

CURRICULUM VITAE



Name Albert
Lastname GUILLÉN i FÀBREGAS
Place and date of birth Barcelona, Spain, 27 November 1974
Current Position Associate Professor, University of Cambridge
Researcher (part-time), Universitat Pompeu Fabra

CONTACT

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EDUCATION

2001- 2004 **École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland**
Ph.D. with thesis entitled “*Concatenated Codes for Block-Fading Channels*”
research performed at Institut Eurécom, Sophia-Antipolis, France

Defense committee: Prof. Giuseppe Caire (advisor), Prof. Joseph Boutros,
Prof. Raymond Knopp, Prof. Giorgio Taricco, Prof. Emre Telatar, Prof. Rüdiger Urbanke

1993-1999 **Universitat Politècnica de Catalunya, Barcelona, Spain**
Degree in Telecommunication Engineering with Speciality in Communications

1997-1999 **Politecnico di Torino, Torino, Italy**
Degree in Electronics Engineering

1998-1999 **New Jersey Institute of Technology, Newark, USA**
Final Research Project entitled “*Adaptive Equalization Schemes for TDMA Mobile Systems*”
under the supervision of Prof. Yeheskel Bar-Ness. Grade: A with Honors

1988-1992 **Escola Sant Gregori, Barcelona, Spain**
High School Degree and International Baccalaureate in Mathematics

EMPLOYMENT HISTORY

Oct 2020 -	Associate Professor , Department of Engineering, University of Cambridge	
Oct 2021 -	Researcher , (non-permanent, part-time) Universitat Pompeu Fabra	
Aug 2011 - Sep 2021	ICREA Research Professor , Universitat Pompeu Fabra (currently on leave) Interim Deputy Head of Department for Recruitment (Jan–Nov 2018)	
Oct 2012 - Sep 2020	Director of Research (non-permanent, part-time), Department of Engineering, University of Cambridge	
Oct 2011 - Sep 2012	Reader at the Department of Engineering, University of Cambridge Fellow of Trinity Hall	
Jan 2007 - Oct 2011	Lecturer at the Department of Engineering, University of Cambridge Fellow of Trinity Hall	
Sep 2004 - Nov 2006	Research Fellow at the Institute for Telecommunications Research, University of South Australia, Adelaide, Australia	
May 2001 - Jul 2004	Research and Teaching Assistant at Mobile Communications Department, Institut Eurécom, Sophia-Antipolis, France	Constellation Exhibit 2013
Sep 2000 - May 2001	Research Assistant at European Space Research and Technology Centre, European Space Agency (ESA), Noordwijk, The Netherlands	LG Electronics, Inc. v. Constellation Designs, LLC IPR2023-00228
Nov 1999 - Jun 2000	Research Assistant at Telecom Italia Research Labs, Torino, Italy	Page 1 of 16

VISITING APPOINTMENTS

April 2017	University of Brescia
June 2014	Princeton University
Sept 2010	Centrum Wiskunde & Informatica (CWI), Amsterdam, The Netherlands
Jun - Jul 2010	University of South Australia, Adelaide, Australia
May 2010	Texas A&M University at Qatar, Doha, Qatar
Jul 2009	Centrum Wiskunde & Informatica (CWI), Amsterdam, The Netherlands
Dec 2008 - Jan 2009	University of South Australia, Adelaide, Australia
Sept 2008	Universitat Pompeu Fabra, Barcelona, Spain
Jun 2005, Jun 2006	École Nationale Supérieure des Télécommunications, Paris, France
Oct 2003 - Jul 2004	École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

RESEARCH FUNDING

Principal investigator on grants of total value €4,200,000. Co-investigator in 3 grants of total value €500,000. One of the lead investigators in department grant €2,000,000.

