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LEADING THE RESEARCH IN TECHNOLOGIES

INTERNATIONAL YOUNG TALENT, PRICES AND AWARDS

**29** Tenured Faculty affiliated to DTIC

**10** ERC Grants awarded to members of the DTIC

**13** ICREA Professors

**+40M€** raised in all European Programs (2007-13), **5%** of all the EU funds obtained by Spanish Universities

**525** journal articles (2011-14)

**+75%** in Q1 top-ranked field-specific journals and in reputed interdisciplinary journals

High internationalisation among staff (**66%**) and postgraduate students (**+60%**)

Best Young European Researcher Award (Euroscience) 2013

**MIT Technology Review** Innovators under 35 for Spain 2014

**Vodafone** Mobile for Good Awards 2013

**Google** Research Award

**Cisco Security** Grand Challenge 2014

**Japan** Institute of Invention and Innovation 2013

**BBVA** Innova Challenge 2013 International Competition on Big Data
90% of the undergrad students carry out internships in companies

Industry is involved in all educational activities

Internships for masters in leading companies (Yahoo!, Yamaha, Telefonica, Gracenote, Dolby, etc)

**Industrial PhD**, with positions supported by the Catalan Government and the EU

**Challenging Research-Driven Educational Offer**

**Know How Creation and Outreach**

- 5 of the 6 spin-off companies created by UPF
- 4 TECNIO distinctions for active research transfer to local industry
- **+4M** users worldwide to open initiatives as Freesound.org
- Over **5M€** in subcontracts from European and Spanish companies over the last 5 years
- Over **30K** students registered in our MOOCs
ABOUT UPF

Pompeu Fabra University (UPF) is a young, modern, decidedly public university that, in just twenty five years, has earned a place for itself among the best universities in Europe:

Top 10 European Universities (U-Multirank 2015)

12th worldwide young university (Times Higher Education - 100 under 50, 2015)

1st Spanish University in quality of research (Scimago 2014)

Jaume Casals
Rector of the Universitat Pompeu Fabra

At the UPF we always recognize the fast growth and productivity of the DTIC as an example of leading department able to gather research resources from highly competitive European and National programmes.

Our international academic leadership has been a result of merging consolidated and emerging talent, both international and local. So, DTIC orchestrates an excellent research and training ecosystem to perform a highly competitive professional career.

Xavier Binefa
Director of the DTIC

A highly competitive ecosystem in Barcelona for both fundamental and applied research to achieve excellence.

DTIC attracts talent in a set of research areas dealing with interaction, media, networking, data science, computational neuroscience and intelligent systems.
DTIC offers a thriving environment to pursue research, evidenced by the constant push for excellence of our researchers and the exploration of novel concepts and synergies between our diverse research areas.

Labs and facilities

DTIC-UPF houses infrastructure for both engineering work (computing, robotics and sensing, specialised audiovisual equipment) and experimentation with human subjects (experimental rooms with specialised equipment), complemented with links with hospitals and external infrastructures.
Cognitive and Intelligent Systems
- Artificial Intelligence and Theoretical Computer Science
- Cognition, Computation and Robotics
- Cognitive Multimedia Technologies
- Information Retrieval and Data Mining
- Natural Language Processing
- Ubiquitous Computing

Networks and Communications
- Network Technologies and Strategies
- Wireless Communications
- Information Theory and Coding

Audiovisual Technologies
- Human-Computer Interaction, Graphics and Educational Technologies
- Image Processing and Computer Vision
- Image Processing for Enhanced Cinematography
- Sound and Music Computing

Brain and Cognition
- Computational Neuroscience
- Language and Comparative Cognition
- Multisensory Research
- Speech Acquisition and Perception
- Speech Production and Bilingualism
- Reasoning and Infant Cognition

Computational Biology and Biomedical Systems
- Computational Neuroscience
- Computational Imaging and Computational Physiology
- Analysis of Biomedical Data
- Non-linear Signal Analysis
- Instrumentation and Biomedical Electronics
- Simulation, Imaging and Modelling for Biomedical Systems
We are committed to educating the new generation of engineers that will contribute decisively to the consolidation of a new economic model based on continuous technological innovation.
4-year Engineering Degrees

- Audiovisual Systems Engineering
- Biomedical Engineering
- Computer Sciences
- Telematics Engineering
- Data Science (to start 2016-17)
- Possibility of simultaneous double degrees

SUPPORT TO INNOVATION AND QUALITY TEACHING UNIT

Davinia Hernández-Leo
DTIC
Undergraduate Education

We have commitment to technical depth and hands-on active learning experiences, in the service of training the best engineers for innovation, development and research contexts.
Postgraduate students get deeply embedded in all our international research projects. This global network of collaborators provides them a unique platform to push their careers in academic and industrial settings around the world.
Master Programs

- Master in Brain and Cognition
- Master in Cognitive Systems and Interactive Media
- Master in Computer Vision
- Master in Intelligent and Interactive Systems
- Master in Sound and Music Computing
- Master in Wireless Communications
- Master in Computational Biomedical Engineering (2016-17)

DTIC PhD Program

- +60% students of international origin
- Recent Awards to students: Cisco Security Grand Challenge 2014, the Best European Young Researcher Award 2013, the National Commendation for Invention from the Japan Institute of Invention and Innovation 2013, BBVA Innova Challenge 2013 Intl. Competition on Big Data.
We continuously explore talent at early and mature stages to build the ideal context for technological research. The community from over 40 different nationalities and with varied scientific backgrounds creates a dynamic environment in which to work and live.
We, as a publicly-funded research institution, have the society as the center of all our strategy. So, communication becomes essential to achieve a full success in research and education.

**Entrepreneurship**
- Hackathons
- Industrial Programs
- MOOCs
- Outreach Events
- Scientific Congresses
- Summer Schools

**Outreach and Innovation**

Marcelo Bertalmío
DTIC Secretary

A great asset of our department consists in providing a very active, varied and multidisciplinary research environment. At any given time there’s always some organized activity taking place, decision making is constant and internal communication is key in having an organic and engaging departmental community.
There is ample evidence of quality research work and important accomplishments made by the department faculty. The DTIC is a young and energetic department with a strong research ethos.  
Xavier Amatriain
DTIC PhD 2004
VP of Engineering at Quora (Los Gatos, CA)

(...) studying a PhD at the UPF allowed me to work on interesting problems I would never have dreamed of. It also allowed me to work with international cross-cultural teams. (...) it allowed me to get a working experience that would have not been possible any other way.

