systems (VISUAL'2007), Shanghai, China, June 2007.

102. Member of the Program Committee of the Int. Workshop on Content-Based Multimedia Indexing (CBMI'2007), Bordeaux, France, June 2007.

103. Member of the Program Committee of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2007), Santorini, Greece, June 2007.

104. **Track chair** of the IEEE Int. Conf. on Multimedia and Expo (ICME'2007), Beijing, China, July 2007.

105. Member of the Technical Committee of the Visual Information Engineering Conference (VIE'2007), London, United Kingdom, July 2007.

106. Member of the Program Committee of the Int. Mobile and Multimedia Communications Conference (MobiMedia'2007), Nafpaktos, Greece, August 2007.

107. Member of the Program Committee of the Int. Conf. on Image Analysis and Recognition (ICIAR'2007), Montreal, Canada, August 2007.

108. Member of the Program Committee of the Symposium on Advanced Concepts for Intelligent Vision Systems (ACIVS'2007), Delft, Netherlands, August 2007.

109. Member of the Scientific Committee of the Int. Conf. on Image Analysis and Processing (ICIAP'2007), Modena, Italy, September 2007.

110. Member of the Program Committee of the ACM Multimedia, Augsburg, Germany, September 2007.

111. Member of the Technical Committee of the IEEE Int. Conf. on Advanced Video and Signal based Surveillance (AVSS'2007), London, United Kingdom, September 2007.

112. Member of the Program Committee of the IEEE Int. Conf. on Image Processing (ICIP'2007), Santo Antonio, TX, USA, September 2007.

113. Member of the Program Committee of the European Signal Processing Conference (EUSIPCO'2007), Poznan, Poland, September 2007.

114. Member of the Technical Committee of the IEEE Int. Workshop on Multimedia Signal Processing (MMSP'07), Chania, Greece, October 2007.

115. **General Chair** of the Picture Coding Symposium (PCS'2007), Lisbon, Portugal, November 2007.

116. Member of the Technical Committee of the Int. Packet Video Workshop, Lausanne, Switzerland, November 2007.

117. Member of the Scientific Committee of the Iberoamerican Congress on Pattern Recognition (CIARP'2007), Viña del Mar, Valparaiso, Chile, November 2007.

118. Member of the Advisory Committee of the IEEE Int. Conf. on Signal Processing and Communications, Dubai, United Arab Emirates, November 2007.

119. Member of the Technical Committee of the Pacific-Rim Conference on Multimedia (PCM'07), Hong-Kong, December 2007.

2008

120. Member of the Technical Committee of the Int. Conf. on Ubiquitous Information Management and Communication (ICUIMC'08), Suwon, South Korea, January 2008.

121. Member of the Program Committee of the Visual Communications and Image Processing Conference (VCIP'2008), San Jose, CA, USA, January 2008.

122. Member of the Program Committee of the Int. Workshop on Signal Processing and its Applications (WoSPA'2008), Sharjah, United Arab Emirates, March 2008.

123. Member of the Program Committee of the IEEE Int. Symposium on Consumer Electronics (ISCE'2008), Albufeira, Portugal, April 2008.

124. **President** of the Technical Committee of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2008), Klagenfurt, Austria, May 2008.

125. Member of the Steering Committee of the IEEE Int. Conf. on Multimedia and Expo (ICME'2008) on behalf of the IEEE Signal Processing Society, Hannover, Germany, June 2008.

126. Member of the Technical Committee of the ACM Int. Conf. on Image and Video Retrieval (CIVR'2008), Niagara Falls, Canada, July 2008.

127. **Area Chair** on Image & Multidimensional Signal Processing at the European Signal Processing Conference (EUSIPCO' 2008), Lausanne, Switzerland, August 2008.

128. Member of the Program Committee of the IEEE Int. Workshop on Multimedia Analysis and Processing (IMAP'2008), St. Thomas, Virgin Island, USA, August 2008.

129. Member of the Program Committee of the Workshop on Activity Monitoring by Multi-Camera Surveillance Systems (AMMCSS'2008), Stanford, CA, USA, September 2008.

130. Member of the Technical Committee of the Int. Conf. on Visual Information Systems (VISUAL'2008), Salerno, Italy, September 2008.

131. Member of the Technical Committee of the IEEE Int. Workshop on Multimedia Signal Processing (MMSP'08), Cairns, Australia, October 2008.

132. Member of the Program Committee of the Symposium on Advanced Concepts for Intelligent Vision Systems (ACIVS'2008), Juan-les-Pins, France, October 2008.

2009

133. Member of the Program Committee of the Int. Multimedia Modeling Conference (MMM'2009), Sophia-Antipolis, France, January 2009.

134. Member of the Program Committee of the Visual Communications and Image Processing Conference (VCIP'2009), San Jose, CA, USA, January 2009.

135. Member of the Technical Committee of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2009), London, United Kingdom, May 2009.

136. Member of the Scientific Committee of the Picture Coding Symposium (PCS'2009), Chicago, IL, USA, May 2009.

137. Member of the Steering Committee of the Int. Packet Video Workshop (PV'2009), Seattle, WA, USA, May 2009.

138. Member of the Program Committee of the Workshop on Content-Based Multimedia Indexing (CBMI'09), Chania, Crete, Greece, June 2009.

139. Member of the Organizing Committee of the Int. Workshop on Quality of Multimedia Experience (QoMex'2009), San Diego, CA, USA, July 2009.

140. Member of the Program Committee of the Int. Conf. on Image Analysis and Recognition (ICIAR'2009), Halifax, Canada, July 2009.

141. Member of the Steering Committee of the IEEE Int. Conf. on Multimedia and Expo (ICME'2009) on behalf of the IEEE Signal Processing Society, New York, NY, USA, July 2009.

142. **Area Chair** on Image & Multidimensional Signal Processing at the European Signal Processing Conference (EUSIPCO' 2009), Glasgow, Scotland, August 2009.

143. Member of the Technical Committee of the IEEE Int. Conf. on Advanced Video and Signal based Surveillance (AVSS'2009), Genova, Italy, September 2009.

144. Member of the Program Committee of the Int. Mobile and Multimedia Communications Conference (MobiMedia'2009), London, United Kingdom, September 2009.

145. Member of the Scientific Committee of the Int. Conf. on Image Analysis and Processing (ICIAP'2009), Salerno, Italy, September 2009.

146. Member of the Program Committee of the Symposium on Advanced Concepts for Intelligent Vision Systems (ACIVS'2009), Bordeaux, France, September-October 2009.

147. Member of the Technical Committee of the IEEE Int. Workshop on Multimedia Signal Processing (MMSP'09), Rio de Janeiro, Brazil, October 2009.

148. Member of the Program Committee of the ACM Multimedia (Content track), Beijing, China, October 2009.

149. Member of the Program Committee of the IEEE Pacific-Rim Conference on Multimedia, Bangkok, Thailand, December 2009.

2010

150. Member of the Program Committee of the Visual Information Processing and Communication Conference (VIPC'2010), San Jose, CA, USA, January 2010.