2021-2024	Spanish Ministry of Economy and Competitiveness , National Plan for Science and Research. Coordinated project with Universidad Carlos III Madrid “Generalized and refined asymptotics in finite-blocklength information theory” Amount: €47,795. Role: Researcher.
2018-2021	Catalan Government , Pre-Consolidated Research Group competitive funding. Amount: €27,000. Role: PI.
2017-2023	European Commission, European Research Council , ERC Consolidator Grant, FP7, “Information Theory with Uncertain Laws”, Role: PI. Amount: €1,888,033
2017-2019	Spanish Ministry of Economy and Competitiveness , National Plan for Science and Research. Coordinated project with Universidad Carlos III Madrid and Universidad de Sevilla “Finite-length iterative decoding: fundamental limits, practical constructions and inference”, Role: PI. Amount: €78,000 + 1 PhD studentship.
2016-2019	Spanish Ministry of Economy and Competitiveness , Maria de Maeztu Program for Research Center Excellence, Department Funding. Role: Guarantor Researcher. Amount: €2,000,000.
2014-2016	Catalan Government , Emerging Research Group competitive funding. Amount: €20,000. Role: PI.
2013-2015	Spanish Ministry of Economy and Competitiveness , National Plan for Science and Research. Coordinated project with Universidad Carlos III Madrid and Universidad de Sevilla “Advances in Statistical Learning, Communications and Information Theory”, Role: PI. Amount: €100,500 + 1 PhD studentship.
2012-	European Science Foundation , European Cooperation in Science and Technology (COST) action in Optical Wireless Communications. Role: Partner.
2012-2014	European Commission , FP7 Marie Curie Intra-European Research Fellowship (Dr Alex Alvarado), “Bit-Interleaved Coded Modulation: Fundamental Understandings”, Role: Academic Host. Amount: €193,000.
2011-2013	Royal Society, Royal Academy of Engineering , Newton International Fellowships (Dr Alex Alvarado), “Fundamental Limits of Bit-Interleaved Coded Modulation”. Role: academic host. Amount: €66,000.
2011-2016	European Commission, European Research Council , ERC Starting Grant, FP7, “Finite-Length Information Theory”, Role: PI. Amount: €1,303,606 .
2010-2012	European Commission , FP7 Marie Curie Intra-European Research Fellowship (Dr Tobias Koch), “Communication in Integrated Circuits”, Role: Academic Host. Amount: €165,000.
2009-2011	Isaac Newton Trust , “Information Role Models in Cooperative Wireless Communications”, Role: Principal Investigator. Amount: £40,000. Co-I: Dr Jossy Sayir.
2009-2011	European Commission , FP7 Network of Excellence in Wireless Communications (NEWCOM ++), Role: Principal Investigator. Amount: £56,000. Co-I: Dr Jossy Sayir. Only partner in the UK.
2009-2011	European Commission , FP7 Marie Curie Intra-European Research Fellowship (Dr Jossy Sayir), “Information Role Models with Applications”, Role: Academic Host. Amount: €240,000
2009-2011	Royal Society , Joint International Project 2009-2011, “Achievable Information Rates of Bit-Interleaved Coded Modulation”. Role: PI. Amount: £12,000. Co-I: Dr Alfonso Martinez.
2009-2011	Sir Ross and Sir Keith Smith Fund, Cisco Systems , “Channel Coding for High-Speed Hybrid Free-Space Optical and Radio Frequency Communications”. Role: Co-I. Amount: £115,000. PI: Dr Nick Letzepis.
2008-2010	Australian Research Council , Discovery Project “Adaptive Broadband Wireless Communication”. Role: Co-I. Amount: £220,000. PI: Prof Lars Rasmussen.
2007	Royal Academy of Engineering , Distinguished Visiting Fellowships for Prof Ezio Biglieri. Amount: £5,000

2006-2008	Spanish Ministry of Education and Science , Research Project “High Performance Broadband Wireless Communications Systems”. Role: Co-I. Amount: €60,000. PI: Prof Ezio Biglieri.
2006-2008	Australian Government, Department of Education, Science and Training , French-Australian Science and Technology Program: ”Advanced Concepts for Future Broadband Wireless Networks”. Role: PI, Amount: £10,000
2005	University of South Australia , Australian Competitive Grant Developing Scheme, Early Career Researcher Program ”Coding for Wireless Broadband Mobile Networks”, Role: PI. Amount: £10,000.