Luz Rello
DTIC PhD 2014
Best European Young Researcher Award 2013
Post Doctoral Fellow
Human-Computer Interaction Institute Carnegie Mellon University (USA)

being part of the international and multidisciplinary environment at DTIC-UPF gave me (and still does from the distance) great opportunities to engage in cutting-edge research. A truly supportive but challenging place to boost research careers
Since 1999 Coloma Ballester is an Associate Professor at our Department. She obtained a degree in Mathematics at the U. Autònoma de Barcelona, a Master “Mathématiques Appliquées à l’Ingénierie” at the U.Paris-IX in 1992 and a Ph.D. in Computer Science at the U. Illes Balears in 1995. After her Ph.D., she worked at UIB until 1997, and at the CNRS at IHP in Paris, in 1998. Her research interests include image processing and computer vision. She is currently interested in depth computation, stereo vision and 3D reconstruction, motion estimation, video inpainting and stereo video inpainting, film post-production algorithms, shape recognition, geometric models, and in general in variational models for image processing and computer vision. As of October 2014, she has authored over 36 articles in high impact-factor international journals and conferences, receiving more than 3900 citations in GS.
Josep Blat is a Full Professor at UPF, where he has been chair of our Department and director of the Polytechnic School, both of which he founded around 2000. He was previously at Universitat de les Illes Balears where he was chair of the Department of Maths & CS (1988-94). He received his Ph.D. from Heriot-Watt University (1985) and developed post-doctoral work at Université Paris-Dauphine.

He heads the Interactive Technologies research group (GTI http://gti.upf.edu/), with activity in graphics, HCI and learning. He has coordinated a number of European projects, with a focus on media technology research, mainly the Digital Cinema projects IMP-PART, iMP, IP-RACINE and Speed-FX (IST prize), currently working on Web 3D (especially human animation), also expressed in successful simulation games, such as the Barcelona World Race game. Ethnography on ICT – including games - with older people, collaborative creation of content, free-play, visualization and geo-located information, are some of the current topics of research.

Marcelo Bertalmío (Montevideo, 1972) received a Ph.D. degree in electrical and computer engineering from the University of Minnesota in 2001 and is an Associate Professor at UPF since 2006. His publications total around 7,000 citations. Awarded the 2012 SIAG/IS Prize of the Society for Industrial and Applied Mathematics of the USA (SIAM) for co-authoring the most relevant image processing work published in the period 2008-2012. Has received the Femlab Prize, the Siemens Best Paper Award, the Ramón y Cajal Fellowship, and the ICREA Academia Award, among other honors. Has been elected secretary of SIAM’s activity group on imaging. Has an ERC-Starting Grant for his project “Image processing for enhanced cinematography”. Has written a book titled “Image Processing for Cinema”, published by CRC Press/Taylor & Francis. His current research interests are in developing image processing algorithms allowing to shoot cinema with no more artificial lighting than what people present at the scene need to be able to see. The approach is to work out software methods mimicking neural processes in the human visual system.
GÓMEZ GUTIÉRREZ, Emilia
Associate Professor. Cofounder of BMAT Licensing

Since 2014 Emilia Gómez is an Associate Professor at our Department. She graduated as a Telecommunication Engineer at Universidad de Sevilla (Spain) and she studied classical piano performance at Seville Conservatoire of Music. She then received a DEA in Acoustics, Signal Processing and Computer Science applied to Music (ATIAM) at IRCAM, Paris (France) and a Ph.D. in Computer Science and Digital Communication at the UPF (awarded by EPSON foundation). Her research is within the Music Information Retrieval (MIR) field. She tries to understand and enhance music listening experiences by automatically extracting descriptors from music signals. She has designed algorithms able to describe music signals in terms of melody, tonality, and address more high-level concepts such as similarity, style or emotion. Emilia has co-authored more than a 100 publications in peer-reviewed scientific journals and conferences. She has contributed to more than 15 research projects, most of them funded by the European Commission and Spanish Government. She is elected member-at-large of the International Society for Music Information Retrieval (ISMIR) and, at the moment, she is the coordinator for the European research project PHENICX, trying to innovate the way we experience classical music concerts.

HARO ORTEGA, Gloria
Associate Professor interim

Since 2014, Gloria Haro is an Associate Professor interim at our Department. She obtained a degree in Telecommunications Engineering at Universitat Politècnica de Catalunya (UPC), Spain and a Ph.D. in Computer Science at Universitat Pompeu Fabra (UPF). She was a postdoctoral fellow at the Institute for Mathematics and its Applications, University of Minnesota, USA, a “Juan de la Cierva” fellow at UPC, and a “Ramón y Cajal” fellow at UPF. Her current research is focused on automatic video editing tools for post-production. Namely, the automatic deletion and insertion of objects in video sequences, which involves research in basic tools such as optical flow estimation, video inpainting, video editing, and depth estimation. She is also working in 3D reconstruction from multiple views, and multi-image fusion. The mathematical tools involved in her work are variational methods, probabilistic models, and geometric models. She is author of 11 indexed journal papers and she received the WIAMIS 2012 best paper award.
Since 2014 Davinia Hernández-Leo is an Associate Professor at our Department. She was born in Plasencia, and obtained a degree and a Ph.D on Telecommunication Engineering at University of Valladolid, Spain. She has been visiting researcher at Open University of the Netherlands, Fulbright Scholar at Virginia Tech and visiting research fellow at the University of Sydney. Her research lies at the intersection of network and computer applications, human-computer interaction and learning sciences. She is tackling two challenges, first, providing design techniques and systems that enable the co-creation of interoperable learning activities, second, supporting the distributed orchestration of seamless collaborative learning flows using service-oriented architectures and new devices. She has participated in multiple founded projects and is the technical leader of the METIS Integrated Learning Design Environment. She is also active in Engineering Education projects. Her research has been published in more than 100 peer-reviewed journal papers, book chapters and conference papers. She has received several awards, including best paper awards and the European award for excellence in CSCL. She is associate editor for IEEE Transactions of Learning Technologies and member of the steering committee of the European Conference on Technology-Enhanced Learning.

