

Contact Information

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| Web address | http://www.jaumebarcelo.info |
| References | For references, please contact: Albert Banchs Universidad Carlos III de Madrid, associate professor. IMDEA Networks, deputy director. email: banchs@it.uc3m.es Miquel Oliver Universitat Pompeu Fabra, NeTS research group coordinator. email: miquel.oliver@upf.edu |

Research CV and Teaching Experience

Short Bio

Jaume Barcelo is a lecturer at Universitat Pompeu Fabra. He spend his postdoctoral years at Universidad Carlos III de Madrid and Institute IMDEA Networks. He holds a Ph.D. from Universitat Pompeu Fabra, a M. Eng. from Universitat Politecnica de Catalunya and a Bs.C. from Universitat de les Illes Balears. He also spend one of his undergraduate years in Kaiserslautern Universitaet in a radio communications research group. Jaume is active in the area of medium access control protocols for wireless networks and his work is focused in the decentralized construction of collision-free schedules. As a side interest, he also studies grassroots deployment of data networks.

Education

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| Universitat Pompeu Fabra | 2009 |
| Ph.D. in Computer Science and Digital Communications | |
| Thesis: Carrier Sense Multiple Access with Enhanced Collision Avoidance. | |
| Advisor: Prof. Miquel Oliver | |
| Universitat Politecnica de Catalunya | 2004 |
| Master of Science in Telecommunications | |
| Thesis: Deployment and configuration of an Open Access Network at the UPF. | |
| Advisor: Prof. Miquel Oliver. | |
| Universitat de les Illes Balears/Kaiserslautern Universitaet | 2001 |
| Bachelor of Science in Computer Communications | |
| Thesis: Impact of time variant channels on the performance of Joint Transmission downlinks. | |
| Advisor: Dr. Hendrik Troeger. / Dr. Ignasi Furio | |

Best Paper Awards

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| J. Barcelo, B. Bellalta, M. Oliver, A. Banchs, “Collision-Free Operation in Ad-Hoc Networks” | MACOM'11 |
| J. Barcelo, B. Bellalta, C. Cano, A.Sfairopoulou, M. Oliver, “Dynamic Parameter Adjustment in CSMA/ECA” | MACOM'10 |
| C. Cano, B. Bellalta, J. Barcelo, M. Oliver, A. Sfairopoulou “Analytical Model of the LPL with Wake up after Transmissions MAC protocol for WSNs” | ISWCS'09 |
| C. Cano, B. Bellalta, J. Barcelo, A. Sfairopoulou “A Novel MAC Protocol for Event-based Wireless Sensor Networks: Improving the Collective QoS” | WWIC'09 |
| J. Barcelo, B. Bellalta, C. Cano, M.Oliver, “Learning-BEB: Avoiding Collisions in WLAN” | Eunice'08 |

Invited Paper

IEEE VTC Spring'09

J. Barcelo, B. Bellalta, C. Cano, A. Sfairopoulou, M. Oliver,
“CSMA with Enhanced Collision Avoidance: a Performance Assessment”

Journals

IEEE Comm. Letters 2012

B. Bellalta, J. Barcelo, D. Staehle, A. Vinel, M. Oliver
“On the Performance of PAcKet Aggregation in IEEE 802.11ac MU-MIMO WLANs”

Accepted at Telecommun. Syst. Available online

J. Barcelo, B. Bellalta, C. Cano, A. Faridi, M. Oliver
“On the Distributed Construction of a Collision-Free Schedule in Multi-Hop Packet Radio Networks”

IEEE Comm. Letters 2011

J. Barcelo, H. Inaltekin, B. Bellalta,
“Obey or Play: Asymptotic Equivalence of Slotted Aloha with a Game Theoretic Contention Model”

EURASIP Journal on Wireless Communications and Networking 2011

J. Barcelo, B. Bellalta, C. Cano, A. Sfairopoulou, M. Oliver, K. Verma,
“Towards a Collision-Free WLAN: Dynamic Parameter Adjustment in CSMA / E2CA”