INDUSTRY PROJECTS

Mar 2005	“Coding-diversity tradeoffs in non-coherent communications”, contract for Auspace and Astrium. Institution: University of South Australia. Role: Research Fellow.
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INVITED SESSION ORGANIZER

Nov 2019	Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA
Mar 2018	52nd Conference on Information Sciences and Systems, Princeton University
Feb 2016	2016 International Zürich Seminar on Communications, ETH Zürich
Mar 2012	46th Conference on Information Sciences and Systems, Princeton University

INVITED TALKS

Jan 2023	Information Theory Workshop at Universidad Carlos III Madrid (invitation only, expenses covered)
Oct 2022	8th Iberian Mathematical Meeting, Sevilla, Spain
Apr 2020	Workshop in honor of Andrew Viterbi, Technion – Israel Institute of Technology (<i>postponed</i>)
Feb 2020	2020 DLR-MIT-TUM Workshop on Coding and Random Access, Munich, Germany
Dec 2019	Huawei Mathematics Research Centre Paris (expenses covered)
Nov 2019	Imperial College London
Oct 2019	Workshop on Mathematical Data Science, Dürnstein, Austria (invitation only event)
Sept 2019	Mathematical Modeling for Science and Engineering, Naples (invitation only event)
Feb 2019	Information Theory and Applications Workshop at University of California, San Diego (invitation only event)
Dec 2018	ICSEE 2018, Eilat, Israel
Dec 2018	Technion – Israel Institute of Technology (expenses covered)
Oct 2018	Kings College London
Jan 2018	School of Mathematics, University of Bristol
Nov 2017	NSF Workshop on finite-length information theory, MIT (invitation only event, expenses covered)
Apr 2017	University of Brescia, Italy
Feb 2017	Information Theory and Applications Workshop at University of California, San Diego (invitation only event)
Nov 2016	ICSEE 2016 Symposium on Information Theory, Eilat, Israel (13 invited speakers, expenses covered)
Feb 2016	Information Theory and Applications Workshop at University of California, San Diego (invitation only event)
Nov 2015	Recent Advances in Network Information Theory and Coding Theory Journée GDR-CNRS, Lyon, France (keynote, expenses covered)
Nov 2015	Imperial College, London
Nov 2015	Supélec, Paris
July 2015	Munich Workshop on Coding and Modulation, Technical University of Munich (invitation only, expenses covered)
July 2015	Beyond iid Workshop, Banff International Research Station (expenses covered)
May 2015	Technical University of Munich, Germany
Nov 2014	Joint Workshop on Coding and Communications, Barcelona (invitation only event)
July 2014	International Conference on Signal Processing and Communications, Indian Institute of Science, Bangalore
May 2014	Beyond iid Workshop, National University of Singapore (expenses covered)
Feb 2014	International Workshop on Frontiers of Telecommunications and Coding at University of California, Los Angeles (invitation only event)
Feb 2014	Information Theory and Applications Workshop at University of California, San Diego (invitation only event)
Nov 2013	(poster) Frontiers of Engineering, US National Academy of Engineering and Euro-CASE, Chantilly, France (invitation only, expenses covered)
May 2013	Imperial College, London
Apr 2013	Applied Mathematics Department, Universitat Politècnica de Catalunya
Feb 2013	Information Theory and Applications Workshop at University of California, San Diego (invitation only event)
Feb 2013	University of British Columbia, Vancouver, Canada

Jan 2013	Comonsens Consolider Project, Universitat Pompeu Fabra
Oct 2012	50th Allerton Conference on Communication, Control and Computing organized by University of Illinois at Urbana-Champaign
Jan 2012	Universitat Politècnica de Catalunya
Dec 2011	Centre Tecnològic de Telecomunicacions de Catalunya
Dec 2011	Universitat Autònoma de Barcelona
Feb 2011	University of Southern California, Los Angeles
Feb 2011	Information Theory and Applications Workshop at University of California, San Diego (invitation only event)
Jan 2011	Chalmers University, Gothenburg, Sweden (expenses covered)
Dec 2009	Monash University, Australia (expenses covered)
Nov 2009	Communication and Information Theory Workshop at Technical University of Munich, Germany (invitation only, expenses covered)
Sept 2009	University of Surrey, Guildford (expenses covered)
Apr 2009	Estimation Theory and Information Theory Workshop at Princeton University (invitation only, expenses covered)
Nov 2008	KTH Royal Institute of Technology, Stockholm (expenses covered)
Jul 2008	Cambridge Networks and Communications Meeting, Centre for Mathematical Sciences
Jun 2007	Imperial College London, London (expenses covered)
May 2007	Computer Lab, Cambridge
Jan 2006	Australian Communications Theory Workshop, Perth, Australia