Since 2011 Sergi Jordà is an Associate Professor at our Department. He obtained a degree in physics at the UB in Barcelona and a Ph.D on Computer Science at Universitat Pompeu Fabra in 2005. He works in Human Computer Interaction (HCI) with a special emphasis on tangible, tabletop and real-time musical interaction, being the main creator of successful products, both academically and commercially, such as the Reactable musical instrument. He is also interested in the applications of physiological biosignals (EEG, EMG) for expressive and implicit interaction, and in exploring the possibilities of Music Information Retrieval (MIR) for creative applications. Since 2003 he has participated in many EC funded projects and he is currently the IP of two of them: GiantSteps (FP7-610591) and RAPID-MIX (H2020-ICT-2014-1-644862). He has authored more than 90 publications counting peer-reviewed conference papers, journal articles and book chapters, with more than 2700 citations (h-index 21) in GS (January 2015). He has received many awards such as the Swets & Zeitlinger best paper award ICMC (2001), the Ciutat de Barcelona award in Multimedia category (2007) or the Ars Electronica’s Golden Nica (2008).
RAMÍREZ MELÉNDEZ, Rafael
Associate Professor

Since 2010 Rafael Ramirez is an Associate Professor at our Department. He was born in Mexico. He obtained his BSc in Mathematics form the National Autonomous University of Mexico, and his MSc in Artificial Intelligence and Ph.D. in Computer Science from the University of Bristol, UK. For five years, he was a Lecturer in the Department of Computer Science at the School of Computing of the National University of Singapore. His research interests include Artificial Intelligence, Machine Learning, Data Mining and their application to cognition, music technology, creative processes, and brain-computer Interfaces. He has published more than 100 research articles in peer-reviewed international Journals and Conferences. He currently act as chair and program committee member for several artificial intelligence and machine learning related conferences, and as a reviewer for several international journals. He has given invited seminars across Europe, Asia and America.

LEWIN-RICHTER, Andrés
Honorary Professor

Andrés Lewin-Richter is Honorary Professor in our Department. He is also Executive Director and founder of the Phonos Foundation devoted to the promotion of cultural activities around music technology since 1974.

After his studies in engineering at UPC, he received a Fulbright Fellowship to continue his studies at Columbia University with V. Ussachevsky, M. Davidovsky and E. Varese. While there, he worked as a teaching assistant in the Columbia Princeton Electronic Music Center, and as a sound engineer at the Alwin Nikolais Dance Company, and composed music for the film “The Gondola Eye”.

In 1966 he founded the Estudio de Música Electrónica del Conservatorio de Música in Mexico. In 1968, he returned to Spain and established the Barcelona Electronic Music Studio. He then widened his scope by becoming a founding member -together with J. Mestres Quadreny and L. Callejo- and vice-president of the Phonos Electronic Music Studio in 1974. He has served as artistic and executive director for the music ensemble Conjunt Català de Música Contemporànà (1968-1973).

His most influential recordings are the two monographic CDs issued on the Ars Harmonica label.
SERRA CASALS, Xavier

Associate Professor.
President of Phonos Foundation.
Cofounder of BMAT Licensing and Reactable Systems

Xavier Serra is the head of the Music Technology Group. After a multidisciplinary academic education he obtained a Ph.D. in Computer Music from Stanford University in 1989 with a dissertation on the spectral processing of musical sounds that is considered a key reference in the field. His research interests cover the analysis, description and synthesis of sound and music signals, with a balance between basic and applied research and approaches from both scientific/technological and humanistic/artistic disciplines. Dr. Serra is very active in promoting initiatives in the field of Sound and Music Computing at the local and international levels, being involved in the editorial board of a number of journals and conferences and giving lectures on current and future challenges of the field. He has recently been awarded an Advanced Grant of the European Research Council to carry out the project CompMusic aimed at promoting multicultural approaches in music computing research.
Luca Bonatti is an ICREA Research Professor at the Center for Brain and Cognition of our Department.

He received his Ph.D. in Philosophy of Mind at Rutgers University, under the supervision of Jerry Fodor. He has been full professor at the University of Nantes, associate professor at the University of Paris 8, and at SISSA/ISAS, Trieste, and visiting professor at the Universities of Budapest, Illes Balears and New York. He is interested in reasoning, language learning, imagination of physical events and infant cognition.

He has promoted a dual model of language acquisition, giving evidence that lexical learning and grammatical learning recruit different acquisition mechanisms. In infant cognition, his work focuses on early abilities of reasoning about the future, and on how basic categories affect infants’ organization of experience. Recently, with his collaborators, he has proposed a novel theory of how infants reason about uncertain events and on how their reasoning is affected by what they experience. He has tried to show that infants have intuitions about the future that are not based on their experience of the past, but on their logical abilities of analyzing current events.
Marco Calabria is a Ramón y Cajal Fellow in our Department. In 2009 he finished his PhD in Psychobiology at University of Padua with a thesis about the semantic and episodic aspects of memory for faces and names. During his trajectory as researchers he developed collaborations with different laboratories in Europe such as: the EEG Lab of the Université Catholique de Louvain (UCL) in Belgium, INSERM Unit U864 in Lyon, and the Cognitive Neuroscience Laboratory in Brescia (Italy).

Then he joined the Speech Production and Bilingualism at UPF. From 2009 on his research interests are focused on the study of language production and cognitive control mechanisms in healthy and brain-damaged bilinguals with dementia and Parkinson’s disease. Moreover, he is also interested in investigating semantic memory deterioration both in language and non-linguistic domains by studying patients with neurodegenerative diseases. In 2011 he was awarded with a Juan de la Cierva fellowship and in 2014 with a Ramón y Cajal. He has published 29 papers in scientific and peer-reviewed journals and he has several contributions at international conferences of psychology and neuroscience.

Dr. Albert Costa is ICREA Research Professor at our Department since 2008, where he is head of the Speech Production and Bilingualism Group in the Center for Brain and Cognition. In 1997 he received his Ph.D. degree in Psychology. From 1998 to 2005, Costa developed his post-doctoral career in European and American Universities: MIT, Harvard University (Fulbright scholarship), SISSA (Trieste, Italy) and at the University of Barcelona (Ramon y Cajal scholarship). In 2006 Dr. Costa became an Associate Professor in the Department of Psychology of the same university.

Dr. Costa’s research focuses on the cognitive and neural underpinnings of language processing. In this broad context, he is particularly interested in understanding how two languages are represented and processed by the same brain.

He addresses these issues by conducting experiments using both classic experimental psychology techniques and brain imaging and electrophysiological techniques, exploring the performance of both brain-damage individuals (patients with stroke and Alzheimer’s disease) and healthy individuals.

He has published more than 70 papers in International Journals with h-index of 21.
Dr. Rubén Moreno Bote is a Serra Hunter Professor at the department since 2015. Recipient of a PhD Extraordinary Prize in Physics in 2005 and a bachelor degree in Physics in 1999 by the Universidad Autónoma de Madrid, he was awarded a Ramón y Cajal Award in 2010 to create the first computational neuroscience group at the Foundation Sant Joan de Deu, before moving to the UPF. Dr. Moreno Bote is co-organizer of the conference Barcsyn and co-founder of the 1st Summer School in Theoretical and Computational Neuroscience in Barcelona. He is one of the leading scientists in population coding and neuronal dynamics approaches to brain functions, with special emphasis on the study of the computations of spiking neuronal networks. His theoretical work investigating the dynamics of neuronal networks has had a deep impact on the emergent field of Theoretical and Computational Neuroscience, as witnessed by the high number of citations and numerous invitations to give lectures in the most important research institutes, such as the NIH and the Max Planck Institute. His work has been published in highly prestigious research journals such as Nature Neuroscience, Physical Review Letters and PNAS.