Springer Wireless Personal Communications 2011

B. Bellalta, J. Barcelo, M. Oliver,
“The role of the queueing process in the performance of Downlink SDMA systems”

Elsevier Mobile Networks and Applications 2011

C. Cano, B. Bellalta, A. Sfairopoulou, J. Barcelo,
“Taking Advantage of Overhearing in Low Power Listening WSNs: A Performance Analysis of the LWT-MAC Protocol”

Elsevier Computer Networks 2010

C. Cano, B. Bellalta, A. Sfairopoulou, J. Barcelo,
“Tuning the EDCA Parameters in WLANs with Heterogeneous Traffic: A Flow-level Analysis”

IEEE Comm. Letters 2009

C. Cano, B. Bellalta, A. Sfairopoulou, J. Barcelo
“A Low Power Listening MAC with Scheduled Wake Up after Transmissions for WSNs”

ACM Mobile Computing and Communications Review 2008
J. Barcelo, A. Sfairopoulou, B. Bellalta,
“Wireless Open Metropolitan Access Networks”

**Workshops and
conferences**

IEEE ICC'13 workshp Research2standards
L. Sanabria-Russo, A. Faridi, B. Bellalta, J. Barcelo, M. Oliver,
“Future Evolution of CSMA Protocols for the IEEE 802.11 Standard”

WoWMoM 2013 poster session
C. Cano, D. Malone, B. Bellalta, J. Barcelo,
**“On the Improvement of Receiver Initiated MAC Protocols for WSNs by
Applying Scheduling”**

MACOM'12 Demo session
L. Sanabria-Russo, J. Barcelo, A. Domingo, B. Bellalta
“Spectrum Sensing with USRP-E110”

European Wireless'12
G. Martorell, F. Riera-Palou, G. Femenies, J. Barcelo, B. Bellalta,‘
**“On the Performance Evaluation of CSMA/E2CA protocol with Open Loop
ARF-based Adaptive Modulation and Coding”**

IEEE ICC'10
J. Barcelo, A. Lopez-Toledo, C. Cano, M. Oliver,
**“Fairness and convergence of CSMA with Enhanced Collision Avoidance
(ECA)”**

NEUTRAL'09
J. Barcelo, J. Infante, M. Oliver,
**“Wireless Open Access Networks: State-of-the-Art and Technological Op-
portunities ”**

IWCMC'09
J. Barcelo, B. Bellalta, C. Cano, A.Sfairopoulou, M. Oliver,
**“Carrier Sense Multiple Access with Enhanced Collision Avoidance: a Per-
formance Analysis”**

MACOM (IEEE ICC'09)
J. Barcelo, B. Bellalta, C. Cano, A.Sfairopoulou, M. Oliver, J. Zuidweg,
**“Traffic Prioritization for Carrier Sense Multiple Access with Enhanced
Collision Avoidance”**

Jitel'08

J. Barcelo, B. Bellalta, A. Sfairopoulou, C. Cano, M. Oliver,
“Dynamic P-Persistent Backoff for Higher Efficiency and Implicit Prioritization”

IEEE/IFIP WONS'08

J. Barcelo, B. Bellalta, C. Cano, A.Sfairopoulou,
“VoIP Packet Delay in Single-Hop Ad-Hoc IEEE 802.11 Networks”

in book IFIP Vol. 265

J. Barcelo, B. Bellalta, C. Cano, A.Sfairopoulou,
“No Ack in IEEE 802.11e Single-Hop Ad-Hoc VoIP Networks”

WEBIST'07

J. Barcelo, B. Bellalta, C.Macian, M.Oliver, A.Sfairopoulou,
“Position Information for VoIP Emergency Calls Originating from a Wireless Metropolitan Access Network”

IEEE MCWC'06

J. Barcelo, C.Macian, P.Novell, M.Isidre, E. Arago,
“Offering VoIP Services in a Wireless Neutral Operator Environment”

ICQT (ACM Sigmetrics'06)