HONORS AND AWARDS

2022	Fellow of the Institute of Mathematics and its Applications (IMA)
2022	Fellow of the Institute of Electrical and Electronics Engineers (IEEE), <i>for contributions to the analysis and design of wireless communication systems</i>
2017	ERC Consolidator Grant , European Research Council
2013	Member of the Young Academy of Europe
2012	Accredited Full Professor by the Catalan University System Quality Agency
2011	ERC Starting Grant , European Research Council
2010	ICREA Senior Research Professorship (permanent research-only full professorship) by the Institució Catalana de Recerca i Estudis Avancats (ICREA), Catalan Government
2009	Senior Member of the Institute of Electrical and Electronics Engineers (IEEE)
2006	Ramón y Cajal Research Fellowship (5 years fellowship and project support), by the Spanish Ministry of Education and Science. Ranked 1st in Communications and Electronics Technologies (declined)
2006	ICREA Junior Research Fellowship (5 years fellowship and project support), by the Institució Catalana de Recerca i Estudis Avancats (ICREA), Catalan Government (declined)
2005	Accredited Lecturer by the Catalan University System Quality Agency
2004	Nokia Best Doctoral Thesis Award in Mobile Internet and 3rd Generation Mobile Solutions of the Spanish Institution of Telecommunications Engineers (COIT)
2004	Young Authors Award of the European Signal Processing Conference, Vienna, Austria, Sept 2004
2001	Research Fellowship from Institut Eurécom, Sophia-Antipolis, France
2000-2001	Research Fellowship (Spanish Trainee) of the Spanish Ministry of Science and Technology for a research appointment at ESA
1997-1999	Research Scholarship from the New Jersey Institute of Technology and Nokia Research, for the realization of the Final Research Project
1997-1999	Socrates-Erasmus Scholarship from the European Union: Double Degree in Telecommunications and Electronics Engineering, UPC and Politecnico di Torino

TEACHING EXPERIENCE

2020-	University of Cambridge
	<i>Communications</i> (IB Paper 6), 2nd Year Undergraduate Course (2021-2022)
	<i>Data Transmission</i> , 3rd Year Undergraduate Course (2021-)
	<i>Data Transmission</i> , Lab Leader, 3rd Year Undergraduate Course (2021-2022)
	<i>Advanced Information Theory and Coding</i> , 4th Year Module (2020-)

- 2012-2022 **Universitat Pompeu Fabra**
Information Theory and Coding, 2nd Year Undergraduate Course
Data Transmission and Coding, 2nd Year Undergraduate Course
Information Theory, Barcelona Graduate School of Mathematics, Graduate Course
Digital Communication Theory, Graduate Course
Advanced Wireless Communications, Graduate Course
co-organizer, Emerging Scientists Workshop (for 1st year graduate students)
- 2007-2012 **University of Cambridge**
Communications (IB Paper 6), 2nd Year Undergraduate Course
Advanced Wireless Communications (4F5), 4th Year Module
Data Transmission, Lab Leader, 3rd Year Course
Supervisor at Trinity Hall 2nd Year Course (IB Paper 6) covering the basics of control, signal processing and communications
- 2005-2006 **Lecturer Assistant** at the Institute for Telecommunications Research, University of South Australia of the Masters course *Modern Communications Systems*. Lectures: Optimal detection in Gaussian channels, channel capacity and channel codes. Tutorials: source/channel coding, information theory, modulation, detection.
- 2001-2003 **Teaching Assistant** Institut Eurécom, Sophia-Antipolis, France, of the following courses: *Introduction to Digital Communications* and *Introduction to Channel Coding Theory*, Computer lab sessions on numerical simulation and analysis of digital modulations, convolutional codes and Viterbi decoding.