Núria Sebastián-Gallés is a Full Professor at our Department, where she leads the Speech Acquisition and Perception Research Group. She received her Ph.D. in Experimental Psychology at the University of Barcelona (UB) in 1986. After Post-doctoral training at the Max Plank Institute and the LSCP-CNRS in Paris, she was appointed as Associate Professor at the UB in 1988, and promoted to Full Professor in 2002. In 2009 she moved to UPF. She has been a Visiting Scholar at several centers, including the IRCS of the Univ. of Pennsylvania, the ICN at the Univ. College (London) and the University of Chicago. She has received international recognition as shown by a James S. McDonnell Foundation Award and giving the Nijmegen Lectures (2005). She was member of the advisory group of the “Brain and Learning” initiative of the OECD (2002-2006). At present she is vice-president of the Scientific Council of the European Research Council.

She has authored over 90 publications in international journals (including Science, PNAS, The Journal of Neuroscience, among others). One of her current research projects is an ERC Advanced Grant investigating the relationship between attention and language development.
Salvador Soto-Faraco is an ICREA Research Professor, head of the Multisensory Research Group at the Center of Brain and Cognition. Salvador graduated in Psychology at the Universitat de Barcelona (1994), where he also completed a Ph.D. in Cognitive Science and Language (1999). Thereafter, he worked as a postdoctoral researcher in Oxford University (UK) and at the University of British Columbia (Canada). In 2002 he was awarded a Ramón y Cajal fellowship back at UB and became an ICREA Research Professor in 2005. Since 2009 he is based at the UPF. His research interests focus on how the brain synthesizes and combines information arriving from different sensory organs, to represent the world. To this end, he uses an experimental approach based on psychophysics, the study of neurological patients, neural stimulation techniques (TMS), and non-invasive measurements of neural activity such as electrophysiology (EEG/ERPs) or hemodynamics (fMRI). He has obtained funding for research from several national and international agencies, including a starting grant from the European Research Council.

Juan Manuel Toro is currently an ICREA Research Professor. He studied Psychology at the Universidad Nacional de Colombia, and then moved to the Universitat de Barcelona for a Ph.D. After graduating, he spent three years as a postdoc with Jacques Mehler at the LCD lab at SISSA. His research is focused on how humans acquire and process language. Besides studying this issue with adults and infants, he also approaches it from a comparative perspective, doing studies with animals. For example, some time ago, he showed rats can extract prosodic information present in speech in a similar way human infants do (a study that was named as one of the five best Ig Nobel prize-winning scientific papers). More recently, he demonstrated that animals outperform humans in a rule learning task, very likely because non-human species lack linguistic representations that constrain pattern extraction in human adults and infants.

His research receives funding from national and international agencies, including the award of a Starting Grant from the European Research Council.
Since 2011 Ralph Gregor Andrzejak is an Associate Professor at our Department. He was born in Düsseldorf, Germany (1970) and studied physics at the University Bonn, Germany. His work is positioned at the interface between physics, applied mathematics, neuroscience and neurology. Prof. Andrzejak’s main expertise lies in nonlinear signal analysis as well as its application to neuronal dynamics and other real-world dynamics. For example, he applies nonlinear methods to EEG recordings from epilepsy patients with regard to the localization of epileptic foci and the prediction of epileptic seizures. Apart from using established methods, he constantly develops innovative nonlinear signal analysis techniques. Here an emphasis is placed on the detection of nonrandom structure and directional couplings in dynamical systems as well as the concept of surrogates. A total of 53 publications of Prof. Andrzejak are listed in the ISI Web of Science by January 2015. These are 36 journal articles published in leading journals of physics, neuroscience, neurology, and engineering as well as conference contributions and editorial work. In the ISI-Web of Science his work receives more than 2000 citations (h-index 21).
Xavier Binefa is Associate Professor and the Director of our Department. He holds degrees in Mathematics by UB (1976) and in Computer Engineering by UAB (1988) and a Ph.D. in Computer Vision by UAB in 1996. At UAB, he held the position of associate professor in the Computer Science Department up to 2008, when he moved to UPF where he heads the research group on Cognitive Media Technologies (CMTech). Xavier is interested in the analysis of the visual content conveyed by the human body motion, including gestures and facial expressions. His scientific compromise is helping to construct a Society where digital information helps people in their daily life. In this sense he participates in several projects: while some of them are related to civil mediation for resolution of conflicts through the analysis of facial expressions (developed together with lawyers); others are related to interaction between people and virtual dress-rooms in order to improve their consumer experience. He founded two IT companies (Visual Century SL and Aitech SL). He is the author and co-author of more than 80 publications in international conferences and journals.
Dalmau Lloret, Victor
Associate Professor

Since 2007 Victor Dalmau is an Associate Professor at our Department. He was born in Sudanell, Spain (1971). He obtained a degree and a Ph.D on Computer Science at Universitat Politècnica de Catalunya, Spain. His main research is on Constraint satisfaction, which is the problem of deciding whether there exists an assignment of values to variables satisfying some given restrictions. The framework is general enough to express many common problems in areas such as logistics, computer vision, scheduling, and artificial intelligence, to name only a few. His work focuses on the theoretical aspects of the problem, involving techniques and concepts coming from areas as diverse as combinatorics, logic, database theory and universal algebra. He is also interested broadly in complexity theory, logic in computer science, and computational learning theory. He has published 23 journal papers and 29 conference (peer-reviewed) papers. He received the “Ramón y Cajal” Fellowship and the ICDT 2012 best paper award.

Estivill-Castro, Vladimir
Professor.
Also Full Professor at Griffith University, Australia.

Vladimir Estivill-Castro is a Full Professor in our Department, and a Full Professor at Griffith University, Australia.

Vladimir received a Mathematics degree (1985) and a Master degree on mathematics (1987) from UNAM, Mexico City. He then obtained a Ph.D. in Computer Science in 1991 at the University of Waterloo in Canada. He was an Assistant Professor at York University in Canada, a Lecturer at the Queensland University of Technology from 1996 to 1998, a Senior Lecturer and then Associate Professor at the University of Newcastle, 1998-2001.