151. Member of the Program Committee of the Int. Multimedia Modeling Conference (MMM'2010), Chongqing, China, January 2010.

152. Member of the Technical Committee of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2010), Desenzano del Garda, Italy, April 2010.

153. Member of the Program Committee of the IEEE Mediterranean Electrotechnical Conference (MELECON'2010), Valletta, Malta, April 2010.

154. Member of the Program Committee of the Int. Workshop on Quality of Multimedia Experience (QoMex'2010), Trondheim, Norway, June 2010.

155. Member of the Program Committee of the Int. Workshop on Content-Based Multimedia Indexing (CBMI'2010), Grenoble, France, June 2010.

156. Member of the Technical Committee of the IEEE Int. Conf. on Multimedia and Expo (ICME'2010), Singapore, June 2010.

157. Member of the Program Committee of the Int. Conf. on Image Analysis and Recognition (ICIAR'2010), Póvoa de Varzim, Portugal, June 2010.

158. Member of the Program Committee of the Int. Conf. on Systems, Signals and Image Processing (IWSSIP'2010), Rio de Janeiro, Brazil, June 2010.

159. Member of the Organizing Committee of the Visual Communications and Image Processing Conference (VCIP'2009), Huang Shan, China, July 2010.

160. Member of the Program Committee of the Workshop on Activity Monitoring by Multi-Camera Surveillance Systems (AMMCSS'2010), Boston, MS, USA, August 2010.

161. Member of the Program Committee of the IEEE Pacific-Rim Conference on Multimedia, Shanghai, China, September 2010.

162. **Technical Program Chair** of the IEEE Int. Conf. on Image Processing (ICIP'2010), Hong Kong, September 2010.

163. Member of the Technical Committee of the Int. Mobile Multimedia Communications Conference (MobiMedia'2010), Lisbon, Portugal, September 2010.

164. Member of the Program Committee of the Int. Telecommunications Symposium (ITS), Manaus, Amazonas, Brazil, September 2010.

165. Member of the Technical Committee of the IEEE Int. Workshop on Multimedia Signal Processing (MMSP'10), Saint-Malo, France, October 2010.

166. Member of the Technical Committee of the Int. Symposium on Image/Video Communications and Mobile Networks (ISIVC'2010), Rabat, Morocco, October 2010.

167. Member of the Program Committee of the ACM Multimedia (Applications, Systems e Short tracks), Florence, Italy, October 2010.

168. Member of the Scientific Committee of the Picture Coding Symposium (PCS'2010), Nagoya, Japan, December 2010.

169. Member of the Program Committee of the Symposium on Advanced Concepts for Intelligent Vision Systems (ACIVS'2010), Sydney, Australia, December 2010.

2011

170. Member of the Program Committee of the Int. Multimedia Modeling Conference (MMM'2011), Taipei, Taiwan, January 2011.

171. Member of the Technical Committee of the Int. Conf. on Computer as a Tool (EUROCON'2011), Lisbon, Portugal, April 2011.

172. Member of the Technical Committee of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2011), Delft, Netherlands, April 2011.

173. Member of the Program Committee of the Workshop on Content-Based Multimedia Indexing (CBMI'11), Madrid, Spain, June 2011.

174. Member of the Program Committee of the Int. Conf. on Image Analysis and Recognition (ICIAR'2011), Burnaby, Canada, June 2011.

175. Member of the Technical Committee of the Int. Conf. on Digital Signal Processing (DSP'2011), Corfu, Greece, July 2011.

176. Member of the Technical Committee of the IEEE Int. Conf. on Multimedia and Expo (ICME'2011), Barcelona, Spain, July 2011.

177. Member of the Technical Committee of the Int. Conf. on Internet Multimedia Computing and Service (ICIMCS'2011), Chengdu, China, August 2011.

178. Member of the Program Committee of the Symposium on Advanced Concepts for Intelligent Vision Systems (ACIVS'2011), Ghent, Belgium, August 2011.

179. Member of the Technical Committee of the IEEE Int. Conf. on Advanced Video and Signal based Surveillance (AVSS'2011), Klagenfurt, Austria, September 2011.

180. Member of the Technical Committee of the Int. Mobile Multimedia Communications Conference (MobiMedia'2011), Cagliari, Italy, September 2011.

181. Member of the Program Committee of the European Signal Processing Conference (EUSIPCO' 2011), Barcelona, Spain, September 2011.

182. Member of the Program Committee of the Int. Workshop on Quality of Multimedia Experience (QoMex'2011), Mechelen, Belgium, September 2011.

183. Member of the Program Committee of the IEEE Int. Conf. on Image Processing (ICIP'2011), Brussels, Belgium, September 2011.

184. Member of the Technical Committee of the IEEE Int. Workshop on Multimedia Signal Processing (MMSP'11), Hangzhou, China, October 2011.

185. Member of the Program Committee of the Conference on Electronics, Telecommunications and Computers (CETC'2011), Lisbon, Portugal, November 2011.

2012

186. Member of the Program Committee of the Int. Multimedia Modeling Conference (MMM'2012), Klagenfurt, Austria, January 2012.

187. **President** of the Technical Committee of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2012), Dublin, Ireland, May 2012.

188. Member of the Scientific Committee of the Picture Coding Symposium (PCS'2012), Krakow, Poland, May 2012.

189. Member of the Technical Committee of the Int. Packet Video Workshop (PV'2012), Munich, Germany, May 2012.

190. Member of the Program Committee of the Int. Conf. on Image Analysis and Recognition (ICIAR'2012), Aveiro, Portugal, June 2012.

191. Member of the Program Committee of the Workshop on Content-Based Multimedia Indexing (CBMI'12), Annecy, France, June 2012.

192. **Track Chair** of the IEEE Int. Conf. on Multimedia and Expo (ICME'2012), Melbourne, Australia, July 2012.

193. Member of the Program Committee of the The IET Image Processing Conference (IET'2012), London, United Kingdom, July 2012.

194. Member of the Program Scientific of the Workshop on Quality of Multimedia Experience (QoMex'2012), Yarra Valley, Australia, July 2012.

195. Member of the Program Committee of the European Signal Processing Conference (EUSIPCO' 2012), Bucharest, Romania, August 2012.

196. Member of the Technical Committee of the Int. Conf. on Signals and Electronic Systems (ICSES'2012), Krakow, Poland, September 2012.

197. Member of the Program Committee of the Symposium on Advanced Concepts for Intelligent Vision Systems (ACIVS'2012), Brno, Check Republic, September 2012.

198. Member of the Program Committee of the Int. Conf. on Signals and Electronic Systems (ICSES'2012), Wroclaw, Poland, September 2012.

199. Member of the Technical Committee of the IEEE Int. Workshop on Multimedia Signal Processing (MMSP'12), Banff, Canada, September 2012.