DOCTORAL STUDENT SUPERVISION

- Oct 2018 - Sep 2022 **Parham Boroumand**, PhD student at University of Cambridge. Role: supervisor.
Topic: Mismatched Hypothesis Testing and Classification.
- Jan 2018 - Feb 2022 **Dr Ehsan Asadi**, PhD student at University of Cambridge. Role: supervisor.
Topic: Upper Bounds to the Mismatch Capacity.
- Oct 2015 - Jun 2019 **Dr Mahed Abroshan**, PhD student at University of Cambridge. Role: supervisor.
Topic: Coding for Insertion and Deletion Channels.
- Sep 2015 - Sep 2019 **Dr Arezou Rezazadeh**, PhD student at Universitat Pompeu Fabra. Role: supervisor.
Topic: Error Exponents of Multiple-Access with Correlated Sources.
- Oct 2011 - Sep 2014 **Dr Jonathan Scarlett**, Ph.D. student at University of Cambridge. Role: supervisor.
Topic: Mismatched decoding.
- Oct 2010 - Aug 2015 **Dr Jing Guo**, Ph.D. student at University of Cambridge. Role: supervisor.
Topic: Polar Coding.
- Oct 2008 - Feb 2013 **Dr Li Peng**, Ph.D. student at University of Cambridge. Role: supervisor.
Topic: Fundamentals of Bit-Interleaved Coded Modulation and Reliable Source Transmission.
- Oct 2008 - Feb 2012 **Dr Taufiq Asyhari**, Ph.D. student at University of Cambridge. Role: supervisor.
Topic: Nearest neighbour decoding for fading channels.
- Jan 2008 - Feb 2011 **Dr Adrià Tauste Campo**, Ph.D. student at University of Cambridge. Role: supervisor.
Topic: Topics on multiuser detection and joint source-channel coding.
- Feb 2006 - Dec 2009 **Dr Khoa Nguyen**, Ph.D. student at University of South Australia. Role: co-supervisor.
Topic: Adaptive transmission in block-fading channels. Thesis accepted forthwith without corrections; received 2010 Michael Miller Medal.

POSTDOCTORAL RESEARCH SUPERVISION

- Nov 2022 - **Francesc Molina**, postdoc at University of Cambridge. Role: supervisor.
Topic: Zero-rate reliable transmission.
- Jan 2021 - **Dr Lan Truong**, postdoc at University of Cambridge. Role: supervisor.
Topic: Random Coding Concentration in Information Theory.
- Jul 2019 - **Dr Giuseppe Cocco**, postdoc at Universitat Pompeu Fabra. Role: supervisor.
Topic: Information Theory with Uncertain Laws.
- Jan 2018- **Dr Mehdi Dabirnia**, postdoc at Universitat Pompeu Fabra. Role: supervisor.
Topic: Information Theory with Uncertain Laws.
- Nov 2014 - Dec 2015 **Dr Mehdi Molkarale**, postdoc at Universitat Pompeu Fabra. Role: supervisor.
Topic: Computational Finite-length Information Theory.
- Oct 2014 - **Dr Josep Font-Segura**, postdoc at Universitat Pompeu Fabra. Role: supervisor.
Topic: Finite-length Information Theory.
- Oct 2011 - Sept 2014 **Dr Gonzalo Vazquez-Vilar**, postdoc at Universitat Pompeu Fabra. Role: supervisor.
Topic: Finite-length Information Theory.

Mar 2012 - Aug 2013	Dr Adrià Tauste Campo , postdoc at Universitat Pompeu Fabra. Role: supervisor. Topic: Finite-length Information Theory.
Mar 2011 - Apr 2014	Dr Alex Alvarado , Newton International and Marie Curie Fellow at University of Cambridge. Role: academic host. Topic: Bit-Interleaved Coded Modulation.
Nov 2010 - Oct 2011	Dr Alfonso Martinez , Research Fellow at University of Cambridge. Role: academic host. Topic: Random Coding Bounds.
Jun 2010 - May 2012	Dr Tobias Koch , Marie Curie Fellow at University of Cambridge. Role: academic host. Topic: Communication in Integrated Circuits.
Jun 2009 - May 2011	Dr Jossy Sayir , Marie Curie Fellow at University of Cambridge. Role: academic host. Topic: Information role models with applications.
Oct 2008 - Jun 2010	Dr Gottfried Lechner , Postdoctoral Researcher at University of South Australia. Role: co-supervisor. Topic: Coding in fading channels.