His research is algorithmic engineering. He studies the design and analysis of algorithms that solve complex mathematical problems. He has made contributions to the field of data analysis with advances in clustering algorithms and spatial data mining. He has also worked extensively in privacy-preserving computation. His ability to deploy algorithms has resulted in applications in pattern analysis, computer vision and robotics. He has authored over 100 technical conference and journal articles and several book chapters and encyclopedia chapters and one monograph. He has received competitive funding in Australia, Canada, Mexico, and Spain.
Hector Geffner is an ICREA Research Professor at our Department. He obtained a BSc in Electrical Engineering at the Universidad Simon Bolivar, and a MSc in Systems Science and a Ph.D. in Computer Science at UCLA. After his Ph.D., he worked at the IBM T.J. Watson Research Center in NY, USA (1989 - 92), and at the Universidad Simon Bolivar, in Caracas (1992 – 2001). He also taught at Stanford University, Aachen University of Technology, Linköping University, Universite Paul Sabatier, King’s College, and the University of Edinburgh, among other places. Since 2001 he heads the Artificial Intelligence group.

He works on planning and plan recognition in intelligent systems, developing methods for generating and recognizing autonomous behavior automatically using model-based methods. He is the recipient of the 1990 ACM Dissertation Award, and is best known for the heuristic search approach to planning for which he received the 2009, 2010, and 2014 ICAPS Influential Paper Awards. He is a fellow of both the American and European Association for Artificial Intelligence (AAAI, ECAI), and Associate Editor of Artificial Intelligence (AIJ) and the Journal of Artificial Intelligence Research (JAIR).

Anders Jonsson is a Lecturer at our Department working in artificial intelligent planning and machine learning. He received his Ph.D. in computer science in 2005 from the University of Massachusetts Amherst, working in reinforcement learning under the supervision of professor Andrew Barto. His research interests involve sequential decision problems in general, in which one or several agents have to make repeated decisions about what to do, but he is also interested in applying machine learning to realistic problems in general. Specifically, he is currently working on sequential decision problems involving multiple agents, temporal planning in which actions have a duration, hierarchical representations of problems, combining the strengths of reinforcement learning and planning, learning decision trees for use in biomedical research, and analyzing the computational complexity of different classes of problems. He has authored 30 publications including peer-reviewed conference papers and journal papers.
Narcís Parés is a Tenure Associate Professor in our Department. His background is: Ph.D. in Audiovisual Communication -specialized in Virtual Reality- (UPF), MSc in Image Processing and Artificial Intelligence (UAB) and BSc in Computer Science Engineering (UPC). He is co-creator and coordinator of the Interdisciplinary Master in Cognitive Systems and Interactive Media (UPF). He has an interest in the possibilities of Full-Body Interaction based on current Embodied Cognition theories in areas such as Learning, Play and Special Needs. This research is undertaken from the standpoint of Interaction Design and Interactive Communication, focussing mainly on interaction for children and using non-invasive technologies. Main research areas are: Methods for Interaction Design and Assessment in Full-body Interaction in Informal Learning; Full-body Interaction to foster and facilitate Social Interaction for Children with Special Needs; Interactive Playgrounds based on Full-body Interaction to address Play as a Motor and Cognitive Developmental process and to foster physical activity.

Enric Peig is an Associate Professor in the Department of Information and Communication Technologies at Universitat Pompeu Fabra (UPF).

He obtained his Degree in Telecommunication Engineering at Universitat Politècnica de Catalunya (UPC) in 1993 and a Ph.D. in Telecommunication Engineering at UPF in 2004. In 1993, he joined the Department of Computer Architecture at UPC, where he worked in different projects related to security. In 2000 he joined UPF, where he completed his Ph.D. thesis about metadata interoperability, and worked in different projects related to DRM systems. In 2014 he joined the UBICALAB group at UPF, where he is working in technology-enabled solutions and ubiquitous systems. Enric has been member of different standardisation committees of CEN/ISSS, such as MMI or MMI/DC, and member of different program committees of international conferences and workshops.

Enric’s research interests are mainly in the information and knowledge representation systems, metadata creation and management, interoperability mechanisms and standardisation, and ubiquitous systems.
Rafael Pous is an Associate Professor in our Department. In 1988 he double-majored in Telecommunications and Computer Engineering from Universitat Politècnica de Catalunya. He obtained a MSc in Electrical Engineering from the University of Massachusetts, Amherst (1989) and a Ph.D. in Electrical Engineering at the University of California, Berkeley (1992), supported by a Fulbright and a Schlumberger fellowship. He was an Associate Professor at UPC (1993–2008), and then joined UPF in 2008.

His current research area is pervasive and ubiquitous systems based on radiofrequency, more specifically the combination of Radio Frequency Identification (RFID) and Cognitive Systems to create smart objects and spaces. In the past he has made significant contribution in the fields of numerical methods in electromagnetism, the field of superconductivity applied to telecommunication systems, and the field of fractal antennas (he is a co-author of the first patent on fractal antennas, the first recorded document in the field).

His research has given birth to several startup companies, in three of which he has been a co-founder: The Information Highway Group, AIDA Centre, and Keonn Technologies.

Nava Rubin is an ICREA Research Professor at our Department. She is also Professor of Neural Science and Psychology at New York University (currently on leave of absence).

She received a M.Sc. in Physics (1989) and a Ph.D. in Neuroscience (1993) from the Hebrew University of Jerusalem. During 1993-1996 she was a post-doctoral fellow at the Vision Sciences Lab in Harvard University. She then joined the Center for Neural Science at NYU as Assistant Professor, and subsequently promoted to Associate and then Full Professor, before joining UPF.

She works on the computational and neural basis of human visual perception. Her results have been published in some of the most influential scientific journals (Science, PNAS, Current Biology, Neuron) and in numerous high-quality journals on more specialized topics, presented in over a hundred international conferences and symposia, and funded by several US private foundations, the US National Science Foundation (SFN), the National Institutes of Health (NIH) and the European Union. She is the recipient of many awards including Rothschild and Fulbright Fellowships, McDonnell-Pew Award in Cognitive Neuroscience and Alfred P. Sloan Research Award.
Since 2010, Horacio is a Ramón y Cajal Associate Professor interim at our Department. He holds a Ph.D. in Computer Science from Université de Montréal. He works on automatic text summarization, text simplification, information extraction, text processing in social media, sentiment analysis and related topics. Before joining Universitat Pompeu Fabra, he worked at the University of Sheffield for a number of UK and European research projects developing competitive human language technology. He was also an invited researcher at Johns Hopkins University in 2001. He is principal investigator in the EU projects Dr Inventor (scientific summarization and extraction) and Able-to-Include (text simplification). Horacio has published over 100 works in leading scientific journals, conferences, and books in the field of human language technology. He is co-editor of a book on multilingual, multisource information extraction and summarization published by Springer (2012). Horacio has developed the freely available SUMMA summarization software distributed by UPF. He has received awards from institutions such as Fundación Antorchas, Vodafone Innovation, and Cátedra Telefónica/Universidad de Alicante.