2013

200. Member of the Program Committee of the Visual Information Processing and Communication Conference (VIPC'2013), San Jose, CA, USA, January 2013.

201. Member of the Program Committee of the Int. Multimedia Modeling Conference (MMM'2013), Huangshan, China, January 2013.

202. Member of the Program Committee of the Workshop on Content-Based Multimedia Indexing (CBMI'13), Veszprém, Hungary, June 2013.

203. Member of the Technical Committee of the European Workshop on Visual Information Processing (EUVIP'2013), Paris, France, June 2013.

204. Member of the Program Committee of the Int. Conf. on Image Analysis and Recognition (ICIAR'2013), Póvoa de Varzim, Portugal, June 2013.

205. Member of the Technical Committee of the IEEE Image, Video and Multidimensional Signal Processing Technical Committee Workshop on "3D Image/Video Technologies and Applications" (IVMSP'2013), Seoul, South Korea, June 2013.

206. **Track Chair** of the IEEE Int. Conf. on Multimedia and Expo (ICME'2013), San Jose, CA, USA, July 2013.

207. Member of the Technical Committee of the Int. on Digital Signal Processing (DSP'2013), Santorini, Greece, July 2013.

208. Member of the Scientific Committee of the Int. Workshop on Quality of Multimedia Experience (QoMex'2013), Klagenfurt, Austria, July 2013.

209. **Special Sessions Chair** of the Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS'2013), Paris, France, July 2013.

210. **Area Chair** on Multidimensional Signal Processing at the European Signal Processing Conference (EUSIPCO' 2013), Marrakech, Morocco, September 2013.

211. Member of the Technical Committee of the IEEE Int. Workshop on Multimedia Signal Processing (MMSP'13), Pula, Italy, September 2013.

212. Member of the Program Committee of the Symposium on Advanced Concepts for Intelligent Vision Systems (ACIVS'2013), Poznan, Poland, October 2013.

213. Member of the Technical Committee of the Int. Conf. on Digital Image Computing: Techniques and Applications (DICTA'13), Hobart, Australia, November 2013.

214. Member of the Technical Committee of the Int. Packet Video Workshop (PV'2013), San Jose, CA, USA, December 2013.

215. Member of the Scientific Committee of the Picture Coding Symposium (PCS'2013), San Jose, CA, USA, December 2013.

2014

216. Member of the Program Committee of the Int. Multimedia Modeling Conference (MMM'2014), Dublin, Ireland, January 2014.

217. Member of the Program Committee of the Workshop on Content-Based Multimedia Indexing (CBMI'14), Klagenfurt, Austria, June 2014.

218. **Track Chair** on Multimedia Signal Processing of the IEEE Int. Conf. on Multimedia and Expo (ICME'2014), Chengdu, China, July 2014.

219. Member of the Scientific Committee of the Int. Workshop on Quality of Multimedia Experience (QoMex'2014), Singapore, September 2014.

220. Member of the Technical Committee of the Int. Conf. on Signals and Electronic Systems (ICSES'2014), Poznan, Poland, September 2014.

221. **Tutorials Chair** of the European Signal Processing Conference (EUSIPCO' 2014), Lisbon, Portugal, September 2014.

222. **Technical Program Chair** of the IEEE Int. Workshop on Multimedia Signal Processing (MMSP'14), Jakarta, Indonesia, September 2014.

223. Member of the Technical Committee of the Int. Conf. on Digital Image Computing: Techniques and Applications (DICTA'14), Wollongong, Australia, November 2014.

224. Member of the Technical Committee of the European Workshop on Visual Information Processing (EUVIP'2014), Paris, France, December 2014.

225. **Awards Chair** of the Visual Communications and Image Processing Conference (VCIP'2014), Valletta, Malta, December 2014.

2015

226. Member of the Program Committee of the Int. Multimedia Modeling Conference (MMM'2015), Sydney, Australia, January 2015.

227. Member of the Technical Committee of the Int. Workshop on Video Processing and Quality Metrics for Consumer Electronics (VPQM'15), Chandler, AZ, USA, February 2015.

228. Member of the Steering Committee of the Int. Workshop on Quality of Multimedia Experience (QoMex'2015), Costa Navarino, Messinia, Greece, May 2015.

229. Member of the Steering Committee of the Int. Packet Video Workshop (PV'2015), Cairns, Australia, May 2015.

230. Member of the Steering Committee of the Picture Coding Symposium (PCS'2015), Cairns, Australia, May-June 2015.

231. Member of the Program Committee of the Workshop on Content-Based Multimedia Indexing (CBMI'15), Prague, Check Republic, June 2015.

232. Member of the Technical Committee of the Int. Conf. on Digital Image Computing: Techniques and Applications (DICTA'15), Adelaide, Australia, November 2015.

233. **Panel Chair** on Multimedia Signal Processing of the IEEE Int. Conf. on Multimedia and Expo (ICME'2015), Torino, Italy, July 2015.

234. Member of the Technical Committee of the IEEE Latin-American Conf. on Communication (LATICOM'2015), Arequipa, Peru, November 2015.

235. **Area Chair** of the Int. Symposium on Multimedia (ISM'2015), Miami, FL, USA, December 2015.

2016

236. **General Chair** of the Int. Conference on Quality of Multimedia Experience (QoMex'2016), Lisbon, Portugal, May 2016.

237. Member of the Program Committee of the Workshop on Content-Based Multimedia Indexing (CBMI'16), Bucharest, Romania, June 2016.

238. Member of the Technical Committee of the IEEE Image Video and Multidimensional Signal Processing (IVMSP'2016), Bordeaux, France, June 2016.

239. **Panel Chair** on Multimedia Signal Processing of the IEEE Int. Conf. on Multimedia and Expo (ICME'2016), Seattle, WA, USA, July 2016.

240. Member of the Program Committee of the Asia-Pacific Conf. on Multimedia and Broadcasting (APMediaCast'2016), Bali, Indonesia, August 2016.

241. **Technical Program Chair** of the IEEE Int. Conf. on Image Processing (ICIP'2016), Phoenix, AZ, USA, September 2016.

242. Member of the Technical Committee of the Int. Conf. on Signals and Electronic Systems (ICSES'2016), Krakow, Poland, September 2016.

243. Member of the Technical Committee of the European Workshop on Visual Information Processing (EUVIP'2016), Marseille, France, October 2016.

244. Member of the Technical Committee of the Int. Conf. on Digital Image Computing: Techniques and Applications (DICTA'15), Gold Coast, Australia, November-December 2016.

245. Member of the Steering Committee of the Picture Coding Symposium (PCS'2016), Nuremberg, Germany, December 2016.

2017

246. Member of the Program Committee of the Int. Multimedia Modeling Conference (MMM'2017), Reykjavík, Iceland, January 2017.

247. Member of the Steering Committee of the Int. Conference on Quality of Multimedia Experience (QoMex'2017), Erfurt, Germany, May 2017.