PREDOCTORAL RESEARCH SUPERVISION

Feb - Apr 2020	Marco Bondaschi , research undergraduate student, Role: supervisor. Topic: Zero-rate reliability.
Feb - Nov 2006	Allen Chuang , MSc. student at University of Sydney. Role: co-supervisor. Topic: Information-Theoretic tradeoffs of ARQ fading channels.
Sept - Dec 2005	Qi Tang , Final Research Project (6 months), LDPC codes in block-fading channels. Role: supervisor.
2003	Alessandro Rossi , Final Research Project (6 months) Topic: Iterative decoding of space-time codes.

GRADUATE EXAMINATION

Apr 2021	Kuan Hsieh , PhD, University of Cambridge
Dec 2019	Pierre Escamilla , PhD, Telecom ParisTech
Sept 2019	David Kibloff , PhD, INSA & Université de Lyon
Dec 2018	Giulia Cervia , PhD, Université Cergy Portoise
May 2018	Lin Zhou , PhD, National Univeristy of Singapore
Apr 2018	Eli Haim , PhD, Tel-Aviv Univeristy
Dec 2017	Adam Grieg , PhD, University of Cambridge
Dec 2016	Chao He , PhD, Supélec, France
Aug 2015	Wei Yang , PhD, Chalmers University of Technology, Sweden
Sept 2014	Mine Alsan , PhD, Ecole Polytechnique Fédérale de Lausanne, Switzerland
Jun 2014	Adriano Pastore , PhD, Universitat Politècnica de Catalunya, Spain
Jun 2012	Jorge Plata Chaves , PhD, Universidad Carlos III, Spain
Apr 2011	David Morales Jimenez , PhD, Universidad de Málaga, Spain
Mar 2011	Pablo Martínez Olmos , PhD, Universidad de Sevilla, Spain
Jan 2011	Lotfollah Beygi , Licentiate Thesis, Chalmers University of Technology, Sweden
Dec 2010	Javier López , PhD, Universidad de Málaga, Spain
Jul 2009	Adam Backer , MPhil, University of Cambridge
May 2009	Symeon Chatzinotas , PhD, University of Surrey
Nov 2008	Francisco Javier Vázquez Araújo , PhD, Universidad de A Coruña, Spain
Apr 2007	Jaime Adeane , PhD, University of Cambridge

OTHER PROFESSIONAL ACTIVITIES

Editorships: Foundations and Trends in Communications and Information Theory, Now Publishers, May 2012 - ; IEEE Transactions on Information Theory, February 2013–2020; IEEE Transactions on Wireless Communications, 2007–2011.

General co-chair: 2016 IEEE International Symposium on Information Theory, Barcelona, Spain.

Technical Program Committee (TPC) co-chair: 2023 IEEE International Symposium on Information Theory, Taiwan; 2013 IEEE Information Theory Workshop, Sevilla, Spain.

Technical Program Committee (TPC) member: IEEE International Symposium on Information Theory (2012, 2013, 2018, 2019, 2020, 2021); International Zürich Seminar on Information and Communication (2018, 2020, 2022); IEEE Information Theory Workshop (2009, 2010, 2015); International Symposium on Turbo Codes & Iterative Processing (2012, 2014, 2020, 2023); European Signal Processing Conference (2012); IEEE International Conference on Communications (2009, 2010, 2011); International Symposium on Wireless Communications Systems (2010); IEEE International Conference on Telecommunications (2010); IEEE Vehicular Technology Conference (2005, 2007, 2008); IEEE Wireless Communications and Networking Conference (2008).

Technical Session Chair: Information Theory and Applications Workshop, San Diego (2017, 2013); IEEE International Symposium on Information Theory (2017, 2012, 2011, 2009); IEEE Information Theory Workshop (2016, 2009).

Invited Session Organizer: 46th, 52nd Annual Conference on Information Sciences and Systems, Princeton University; 2016 International Zürich Seminar, ETHZ; 2019 Asilomar Conference on Signals, Systems, and Computers.

Other Event Organization: 2023 European School of Information Theory, Bristol (steering committee); 2016 and 2017 Beyond iid in Information Theory Workshop; International Workshop on Frontiers of Telecommunications and Coding, February 2014, University of California, Los Angeles; Recent results session organizer at the 2005 International Symposium on Information Theory, Adelaide, Australia, Sept. 2005; Main organizer of the ACoRN 2005 Spring School on Coding and Information Theory, Adelaide, Australia, Sept. 2005; Main organizer of the Benelux Chapter of the Information Theory Society Seminar Series on Communications and Information Theory at ESA/ESTEC, 2000-2001.