Federico Sukno is a Ramón y Cajal Fellow at UPF. He received the degree in electrical engineering at La Plata National University (Argentina, 2000) and the Ph.D. degree in biomedical engineering at Zaragoza University (Spain, 2008). His research activity has been framed in the field of image analysis with statistical models of shape and appearance, targeting diverse applications, most of which in facial biometrics and, to a lesser extent, cardiac imaging. Between 2007 and 2010 he led a team of 6 members (the section on Statistical Image Analysis, within the CISTIB research group at UPF). Between 2010 and 2013 he worked as a post-doctoral researcher with a joint appointment at Dublin City University and the Royal College of Surgeons in Ireland. In this post, his research focused on the analysis of three-dimensional facial dysmorphology with applications into neuropsychiatric disorders from developmental origin and reconstructive surgery. He has been previously awarded a Marie Curie Intra-European Fellowship from FP7 (December 2011) and a research fellow position at UPF (UPFellow program, 2013).
VERSCHURE, Paul
Research Professor. Visiting Professor at the Department of Psychology, University of Sheffield. Cofounder of Eodyne Systems

Paul is an ICREA research professor and director of the SPECS laboratory. He obtained his Master and Ph.D. in psychology at Univ. of Amsterdam and Zurich respectively and pursued his research career at The Neurosciences Institute, the Salk Institute in San Diego-US and the ETH in Zurich-CH. Since 2008 he is academic director of the “Cognitive & Synthetic Interactive Media” master, and since 2012 director of the Centre for Autonomous Systems & Neuro-Robotics. He leads a group of 35 people, has published more than 350 peer-reviewed scientific papers and has built a unified theory of mind, brain and body using synthetic methods to develop novel cognitive technologies, called Distributed Adaptive Control ‘DAC’. DAC provides new insights on brain mechanisms of perception, cognition and action, and it is implemented in autonomously behaving robots and virtual reality systems, such as the Rehabilitation Gaming System, a revolutionary approach towards brain repair that is being commercialized to assist people affected by stroke (EODYNE). His research is funded through EU research projects and an ERC Advanced grant 2013 that focuses on the DAC theory and the understanding of consciousness.

WANNER, Leo
Research Professor

Leo Wanner is an ICREA Research Professor at our Department. He earned his Diploma degree in Computer Science from the University of Karlsruhe and his Ph.D. in Linguistics from the University of The Saarland. He has held positions at the German National Centre for Computer Science, University of Waterloo, the University of Stuttgart and the UPF. As visiting researcher, he was also affiliated with U of Montreal, U of Sydney, U of Southern California’s Institute for Information Sciences, U Paris 7, and the Columbia University. He has been involved in various large scale national, European, and transatlantic research projects. He has published eight books and about 150 refereed journal and conference articles.

He works in the field of computational linguistics. His research foci include automatic multilingual report generation, automatic summarization of written material and information extraction. He is furthermore interested in lexicology and lexicography, and there, in particular, in the recognition, representation and use of lexical idiosyncrasies by both native speakers and learners of a language.
Since 2008, Bart Bijnens is an ICREA Research Professor at our Department. He graduated as Master of Electro-mechanical Engineering Sciences and obtained a Ph.D. in Medical Sciences at the KULeuven, using advanced imaging to address clinical questions. Before coming to Barcelona, he was Assoc. Professor at the Medical Faculty in Leuven, where he established a Cardiac Imaging Research Group; extended his experience in St. George’s Hospital, London; and established an interdisciplinary Cardiology-Engineering research group in Zagreb. Currently, he is performing multidisciplinary Systems Medicine Research addressing Cardiovascular Pathophysiology, by integrating information handling and computational techniques, combined with basic knowledge on cardiovascular physiology, in order to advance clinical sciences. He is Visiting Professor in the Faculty of Medicine in Leuven, the School of Medicine and the Faculty of Electrical Engineering&Computing in Zagreb. He has significantly contributed to his research field (>165 journal publications; >3900 ISI citations; h-index: 36). He is recognised as an international expert in Clinical Cardiovascular Pathophysiology and Cardiac Imaging.
Oscar Camara is an Associate Professor in our Department. He obtained a degree in Telecommunications Engineering from UPC (1999), and a Master and Ph.D. in Image Processing in the École Nationale Supérieure des Télécommunications, Paris (2000 and 2003, respectively). From 2004 to 2007, he did a postdoctoral stay, first at King’s College London and then at University College London. In July 2007, he joined UPF as “Ramón y Cajal” Fellow, where he is coordinating a research group called PhySense, that he founded in 2011. He is also coordinator of the Biomedical Engineering degree at the UPF. His research is focused on methodologies at the crossroad of computational imaging and computational modelling areas that can be effectively used in a clinical environment, including oncology, neurology and cardiology applications, among others. This work has lead to numerous scientific publications and presentations in conferences in both methodological and clinical fields (> 25 journals; > 69 contributions at ISI, > 650 citations; h-index: 14). He is actively involved in competitive national and European research project including strong collaborations with industrial and clinical partners.

Constantine Butakoff is a lecturer at our Department. He was born in Uzhhorod, Ukraine (1977). He obtained a degree in mathematics at the National University of Uzhhorod in 1999 and a Ph.D. from I3A, Universidad de Zaragoza, Spain. His research is focused on shape modeling and parameterization with applications in biomedicine. He is also interested in the application of computational geometry methods (surface and volume parametrization, transformations between the parametrizations) to characterize the cardiac geometry and establish correspondences between the shapes or populations of shapes (with and without variation in topology). Establishing correspondence is a considerable problem in cardiac data analysis since the different regional measurements on the surface and within the myocardium tend to have various parameterizations (viability and geometry in MRI, electrical properties in electrophysiological studies, deformation in echocardiography and tag-MRI, etc.) hampering comparison between the information obtained from different sensors or imaging modalities.
He studied Physics at the National University of Rosario. In 1987, he received his Ph.D. in Physics for his thesis on Relativistic Atomic Collisions. In 1997, he obtained his habilitation (maximal academic degree in Germany) in Computer Science at the Technical University of Munich for his thesis on Neural Learning. In 2001, he received his Ph.D. in Psychology at the Ludwig-Maximilian-University of Munich for his thesis on Visual Attention.