248. Member of the Program Committee of the Workshop on Content-Based Multimedia Indexing (CBMI'17), Florence, Italy, June 2017.

249. **European Liaison** of the IEEE Int. Conf. on Multimedia and Expo (ICME'2017), Hong Kong, China, July 2017.

250. **Technical Program Chair** of the Workshop on Hot Topics in 3D Multimedia (Hot3D'2017), Hong Kong, China, September 2017.

251. **Awards Chair** of the IEEE Visual Communications and Image Processing (VCIP'2017), St. Petersburg, FL, USA, December 2017.

252. Member of the Program Committee of the IEEE Int. Symposium on Multimedia (ISM'2017), Taichung, Taiwan, December 2017.

2018

253. Member of the Technical Committee of the European Workshop on Visual Information Processing (EUVIP'2018), Tampere, Finland, November 2018.

254. Member of the Steering Committee of the Workshop on Hot Topics in 3D Multimedia (Hot3D'2018), San Diego, CA, USA, July 2018.

255. Member of the Steering Committee of the Int. Conference on Quality of Multimedia Experience (QoMex'2018), Sardinia, Italy, May 2018.

256. Member of the Steering Committee of the Picture Coding Symposium (PCS'2018), San Francisco, CA, USA, June 2018.

257. Member of the Program Committee of the IEEE Int. Symposium on Multimedia (ISM'2018), Taichung, Taiwan, December 2018.

2019

258. Member of the Steering Committee of the Int. Conference on Quality of Multimedia Experience (QoMex'2019), Berlin, Germany, May 2019.

259. **International Liaison** for the Brazilian Symposium on Telecommunications and Signal Processing (SBrT'2019), Petrópolis, Brazil, September 2019.

260. Member of the Technical Committee of the European Workshop on Visual Information Processing (EUVIP'2019), Rome, Italy, October 2019.

261. Member of the Steering Committee of the Picture Coding Symposium (PCS'2019), Ningbo, China, November 2019.

262. Member of the Program Committee of the IEEE Int. Symposium on Multimedia (ISM'2019), San Diego, CA, USA, December 2019.

2020

263. **Panel Chair** of the IEEE Int. Conference on Visual Communications and Image Processing (VCIP'2020), Hong Kong, December 2020.

264. Member of the Steering Committee of the Int. Conference on Quality of Multimedia Experience (QoMex'2020), Athlone, Ireland, May 2020.

5.2.3 Session Chair

1. Chair of the session entitled "Object-based coding using 2D models", European Workshop on New Techniques for Coding of Video Signals at Very Low Bitrates, Hannover, Germany, December 1993.

2. Chair of the session entitled "Services and applications", RACE Mobile Telecommunications Workshop, Amsterdam, Netherlands, May 1994.

3. Chair of the session entitled "Very low bitrate coding", Picture Coding Symposium (PCS'96), Melbourne, Australia, March 1996.

4. Chair of the special session by invitation entitled "Very low bit rate image coding", European Conference on Multimedia Applications, Services and Techniques (ECMAST'96), Louvain-la-Neuve, Belgium, May 1996.

5. Chair of the session entitled "Model based coding", Int. Workshop on Coding Techniques for Very Low Bitrate Video (VLVB'97), Linkoping, Sweden, July 1997.

6. Chair of the session entitled "Image coding", Portuguese Conference on Pattern Recognition (RECPAD'98), Lisbon, Portugal, March 1998.

7. Chair of the special session by invitation entitled "Multimedia standards and graphics", EUROGRAPHICS'98, Lisbon, Portugal, September 1998.

8. Chair of the session entitled "Telecomunicações", 4th Encontro Nacional do Colégio de Engenharia Electrotécnica, Lisbon, Portugal, May 1999.

9. Chair of the special session by invitation entitled "Multimedia standards", IEEE Int. Conf. on Multimedia Computing and Systems (ICMCS'99), Florence, Italy, June 1999.

10. Chair of the session entitled "Object-based coding", IEEE Int. Conf. on Image Processing (ICIP'2002), Rochester, NY, USA, September 2002.

11. Chair of the session entitled "Standards and related issues", Joint Int. Workshop on Interactive Distributed Multimedia Systems/Protocols for Multimedia Systems (IDMS/PROMS'2002), Coimbra, Portugal, December 2002.

12. Chair of the session entitled "Content based & model based coding", Picture Coding Symposium (PCS'2003), St. Malo, France, April 2003.

13. Chair of the session entitled "Multimodal interfaces", IEEE Int. Conf. on Multimedia and Expo (ICME'2003), Baltimore, MD, USA, July 2003.

14. Chair of the session entitled "Face analysis", IEEE Int. Conf. on Image Processing (ICIP'2003), Barcelona, Spain, September 2003.

15. Chair of the session entitled "Video coding standards", IEEE Int. Conf. on Image Processing (ICIP'2004), Singapore, October 2004.

16. Chair of the session entitled "Image processing", Conference on Telecommunications (CONFTELE'2005), Tomar, Portugal, April 2005.

17. Chair of the session entitled "Video streamings", IEEE Int. Conf. on Multimedia and Expo (ICME'2005), Amsterdam, Netherlands, July 2005.

18. Chair of the session entitled "Video coding algorithms", Visual Communications and Image Processing Conference (VCIP'2005), Beijing, China, July 2005.

19. Chair of the session entitled "Video networking", IEEE Int. Conf. on Image Processing (ICIP'2005), Genova, Italy, September 2005.

20. Chair of the session entitled "Video processing", IEEE Int. Workshop on Multimedia Signal Processing (MMSP'2005), Shanghai, China, October-November 2005.

21. Chair of the session entitled "Next generation video coding", Picture Coding Symposium (PCS'2006), Beijing, China, April 2006.

22. Chair of the session entitled "Motion analysis", Int. Conf. on Image Analysis and Recognition (ICIAR'2006), Póvoa de Varzim, Portugal, September 2006.

23. Chair of the session entitled "Remote sensing and video coding", IEEE Int. Workshop on Multimedia Signal Processing (MMSP'2006), Victoria, Canada, October 2006.

24. Chair of the session entitled "Image and video coding", IEEE Int. Conf. on Image Processing (ICIP'2006), Atlanta, GA, USA, October 2006.

25. Chair of the session entitled "H.264 video coding", IEEE Int. Conf. on Image Processing (ICIP'2007), San Antonio, TX, USA, September 2007.

26. Chair of the session entitled "Best paper award special session", Picture Coding Symposium (PCS'2007), Lisbon, Portugal, November 2007.

27. Chair of the special session entitled "Distributed video coding", IEEE Int. Conf. on Multimedia and Expo (ICME'2008), Hannover, Germany, June 2008.

28. Chair of the session entitled "Image and video coding and encryption", Int. Conf. on Image Analysis and Recognition (ICIAR'2008), Póvoa de Varzim, Portugal, June 2008.