Committee Work: Elected member IEEE Information Theory Society Fellows Evaluation Committee (2024-2027) and Conference Committee (2016-2018); Full Professor Promotion Committee, Search Committee (2011-2021), Department of Information and Communication Technologies, Universitat Pompeu Fabra; IT and Employment Committees, Trinity Hall.

Reviewing (Journals): IEEE Trans. Inf. Theory; IEEE Trans. Wireless Commun.; IEEE Trans. Commun.; IEEE Journal on Selected Areas on Communications; IEEE Communications Letters; IEEE Transactions on Signal Processing; EURASIP Journal on Applied Signal Processing.

Reviewing (Conferences): IEEE International Symposium on Information Theory, (ISIT); IEEE Information Theory Workshop; IEEE International Conference on Communications (ICC); IEEE Global Telecommunications Conference (Globecom), Vehicular Technology Conference (VTC), ACM/IEEE International Symposium on Modeling, Analysis and Simulation of Wireless and Mobile Systems; Australian Communications Theory Workshop; International ITG Workshop on Smart Antennas and Conference on Systems, Communications, and Coding (WSA&SCC)

Reviewing (Book Proposals): Cambridge University Press, John Wiley and Sons, Springer.

Reviewing (Project Proposals): European Research Council (ERC); Engineering and Physical Sciences Research Council (EPSRC), UK; Israel Science Foundation (ISF), Israel; US-Israel Binational Science Foundation; Austrian Science Fund (FWF), Austria; Qatar National Research Fund (QNRF), Qatar; Catalan Agency for Management of University and Research Grants.

Membership: Fellow IEEE (Information Theory and Communications Societies), Fellow Institute of Mathematics and its Applications (IMA), Member Young Academy of Europe, Member Barcelona Graduate School of Mathematics, (past) Junior Member of the Isaac Newton Institute for Mathematical Sciences.

LANGUAGE KNOWLEDGE

Catalan and Spanish, native

Engilsh, fluent

Italian, fluent

French, fluent

OTHER ACTIVITIES AND HOBBIES

1996-1998 Member of Board of European Students of Technology (BEST) UPC, Barcelona

1996 Royal Institute of Technology (KTH), Stockholm, Sweden, Board of European Students of Technology (BEST) Summer Course. Topic: "Applied Optics".

1996-1997 St. Quirze Tennis Center, Tennis School Coordinator

1995 Tennis Instructor Degree at the Federació Catalana de Tennis, Barcelona

1990-1997 Tennis coach

Hobbies Competition tennis, guitar playing, cooking, hiking

PUBLICATIONS

More than 200 authored and co-authored articles, including 1 patent, 2 books, 2 book chapters, 1 edited volume, 57 journal articles, 15 invited and 113 regular articles in refereed conference proceedings and 9 technical reports. All publications available on my homepage <http://www.dtic.upf.edu/~aguillen>.

Patents

[P1] R. De Gaudenzi, **A. Guillén i Fàbregas**, A. Martinez and B. Ponticelli, “[Coded Modulation Method for Communication System](#),” United States Patent n. US 2003-0223507-A1, Dec. 4, 2003. **Owned by ESA and used in the standard DVB-S2.**

Books

[B2] J. Scarlett, **A. Guillén i Fàbregas**, A. Somekh-Baruch and A. Martinez, “[Information-Theoretic Foundations of Mismatched Decoding](#)”, Foundations and Trends in Communications and Information Theory, NOW Publishers, vol. 17, no. 2-3, pp 149-400, 2020.

[B1] **A. Guillén i Fàbregas**, A. Martinez, G. Caire, “[Bit-Interleaved Coded Modulation](#)”, Foundations and Trends in Communications and Information Theory, NOW Publishers, vol. 5, no. 1-2, pp. 1-153, 2008.