His research interests include computational neuroscience, neuropsychology, psycholinguistics, biological networks, statistical formulation of neural networks, and chaos theory. He has actively contributed to the modelling and integration of experimental measurements through theoretical frameworks, and collaborates with many experimentalists to confront theory and experiments. Recognised as a world leader in computational neuroscience, he has led pioneering work in dynamical modelling of human brain activity. He is an ERC Advanced grantee and member of the Human Brain Project.

Laura Dempere is an Associate Professor in our Department. She graduated in Physics (BSc in 1998 and MSc in 1999) from Universitat de València, and received a MSc degree in Remote Sensing and Image Processing Technologies from the University of Edinburgh (2000). In 2004 she obtained a PhD on Computer Vision from Imperial College London. Her research focus is on Visual Information Processing. In particular, she performs multidisciplinary research addressing the study of visual attention deployment, the relationship between eye movements and fundamental cognitive processes in vision (e.g. attention, memory, object recognition and decision-making), and theoretical modelling of the neural dynamics underlying such processes. Her work is positioned at the interface between Computer Vision and Computational Neuroscience. She was awarded the “Juan de la Cierva” Fellowship (2005) and the “Ramón y Cajal” Fellowship (2008). She has published over 30 papers in top ranked indexed journals and international conferences, which have had a significant impact in her research area as shown by a Field-Weighted Citation Impact of 5.10 (h = 10). She is also co-inventor of an international patent and received the Cum Laude Poster Award in the SPIE 2003 Medical Imaging Conference. She currently leads the Computational Vision Section of the Computational Neuroscience group.
GONZÁLEZ BALLESTER, Miguel Ángel
Research Professor

ICREA Research Professor at UPF since October 2013. Degree in Computer Science from Universitat Jaume I (1996), and doctorate from the University of Oxford (2000). He was a senior researcher at Toshiba Medical Systems (Japan), INRIA (France), and the University of Bern (Switzerland), where he was leading the Surgical Technology Division at the Faculty of Medicine. From 2008 until 2013 he was in charge of the Research Department of the company Alma IT Systems in Barcelona. His research focus is on computerised medical image analysis and computer-assisted surgery, including: image processing and computer vision, image-based diagnosis, medical imaging physics, computational modelling and simulation of virtual organs and surgical interventions, navigation in computer-assisted surgery, surgical devices and implants, surgical robotics and translational research focusing on concrete clinical and industrial applications. He is the coordinator for the European research project HEAR-EU, has approx. 150 publications in peer-reviewed scientific journals and conferences, and has supervised 14 Ph.D. theses. He was awarded Fellowships from Toshiba and the Japan Society for the Promotion of Science.

IVORRA CANO, Antoni
Associate Professor

Since 2010, Antoni Ivorra is a Ramón y Cajal Research Fellow at our department. He was born in Barcelona, Spain (1974). He obtained a degree and a Ph.D. in Electronics Engineering at the Universitat Politècnica de Catalunya. His research is mostly focused on bioelectrical phenomena and on exploring the use of these phenomena for implementing new methods and devices for biomedical applications. His main research topics are electroporation, particularly for cancer treatments, electrical bioimpedance for diagnostic purposes and wireless microstimulators for neuroprosthetics. Prior to his current appointment, he enjoyed a postdoctoral position at the University of California at Berkeley. He is author or coauthor of 32 publications in peer-reviewed journals, 3 book chapters and more than 30 conference contributions (> 550 ISI citations, h-index 15). He has been inventor or co-inventor of 10 families of patent applications. In addition he has performed multiple consultancy and technology transfer tasks for companies in the field of electrical bioimpedance and in the field of electroporation. Winner of the 2008 Big Ideas Contest by CITRIS of the University of California.
Montbrió, Ernest
Associate Professor

Ernest Montbrió is Associate Professor in our department since 2014. He studied Physics at the Universitat Autònoma de Barcelona (1999) and received his Ph.D. in Physics at the University of Potsdam (Germany) in 2004. His research focuses on the study of complex, nonlinear dynamical systems and its application to model wide-ranging problems, mostly in biology. This includes problems in computational neuroscience (emergence of large-scale oscillations in neuronal networks, synchronization, memory formation and consolidation, perceptual alternations) and, more generally, problems investigating the origin and function of biological oscillations. He has authored 13 articles all published in world-leading journals of Physics. His research receives funding from national and international agencies, including an EU ITN-European Joint Doctorate project.

Piella, Gemma
Associate Professor

Gemma Piella is an Associate Professor at the UPF since 2010. She obtained her degree in Telecommunication Engineering from the Universitat Politècnica de Catalunya (UPC), Barcelona, Spain, and a Ph.D. in Applied Sciences from the Universiteit van Amsterdam, The Netherlands. From 2003 to 2004, she was at UPC as a visiting professor. She then stayed at the École Nationale Supérieure des Télécommunications, Paris, as a post-doctoral Marie Curie fellowship until 2005. Since then she has been at the UPF, Barcelona, first as a visiting professor, then as a Ramón y Cajal researcher and currently as an Associate Professor. Her work has focused on multiresolution analyses, geometrical image processing, image fusion and registration. During the last years her main research interests have been in medical image registration for the quantification of heart motion and deformation.
Boris Bellalta is an Associate Professor in our Department. He obtained his degree in Telecommunications Engineering from UPC in 2002 and the Ph.D. in Information and Communication Technologies from UPF in 2007. Since 2005, he has held several research visiting appointments at Politecnico di Torino, Tampere University of Technology and Halmstad University. His research interests are in the area of wireless networks, with emphasis on the design and performance evaluation of new architectures and protocols. Understanding the coupled dynamics and interdependencies that appear in heterogeneous wireless networks between communicating devices when they have to share a common pool of resources is one of its current main activities. The results from his research have been published in more than 100 international journal and conference papers. He is currently involved in several international and national research projects, including the coordination of the ENTOMATIC FP7 collaborative project. At UPF he is giving several courses on networking, queueing theory and wireless networks. He is co-designer and coordinator of the interuniversity master’s degree in Wireless Communications (UPF and UPC).
Ezio Biglieri is an Honorary Professor in our Department and an Adjunct Professor of Electrical Engineering at UCLA. His research interests are on information theory, communications and signal processing.

He was elected three times to the Board of Governors of the IEEE Information Theory Society, and he served as its President in 1999. He has been Editor-in-Chief of the IEEE Transactions on Information Theory, the IEEE Communication Letters, the European Transactions on Telecommunications and of the Journal of Communications and Networks.

He has been in the editorial board for multiple other journals. He has further been a distinguished lecturer for both the IEEE Information Theory and the IEEE Communication Societies. He is an ISI Highly Cited researcher, author of eight textbooks and of several hundred papers. Among other honors, he received the IEEE Third-Millennium Medal, the IEEE Donald G. Fink Prize Paper Award, the IEEE Communications Society Armstrong Achievement Award, the IEEE Information Theory Society Wyner Award, the EURASIP Athanasios Papoulis Award, and the Journal of Communications and Networks Best Paper Award (twice).