J. Barcelo, M.Oliver, J.Infante,
“Adapting a Captive Portal to enable SMS-based Micropayment for Wireless Internet Access”

IEEE TRIDENTCOM'06

J. Barcelo, C.Macian, J.Infante, M.Oliver, A.Sfairopoulou,
“Barcelona's Open Access Network Testbed”

**Dissemination
article**

Ars Technica 2011

I. van Beijnum, J. Barcelo,
“Cutting the cord: how the world's engineers built Wi-Fi”

**Unpublished
manuscripts**

https://github.com/jbarcelo/eca_tutorial_paper/blob/master/tutorial.pdf?raw=true
J. Barcelo, A. Faridi, B. Bellalta, G. Martorell, D. Malone,
“On the Distributed Construction of a Collision-Free Schedule in WLANs”

https://github.com/jbarcelo/bills_paper/blob/master/barcelo2012mdc.pdf?raw=true
J. Barcelo, N. Garcia, A. Faridi, S. Oechsner, B. Bellalta,
“Modelling a Decentralized Constraint Satisfaction Solver for Collision-Free Channel Access”

Research Grant

A4U 2010-2011
“Postdoctoral award. Media Access Control and Wireless Mesh Networks.”

Research Projects

Plan Nacional 20013-1015
Project Coordinator: Miquel Oliver
“Redes Inanlambricas de Sensores Inteligentes y Cooperativas”

CIP 20012-1014
Project Coordinator: Miquel Oliver
“Commons for Europe”

CICYT 2009-2011
Project Coordinator: Miquel Oliver
“Gestión P2P de tráfico multimedia con calidad de servicion sobre redes
malladas: Gepeto”

COST290 2004-2008
Project Coordinator: Y. Koucheryavy
“Traffic and QoS Management in Wireless Multimedia Networks”

FP6 2003-2007
Project Coordinator: Sergio Benedetto
“Network of Excellence in Wireless Communications”

CICYT 2003-2006
Project Coordinator: Joan Vinyes / Miquel Oliver
“Servicios Inteligentes Móviles Avanzados”

**Teaching
Experience**

Jaume is currently coordinating a degree in “Telematics” (Data networks and Internet technologies) at Universitat Pompeu Fabra and he is part of the teaching commission of the department. Jaume has also taught several courses that the graduate an undergraduate levels.

Courses Taught

Lecturer Spring’10, Spring’11, Winter’12, Winter’13
Contention Protocols Seminar (Grad. Course UC3M and UPF)

Lecturer Spring’13
Wireless Sensor Networks

Lecturer Spring’12, Spring’13
Networking Lab

Lecturer Spring’12, Spring’13
Quality of Service

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| | Lecturer Cryptography and Network Security (Grad. Course) | Fall'10, Fall'11 |
| | Lecturer Criptografía y seguridad en redes | Fall'10, Fall'11 |
| | Lecturer Laboratorio de Ingeniería de Servicios | Spring'10, Spring'11 |
| | Lecturer Xarxes i Serveis I | Fall'08 |
| | Lecturer Laboratori de Comunicacions | Spring'08 |
| | Teaching Assistant Xarxes i Serveis, Laboratori de Telemàtica III, Enginyeria de sistemes de transmissió | Fall'07, Spring'07, Spring'06, Spring'05 |
| Services | Organizer TPC | Eunice'09 (Publicity), MACOM'12 (TPC co-chair) Neutral'09, MACOM'10, MACOM'11, MESHTECH'11, VTC Spring'13 |
| Internships | Solutions and Customization Labs Intern Sant Cugat, Catalunya, Spain Developed internal tools to assist the validation of the customized products. | HP 2003-2004 |
| | Camp leader and instructor Stanford, Palo Alto, CA Web Design, Multimedia and Game Creation, Programming and Robotics. | ID Tech Camps Summer 2002 |
| | Electronic Sales Intern Lluchmajor, Mallorca, Spain On-line ticket sales developer and maintainer (Html/Wml/Javascript, PL/SQL, Oracle Application Server). | Air Europa Airlines Summer 2000 |