29. Chair of the session entitled "Distributed video coding", IEEE Int. Conf. on Image Processing (ICIP'2008), San Diego, CA, USA, October 2008.

30. Chair of the session entitled "Image Processing", Int. Telecommunications Symposium (ITS), Manaus, Brazil, September 2010.

31. Chair of the special session entitled "Best Student Paper Award", IEEE Int. Conf. on Image Processing (ICIP'2010), Hong Kong, September 2010.

32. Chair of the session entitled "Face Recognition and Understanding", IEEE Int. Conf. on Image Processing (ICIP'2010), Hong Kong, September 2010.

33. Chair of the session entitled "Wireless Communications IV", Int. Conf. on Computer as a Tool (EUROCON'2011), Lisbon, Portugal, April 2011.

34. Chair of the session entitled "Joint Audio Visual Processing", IEEE Int. Conf. on Acoustics, Speech, and Signal Processing (ICASSP'2012), Kyoto, Japan, March 2012.

35. Chair of the session entitled "Visual Sensor Networks", Int. Conf. on Digital Signal Processing (DSP'2012), Santorini, Greece, July 2013.

36. Chair of the session entitled "HEVC/SHVC", Picture Coding Symposium (PCS'2013), San Jose, CA, USA, December 2013.

37. Chair of the session entitled "Evaluation of Current and Future Image Compression Technologies", Picture Coding Symposium (PCS'2015), Cairns, Australia, June 2015.

38. Chair of the session entitled "Image, Video and Multimedia Processing", European Signal Processing Conference (EUSIPCO'2017), Kos, Greece, August 2017.

39. Chair of the session entitled "Image/Video Filtering", European Signal Processing Conference (EUSIPCO'2019), La Coruna, Spain, August 2019.

5.2.4 Panels

1. Member of the experts panel at Picture Coding Symposium (PCS'96), Melbourne, Australia, March 1996.

2. Member of the experts panel at Int. Workshop on Coding Techniques for Very Low Bitrate Video (VLVB'97), Linkoping, Sweden, July 1997.

3. Member of the experts panel on "Video representation, coding and indexing", Int. Workshop on Very Low Bitrate Video Coding (VLBV'98), Urbana, IL, USA, October 1998.

4. Member of the experts panel on MPEG-7, 2nd MPEG-7 Awareness Event, Singapore, March 2001.

5. Member of the experts panel on "MPEG-7 and MPEG-21: developments and prospects", International Workshop on Very Low Bitrate Video Coding (VLBV'2001), Athens, Greece, October 2001.

6. **Chair** of the experts panel on "Content adaptation", Int. Workshop on Very Low Bitrate Video Coding (VLBV'03), Madrid, Spain, September 2003.

7. Member of the experts panel on "Scalable video coding", Visual Communications and Image Processing Conference (VCIP'2005), Beijing, China, July 2005.

8. Member of the experts panel on "Past and future of picture coding", Picture Coding Symposium (PCS'2006), Beijing, China, April 2006.

9. Member of the experts panel on "Distributed video coding", Picture Coding Symposium (PCS'2006), Beijing China, April 2006.

10. Member of the experts panel on "Similarities and differences of processing techniques in audio/speech and image/video processing", IEEE Int. Workshop on Multimedia Signal Processing (MMSP'2006), Victoria, Canada, October 2006.

11. **Chair** of the experts panel on "Quality of experience: tools, targets and trends", IEEE Int. Workshop on Quality of Multimedia Experience (QoMEX'09), San Diego, CA, USA, July 2009.

12. **Chair** of the experts panel on "Quality of experience: tools, targets and trends", IEEE International Workshop on Quality of Multimedia Experience (QoMEX'11), Mechelen, Belgium, September 2011.

5.2.5 Grand Challenges

1. Organizer of the Grand Challenge on "Light-field image compression", IEEE Int. Conf. on Multimedia and Expo (ICME'2016), Seattle, WA, USA, July 2016.

2. Organizer of the Grand Challenge on "Light-field image coding", IEEE Int. Conf. on Image Processing (ICIP'2017), Beijing, China, September 2017.

5.3 Reviewing of Papers for Journals and Conferences

Reviewer of scientific and research papers for hundreds of conferences and workshops along the past three decades and also for the following international journals:

5.3.1 IEEE

- Proceedings of IEEE.

- IEEE Multimedia.

- IEEE Transactions on Multimedia.

- IEEE Transactions on Image Processing.

- IEEE Transactions on Pattern Analysis & Machine Intelligence.

- IEEE Transactions on Circuits and Systems for Video Technology.

- IEEE Transactions on Broadcasting.

- IEEE Transactions on Systems, Man, and Cybernetics.

- IEEE Journal on Selected Areas in Communications.

- IEEE Transactions on Information Technology in Biomedicine.

- IEEE Communications Magazine.

- IEEE Communications Letters.

- IEEE Signal Processing Magazine.

- IEEE Journal of Selected Topics in Signal Processing.

- IEEE Signal Processing Letters.

5.3.2 Elsevier

- Signal Processing.

- Signal Processing: Image Communication.

- Image and Vision Computing.

- Journal of Visual Communication and Image Representation.

- Tsinghua Science & Technology.

5.3.3 Other Editors

- Optical Engineering, SPIE.

- Journal Electronic Imaging, SPIE.

- Multimedia Tools and Applications, Springer.

- EURASIP Journal on Image and Video Processing, Hindawi.

- EURASIP Journal on Advances in Signal Processing, Hindawi.

- Electronic Letters, IEE.

- Image Processing, IET.

- Majlesi Journal of Electrical Engineering.

- Journal Zhejiang University.

- The International Journal on Media Management.

- Journal Franklin Institute.

- International Journal on Semantic Web and Information Systems.

- African Journal of Information & Communication Technology.

- Indian Journal of Economics and Business.

- Recent Patents on Computer Science.

- Korean Telecom Journal, Korean Telecom.

- Integrated Computer-Aided Engineering, IOS Press.

- Journal of Real-Time Imaging, Academic Press.

- ETRI Journal, Electronics and Telecommunications Research Institute.

- International Journal on Electronic Business, Inderscience Publishers.

- International Journal on Semantic Web and Information Systems, Association for Information Systems.

5.4 Publicly Available Applications and Datasets

Only the applications and datasets made publicly available after 2018 are mentioned here:

- *Constant Size Point Cloud Clustering (C2NO)* - Software for the segmentation of point clouds into clusters with the same size and without overlapping.

- *IST-EURECOM Lenslet Light Field Face Database* – First publicly available dataset with lenslet light field images of the faces of 100 subjects in 20 different poses, emotions and occlusions. The dataset includes two sets of face light field images per person, captured with a temporal distance of 1 to 6 months in a total of 100×20×2 images.

- *IST-EURECOM Lenslet Light Field Ear Database* – First publicly available dataset with lenslet light field images of the ears of a set of subjects, in different positions. The dataset includes 536 light field images of 67 subjects, 8 images per subject, captured in two sessions with 4 poses per session.