Vanessa Daza is an Associate Professor in our Department. She was born in Barcelona, Spain (1976). She holds a degree in Mathematics at Universitat de Barcelona (1999) and a Ph.D. in Mathematics from Universitat Politècnica de Catalunya (2004). As part of her doctoral training, she visited research groups in cryptography at Università di Salerno (Italy) and Aarhus Universitet (Denmark). She worked as a researcher at the R&D Department of Scytl, an international crypto-based security company. In 2006, she joined Universitat Rovira i Virgili, first as a “Juan de la Cierva” Fellow, and afterwards as a lecturer. She joined Universitat Pompeu Fabra in 2008.

From an initial focus on rather theoretical cryptography, she has extended her knowledge and experience to rather applied cryptographic areas, making use of distributed cryptographic techniques to enhance security and privacy to different wireless networks scenarios, such as mobile ad-hoc networks or vehicular ad-hoc networks. Currently, her research is converging to the design of new cryptographic primitives to undertake these security and privacy challenges in emerging technologies. She has co-authored over 30 papers and she is the co-holder of two international patents, currently under exploitation.
Albert Guillén i Fàbregas is an ICREA Research Professor at our Department and an Adjunct Researcher at the University of Cambridge. He received the Telecommunication Engineering Degree and the Electronics Engineering Degree from Universitat Politècnica de Catalunya and Politecnico di Torino, respectively in 1999, and the Ph.D. in Communication Systems from École Polytechnique Fédérale de Lausanne in 2004. He has held appointments at the New Jersey Institute of Technology, Telecom Italia, European Space Agency, Institut Eurécom, University of South Australia and the University of Cambridge. He is a recipient of a Starting Grant of the European Research Council. He is a member of the Young Academy of Europe, Senior Member of the IEEE, Editor of the IEEE Transactions on Information Theory, Foundations and Trends in Communications and Information Theory and previously of the IEEE Transactions on Wireless Communications. He is a General co-Chair of the 2016 IEEE International Symposium on Information Theory, Barcelona, July 2016. He has published more than 120 articles, including 1 patent, 1 book, 2 book chapters, 37 journal articles, 9 invited and 74 refereed conference articles.

Jorge Lobo is an ICREA Research Professor in our department as well as Visiting Professor in the Department of Computing at Imperial College London.

He received his Ph.D. in Computer Science from the University of Maryland, College Park, and a M.Sc. and a B.E. from Simon Bolivar University, Venezuela. Before joining ICREA, he was Research Staff Member at IBM T. J. Watson Research Center. Prior to IBM, he was principal architect at Teltier Technologies, a startup company in the wireless telecom space, researcher at Bell Labs in Murray Hill and tenured associate professor at the University of Illinois at Chicago. His research interest crosses several areas in computers science: AI, Network and Distributed Systems Management, Security and Privacy. For the last 15 years he has been working in using tools and techniques from formal models of knowledge representation and reasoning for the management of computer and network systems. He has published two books, over 100 refereed articles in scientific journals and conference proceedings, and holds 9 patents in policy technologies. Jorge is an ACM Distinguished Scientist.
Since 2010, Angel Lozano is a Full Professor at our Department. He is also, since 2011, UPF’s Vice-Rector for Research. He received his Ph.D. from Stanford University in 1998. Before joining UPF, he was with Bell Labs in Holmdel, USA, and with Columbia University. Prof. Lozano is a Fellow of the IEEE, the Chair of the IEEE Communication Theory Technical Committee and an elected member of the Board of Governors of the IEEE Communications Society. His research is on wireless communications, at the intersection of information theory, digital communications and signal processing. The goal of his work is to improve the resource utilization in wireless networks so as to increase the bit rate that can be communicated reliably while consuming the least amount of bandwidth and power and with the least amount of complexity, which is a proxy for cost. Currently, he is looking into designs for 5G wireless networks. Prof. Lozano has published extensively (>46 journal papers; >1600 ISI citations; >4500 Scholar citations), holds 15 patents. His papers have received several awards including the Stephen O. Rice prize to the best paper published in the IEEE Trans. on Communications in 2008.

Alfonso Martinez (Zaragoza, 1973) has been a Ramón y Cajal Fellow since January 2012. He obtained his Engineering degree from the University of Zaragoza in 1997. In 1998-2003 he was a Systems Engineer at the European Space Agency, where his work on APSK modulation was instrumental in the definition of the new physical layer of DVB-S2. In 2003 to 2007 he was a doctoral candidate at TU Eindhoven, where he conducted research on optical communications. Between 2008 and 2011 he was a post-doctoral fellow with the Information-theoretic Learning Group at CWI in Amsterdam and the University of Cambridge. He is the Chair of the Spanish Chapter of the IEEE Information Society and serves as General Co-chair of the 2016 International Symposium on Information Theory, which will be held in Barcelona. His research interest lies in information theory, particularly on digital modulation and mismatched decoding; in this area he has coauthored a monograph on Bit-Interleaved Coded Modulation’. More broadly, he is intrigued by the connection between information theory and classical and quantum physics. He has written over 80 publications, including 20 journal papers.
Dolors Sala is an Associate Professor in our Department.

She received the degree in Computer Science from Universitat Autònoma de Barcelona and the MSc and Ph.D. degrees in Electrical and Computer Engineering from Georgia Institute of Technology on 1990, 1995 and 1998 respectively. She has contributed in many areas of broadband access to the home with a mix of experience in academia and industry with a leading role driving the industry sector in many of them.

She joined Motorola’s R&D department in Massachusetts on 1998 where she worked on the design of a CAC algorithm for an ATM switch product. On 1999, she joined the start up company Digital Furnace focused on the optimization of data transmission over HFC networks. In Broadcom, she led the R&D group of the broadband business unit towards the fiber technology and the Ethernet in the First Mile design to define the next generation broadband products. In 2003, Dr. Sala moved back to Spain joining UPF.

She has published scientific papers in top conferences and journals and made many technical contributions to international standards bodies. She holds more than 20 international patents in the field of broadband access technologies.
Campus de Poblenou

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Life in Barcelona

Barcelona has become an important cluster for research, attracting young and consolidated professionals and entrepreneurs from all over Europe and beyond. Its quality of life and relaxed lifestyle, together with eight universities and top-ranked business schools, make it a perfect environment for local and international talent to flourish.

DTIC provides a full support to students and faculty joining the UPF regardless if just for a few days or a longer period.
Pictures by Thomas Bonte, Tessy Troes and UPF