- *IST Lenslet Light Field Face and Ear Spoofing Database* – First publicly available datasets with light field face and ear artefact images consisting of *bona fide* images and artefact images using different types of presentation attack instruments, such as printed papers and digital displays, for 50 subjects in different poses, emotions and occlusions.

6 UNIVERSITY MANAGEMENT

6.1 Positions at School and Research Institute Boards

1. Responsible for the Multimedia Signal Processing Group at Instituto de Telecomunicações multiple times since its creation in 1993 (then with the name of Image Group).

2. Member of the Executive Committee of the Telecommunications Section of the Department on Electrical and Computer Engineering at Instituto Superior Técnico, October 1994 - October 1996.

3. Surrogate member of the Pedagogical Council Plenary from Instituto Superior Técnico on behalf of the Department on Electrical and Computer Engineering, 1997/98.

4. Coordinator of the Telecommunications profile of the Graduation on Electrical and Computer Engineering at Instituto Superior Técnico, October 2000 - September 2002.

5. Coordinator of the Telecommunications profile of the Master on Electrical and Computer Engineering at Instituto Superior Técnico, December 2001 - December 2003.

6. Vice-President for Teaching and Training of the Department on Electrical and Computer Engineering at Instituto Superior Técnico, April to December 2010.

7. Vice-President for Teaching and Training of the Department on Electrical and Computer Engineering at Instituto Superior Técnico, January 2011 - December 2012.

8. Member of the Scientific Council Plenary from Instituto Superior Técnico, January 2017 - December 2020.

9. Member of the Horizontal Skills Committee in the context of the curricular reform at Instituto Superior Técnico, since July 2019.

6.2 M.Sc. Juries

6.2.1 Portugal Pre-Bologna

1. Opponent for the M.Sc. Thesis entitled "Descodificador flexível de vídeo digital em tempo real" by Maria Teresa M. S. Pinto de Andrade, Faculdade de Engenharia da Universidade do Porto, Porto, Portugal, March 1992.

2.   Opponent for the M.Sc. Thesis entitled "Codificador H.261 para PC" by António José Nunes Navarro Rodrigues, Faculdade de Ciências e Tecnologia da Universidade de Coimbra, Coimbra, Portugal, June 1993.

3.   Opponent for the M.Sc. Thesis entitled "Codificação de vídeo para redes ATM compatível com a recomendação H.261" by Luís Alberto da Silva Cruz, Faculdade de Ciências e Tecnologia da Universidade de Coimbra, Coimbra, Portugal, December 1993.

4.   Opponent for the M.Sc. Thesis entitled "Compressão de vídeo MPEG - desenvolvimento de um simulador e sua caracterização" by Luís Miguel Lopes Teixeira, Faculdade de Engenharia da Universidade do Porto, Porto, Portugal, September 1995.

5.   President of the Jury for the M.Sc. Thesis entitled "Mecanismos hipermédia em sistemas de processamento de vídeo" by João Pedro das Neves Sousa Elvas Martins, Instituto Superior Técnico, Universidade Técnica de Lisboa, Lisbon, Portugal, November 1998.

6.   Member of the Jury for the M.Sc. Thesis entitled "Suporte à descrição e pesquisa de imagem digital" by Artur Miguel Pereira Alves Caetano, Instituto Superior Técnico, Universidade Técnica de Lisboa, Lisbon, Portugal, May 1999.

7.   Member of the Jury for the M.Sc. Thesis entitled "Meta-informação no armazenamento e recuperação de Documents multimédia" by Susana Maria Silva Santos Gaio, Faculdade de Engenharia da Universidade do Porto, Porto, Portugal, July 2000.

8.   Member of the Jury for the M.Sc. Thesis entitled "Codificação de vídeo para sistemas de comunicação móveis" by Pedro Jorge de Oliveira Sá Vinhas, Universidade de Aveiro, Aveiro, Portugal, March 2005.

9.   Member of the Jury for the M.Sc. Thesis entitled "Modelação de redes sem fios para comunicações multimédia" by João Paulo Nunes Rocha Angeja, Universidade de Aveiro, Aveiro, Portugal, June 2006.

6.2.2 Portugal Post-Bologna

1.   Member of the Jury for the M.Sc. Thesis entitled "Caracterização, modelação e implementação de transformações cromáticas em imagens digitais para observadores com cromatopsia visual" by Marco André Vieira Andrade Bernardo, Universidade da Beira Interior, Covilhã, Portugal, December 2009.

2.   Member of the Jury for the M.Sc. Thesis entitled "Robust video coder solution for wireless streaming: applications in Gaussian channels" by Ângelo Miguel Arrifano, Universidade da Beira Interior, Covilhã, Portugal, November 2010.

3. Member of the Jury for the M.Sc. Thesis entitled "Using least-squares prediction for compression of colour and stereo images" by Luís Filipe Rosário Lucas, Instituto Politécnico de Leiria, Leiria, Portugal, June 2011.

4. Member of the Jury for the M.Sc. Thesis entitled "Contributions to HEVC prediction for medical image compression" by André Filipe Rodrigues Guarda, Instituto Politécnico de Leiria, Leiria, Portugal, May 2016.

6.2.3 Abroad

1. Member of the Jury for the M.Sc. Thesis entitled "Desenvolvimento de um codificador de vídeo HD em tempo real com complexidade Escalável usando a biblioteca x264" by Allan Freitas da Silva, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil, August 2013.

6.3 Ph.D. Juries

6.3.1 Portugal

1. Opponent for the Ph.D. Thesis entitled "Quantificação vectorial aplicada a vídeo digital de baixa cadência" by Luís António Pereira de Meneses Corte-Real, Faculdade de Engenharia da Universidade do Porto, Porto, Portugal, February 1994.

2. Opponent for the Ph.D. Thesis entitled "Decomposição multi-resolução de sinais: aplicação à compressão de sequências de imagens" by Vitor Manuel Mendes da Silva, Faculdade de Ciências e Tecnologia da Universidade de Coimbra, Coimbra, Portugal, May 1996.

3. Member of the Equivalence Jury for the Ph.D. Thesis entitled "Very low bit rate video coding using geometric transform motion compensation" by Sérgio Manuel Maciel de Faria, Faculdade de Ciências e Tecnologia da Universidade de Coimbra, Coimbra, Portugal, March 1997.

4. Member of the Jury for the Ph.D. Thesis entitled "Processamento semântico de informação multimédia" by Nuno Manuel Robalo Correia, Instituto Superior Técnico, Universidade Técnica de Lisboa, Lisbon, Portugal, May 1998.

5. Member of the Equivalence Jury for the Ph.D. Thesis entitled "Video transcoding for matching network bandwidth constraints" by Pedro António Amado de Assunção, Faculdade de Ciências e Tecnologia da Universidade de Coimbra, Coimbra, Portugal, May 1998.

6. Member of the Jury for the Ph.D. Thesis entitled "Codificação fonética: codificação de fala baseada em segmentos classificados foneticamente" by Carlos Eduardo de Meneses Ribeiro, Instituto Superior Técnico, Universidade Técnica de Lisboa, Lisbon, Portugal, February 2000.

7. Member of the Jury for the Ph.D. Thesis entitled "Rigid structure from video" by Pedro Manuel Quintas Aguiar, Instituto Superior Técnico, Universidade Técnica de Lisboa, Lisbon, Portugal, July 2000.

8. Member of the Jury for the Ph.D. Thesis entitled "Codificação de vídeo para sistemas de comunicação móveis" by Pedro Jorge de Oliveira Sá Vinhas, Universidade de Aveiro, Aveiro, Portugal, March 2005.

9. Member of the Jury for the Ph.D. Thesis entitled "Seguimento de pessoas e grupos em sinais de vídeo com redes Bayesianas" by Pedro Miguel Torres Mendes Jorge, Instituto Superior Técnico, Universidade Técnica de Lisboa, Lisbon, Portugal March 2007.

10. Member of the Jury for the Ph.D. Thesis entitled "Lossless compression of images with specific characteristics" by António José Ribeiro Neves, Universidade de Aveiro, Aveiro, Portugal, September 2007.

11. Member of the Jury for the Ph.D. Thesis entitled "Transform domain transcoding systems for static and dynamic video composition" by Nuno Filipe Valentim Roma, Instituto Superior Técnico, Universidade Técnica de Lisboa, Lisbon, Portugal, May 2008.

12. Opponent for the Ph.D. Thesis entitled "Joint source video coding" by Luís Miguel Lopes Teixeira, Faculdade de Engenharia da Universidade do Porto, Porto, Portugal, May 2012.

13. Member of the Jury for the Ph.D. Thesis entitled "Contribuições para a redução de complexidade da codificação intra na norma HEVC e extensão 3D-HEVC" by Thaísa Leal da Silva, Universidade de Coimbra, Coimbra, Portugal, June 2015.

14. Member of the Jury for the Ph.D. Thesis entitled "Quality perception and chromatic changes in digital images" by Marco Bernardo, Universidade da Beira Interior, Covilhã, Portugal, June 2017.

15. Member of the Jury for the Ph.D. Thesis entitled "Scalable light field representation and coding" by Ricardo Jorge Santos Monteiro, ISCTE-IUL, Lisboa, Portugal, June 2020.

6.3.2 Abroad

1. Evaluator of the Proposal for Ph.D. Thesis entitled "Compresión de imagen basada en la codificación de formas perceptuales" by Josep R. Casas Pla, Universitat Politècnica de Catalunya, Barcelona, Spain, January 1994.

2. Member of the Jury for the Ph.D. Thesis entitled "Image compression based on perceptual coding techniques" by Josep R. Casas Pla, Universitat Politècnica de Catalunya, Barcelona, Spain, March 1996.

3. Member of the Jury for the Ph.D. Thesis entitled "Codificación de vídeo a baja velocidad basada en regiones y en estimación y compensación bidireccional del movimiento" by Luis Salgado Álvarez de Sotomayor, Universidad Politécnica de Madrid, Madrid, Spain, July 1998.

4. Evaluator of the Ph.D. Thesis entitled "Error resilience for video coding services over packet-based networks" by Jian Zhang, University of New South Wales, Canberra, Australia, July 1999.

5. Evaluator of the Proposal for Ph.D. Thesis entitled "Video indexing using multimodal information" by Alberto Albiol Colomber, Universidad Politécnica de Valencia, Valencia, Spain, December 2000.

6. Member of the Jury for the Ph.D. Thesis entitled "Indexation de vidéos et de maillages 3D dans le contexte MPEG-7" by Titus Bogdan Zaharia, Université René Descartes - Paris V, Paris, France, December 2001.

7. Member of the Jury for the Ph.D. Thesis entitled "Outils auteurs pour MPEG-4" by Souhila Boughoufalah, École Nationale Supérieure des Télécommunications, Paris, France, June 2002.

8. Member of the Jury for the Ph.D. Thesis entitled "Advanced virtual character animation within the MPEG-4 framework" by Marius Preda, Université René Descartes - Paris V, Paris, France, December 2002.

9. Member of the Jury for the Ph.D. Thesis entitled "Video indexing using multimodal information" by Alberto Albiol Colomber, Universitat Politecnica de Valencia, Valencia, Spain, April 2003.

10. Evaluator of the Proposal for Ph.D. Thesis entitled "On image and video coding using region based and meta-representations" by Javier Ruiz Hidalgo, Universidad Politècnica de Catalunya, Barcelona, Spain, April 2003.

11. Member of the Jury for the Ph.D. Thesis entitled "Multiple description image and video coding for noisy channels" by Manuela Pereira, Université de Nice Sophia-Antipolis, Nice, France, June 2004.

12. Member of the Jury for the Ph.D. Thesis entitled "Adaptation de contenu multimédia avec MPEG-21: conversion de ressources et adaptation sémantique de scènes" by Mariam Kimiaei Asadi, École Nationale Supérieure des Télécommunications, Paris, France, June 2005.

13. Member of the Jury for the Ph.D. Thesis entitled "Automatic video segmentation employing object/camera modeling techniques" by Dirk Farin, Technische Universiteit Eindhoven, Eindhoven, Netherlands, December 2005.

14. Member of the Jury for the Ph.D. Thesis entitled "Football on mobile phones: algorithms, architectures and quality of experience in streaming video" by Jiong Sun, Umea University, Umea, Sweden, September 2006.

15. Member of the Jury for the Ph.D. Thesis entitled "Studio e sperimentazione di algoritmi e infrastrutture per la bioinformatica" by Andrea Manconi, Università degli Studi di Cagliari, Cagliari, Italy, March 2007.

16. Member of the Jury for the Ph.D. Thesis entitled "Studio e sperimentazione di tecniche di apprendimento automatico finalizzate alla risoluzione di problemi complessi in ambito bioinformatico" by Massimiliano Saba, Università degli Studi di Cagliari, Cagliari, Italy, March 2007.

17. Member of the Jury for the Ph.D. Thesis entitled "High reliability text categorisation systems" by Ignazio Pillai, Università degli Studi di Cagliari, Cagliari, Italy, March 2007.

18. Member of the Jury for the Ph.D. Thesis entitled "Statistical pattern recognition techniques for intrusion detection in computer networks: challenges and solutions" by Roberto Perdisci, Università degli Studi di Cagliari, Cagliari, Italy, March 2007.

19. Member of the Jury for the Ph.D. Thesis entitled "A study on interpolation of images and video sequences using a new approach of fractal theory" by Giulio Soro, Università degli Studi di Cagliari, Cagliari, Italy, March 2007.

20. Member of the Jury for the Ph.D. Thesis entitled "Texture analysis for computed tomography images characterization" by Barbara Podda, Università degli Studi di Cagliari, Cagliari, Italy, March 2007.

21. Member of the Jury for the Ph.D. Thesis entitled "Evaluation framework for free/libre open source software" by Alessandra Cau, Università degli Studi di Cagliari, Cagliari, Italy, March 2007.

22. Member of the Jury for the Ph.D. Thesis entitled "Power-laws and fractal dimension in object-oriented software systems" by Ivana Turnu, Università degli Studi di Cagliari, Cagliari, Italy, March 2007.

23. Member of the Jury for the Ph.D. Thesis entitled "A framework for financial markets modeling and simulation" by Alessio Setzu, Università degli Studi di Cagliari, Cagliari, Italy, March 2007.

24. Member of the Jury for the Ph.D. Thesis entitled "Descriptions de scènes multimédia: représentations et optimisations" by Cyril Concolato, École Nationale Supérieure des Télécommunications, Paris, France, July 2007.

25. Member of the Jury for the Ph.D. Thesis entitled "Rate-distortion optimization for video communication in resource constrained IP networks" by Stian Johansen, Norwegian University of Science and Technology, Trondheim, Norway, March 2008.

26. Member of the Jury for the Ph.D. Thesis entitled "Advances on video coding algorithms for streaming applications" by Mehdi Rezaei, Tampere University of Technology, Tampere, Finland, April 2008.

27. Member of the Jury for the Ph.D. Thesis entitled "Advanced video coding" by Mo Wu, Danish Technical University, Copenhagen, Denmark, June 2008.

28. Member of the Jury for the Ph.D. Thesis entitled "Error-resilient communication using the H.264/AVC video coding standards" by Miska M. Hannuksela, Tampere University of Technology, Tampere, Finland, March 2009.

29. Member of the Jury for the Ph.D. Thesis entitled "Acquisition, compression and rendering of depth and texture for multi-view video" by Yannick Morvan, Technische Universiteit Eindhoven, Eindhoven, Netherlands, April 2009.

30. Member of the Jury for the Ph.D. Thesis entitled "Contributions to side information generation for distributed video coding" by Xavi Artigas, Universidad Politècnica de Catalunya, Barcelona, Spain, November 2009.

31. Member of the Jury for the Ph.D. Thesis entitled "Complexity adaptation in video encoders for power limited platforms" by Chanyul Kim, Dublin City University, Dublin, Ireland, December 2009.

32. Member of the Jury for the Ph.D. Thesis entitled "On-line video abstraction" by Victor Valdés López, Universidad Autonoma de Madrid, Madrid, Spain, May 2010.

33. Member of the Jury for the Ph.D. Thesis entitled "Paradigms for real-time video communication and for video distribution" by Ermin Kozica, KTH-Royal Institute of Technology, Stockholm, Sweden, April 2011.

34. Member of the Jury for the Ph.D. Thesis entitled "A rate control algorithm for scalable video coding" by Sergio Sanz Rodriguez-Escalona, Universidad Carlos III de Madrid, Madrid, Spain, September 2011.

35. Member of the Jury for the Ph.D. Thesis entitled "Parametric video compression", Fan Zhang, University of Bristol, Bristol, United Kingdom, June 2012.

36. Member of the Jury for the Ph.D. Thesis entitled "Techniques for improving the performance of distributed video coding" by Abdalbassir Abou-Elailah, École Nationale Supérieure des Télécommunications, Paris, France, December 2012.

37. Member of the Jury for the Ph.D. Thesis entitled "Distributed video coding: iterative improvements" by Huynh Van Luong, Danish Technical University, Copenhagen, Denmark, June 2013.

38. Member of the Qualification Jury for the Ph.D. Thesis entitled "Super-resolução baseada em correspondência de feições invariantes locais e casamento de gradientes" by Renan Utida Ferreira, Universidade de Brasília, Brasilia, Brazil, July 2014.

39. Member of the Jury for the Ph.D. Thesis entitled "Super-resolução baseada em correspondência de características SIFT e casamento de gradientes" by Renan Utida Ferreira, Universidade de Brasília, Brasilia, Brazil, July 2015.

40. Member of the Jury for the Ph.D. Thesis entitled "Multiple transforms for video coding" by Adrià Arrufat, Université Européenne de Bretagne, Rennes, France, December 2015.

41. Member of the Jury for the Ph.D. Thesis entitled "Predictive coding algorithms for lossy image and video compression" by Luís Filipe Rosário Lucas, Universidade Federal do Rio de Janeiro, Brazil, January 2016.

42. Member of the Jury for the Ph.D. Thesis entitled "Network streaming and compression for mixed reality tele-immersion" by Rufail Negatu Mekuria, Vrije Universiteit Amsterdam, Amsterdam, Netherlands, January 2017.

43. Member of the Jury for the Ph.D. Thesis entitled "Light-field image and video compression for future immersive applications" by Antoine Dricot, Télécom ParisTech, Paris, France, March 2017.

44. Member of the Jury for the Ph.D. Thesis entitled "Retina-inspired image and video coding" by Effrosyni Doutsi, Université Côte d'Azur, Nice, France, March 2017.

45. Member of the Jury for the Ph.D. Thesis entitled "Context-based quality of experience in immersive multimedia" by Anne-Flore Perrin, École polytechnique fédérale de Lausanne, Lausanne, Switzerland, June 2018.

46. Member of the Jury for the Ph.D. Thesis entitled "Compression and quality assessment of images using convolutional neural networks" by Irene Viola, École polytechnique fédérale de Lausanne, Lausanne, Switzerland, March 2019.

47. Member of the Jury for the Ph.D. Thesis entitled "Compression and visual quality assessment for light field contents", Pinar Akyazi, École polytechnique fédérale de Lausanne, Lausanne, Switzerland, November 2019.

6.4 Habilitation Juries Abroad

1. President of the Jury for the *Habilitation a Diriger des Recherches* "Segmentation spatio-temporelle des images animeés. Application au codage efficace et a l'analyse de contenu de la video numerique" by Jenny Benois-Pineau, École Polytechnique de l'Université de Nantes, Nantes, France, November 2000.

2. Member of the Jury for the *Habilitation a Diriger des Recherches* "Interactive multimedia content" by Jean-Claude Dufourd, Université Pierre et Marie Curie, Paris 6 - Jussieu, Paris, France, December 2010.

3. Member of the Jury for the *Habilitation a Diriger des Recherches* "Video processing and coding: from 2D to light-field contents" by Joel Jung, Sorbonne Université, Paris, France, December 2019.

6.5 Academic Juries

1. Member of the Jury for the position of Auxiliary Professor in the scientific area of 'Ciências e Tecnologias da Informação', sub-area of 'Multimédia, Visão e Computação Gráfica' from the Departament of Sciences and Information Technologies, ISCTE –IUL, Lisbon, Portugal, April 2012.

End