Invited Book Chapters

[BC2] **A. Guillén i Fàbregas** and N. Letzepis, “Hybrid Free-Space Optical and Radio-Frequency Wireless Communications”, in *Optical Wireless Communication*, Cambridge University Press, 2012, S. Arnon, J. R. Barry, G. K. Karagiannidis, R. Schober, M. Uysal Eds. ISBN 9780521197878

[BC1] K. P. Liolis, R. De Gaudenzi, N. Alagha, A. Martinez, and **A. Guillén i Fàbregas**, “[Amplitude Phase Shift Keying Constellation Design and its Applications to Satellite Digital Video Broadcasting](#)”, in “Digital Video”, IN-TECH, ISBN 978-3-902613-44-8.

Edited Volumes

[EV1] Proceedings 2013 IEEE Information Theory Workshop, IEEE Press, Edited by **A. Guillén i Fàbregas**, M. Honig and A. Orlitsky, September 2013. ISBN 978-1-4799-1323-7.

Preprints

[P4] L. V. Truong and **A. Guillén i Fàbregas**, “[Generalized Random Gilbert-Varshamov Codes: Typical Error Exponent and Concentration Properties](#),” submitted to the *IEEE Transactions on Information Theory*, November 2022.

[P3] P. Boroumand and **A. Guillén i Fàbregas**, “[Universal Neyman-Pearson Classification with a Known Hypothesis](#)” submitted to *Information and Inference, a Journal of the IMA*, June 2022.

[P2] L. V. Truong, G. Cocco, J. Font-Segura and **A. Guillén i Fàbregas**, “[Concentration Properties of Random Codes](#),” submitted to the *IEEE Transactions on Information Theory*, March 2022.

[P1] E. Asadi Kangarshahi and **A. Guillén i Fàbregas**, “[Minimum Probability of Error of List Multiple Hypothesis Testing](#)”, submitted to *Information and Inference, a Journal of the IMA*, October 2021. Revised November 2022.

Journal Articles

[J57] E. Asadi Kangarshahi and **A. Guillén i Fàbregas**, “[A Sphere Packing Bound for Mismatched Decoding](#)”, to appear *IEEE Transactions on Information Theory*, 2023.

[J56] G. Cocco, **A. Guillén i Fàbregas** and J. Font-Segura, “[Typical Error Exponents: A Dual Domain Derivation](#),” to appear *IEEE Transactions on Information Theory*, 2023.

[J55] P. Boroumand and **A. Guillén i Fàbregas**, “[Mismatched Binary Hypothesis Testing: Error Exponent Sensitivity](#),” *IEEE Transactions on Information Theory*, vol. 68, no.10, pp. 6738-6761, October 2022.

[J54] M. Bondaschi, **A. Guillén i Fàbregas** and M. Dalai, “[Zero-rate Reliability Function for Mismatched Decoding](#),” *IEEE Transactions on Information Theory*, vol. 68, no. 3, pp. 1482-1495, March 2022.

[J53] M. Dabirnia, A. Martinez and **A. Guillén i Fàbregas**, “[A Recursive Quantizer Design Algorithm for Binary-Input Discrete Memoryless Channels](#),” *IEEE Transactions on Communications*, vol. 69, no. 8, pp. 5069-5078, August 2021.

[J52] M. Abroshan, R. Venkataramanan and **A. Guillén i Fàbregas**, “[Multilayer Codes for Synchronization from Deletions and Insertions](#)”, *IEEE Transactions on Information Theory*, Special Issue in Memory of Vladimir Levenshtein, vol. 67, no. 6, pp. 3342-3359, June 2021.

[J51] A. Rezazadeh, J. Font-Segura, A. Martinez, and **A. Guillén i Fàbregas**, “[Multi-class cost-constrained random coding for correlated sources over the multiple-access channel](#),” *Entropy*, Special Issue on Finite-Length Information Theory, vol. 23, no. 5, p. 569, May 2021.

[J50] E. Asadi Kangarshahi and **A. Guillén i Fàbregas**, “[A Single-Letter Upper Bound to the Mismatch Capacity](#)”, *IEEE Transactions on Information Theory*, vol. 67, no. 4, pp. 2013-2033, April 2021.

[J49] R. Averbuch, N. Merhav, N. Weinberger and **A. Guillén i Fàbregas**, “[Large Deviations Behavior of the Logarithmic Error Probability of Random Codes](#)”, *IEEE Transactions on Information Theory*, vol. 66, no. 11, pp. 6635 - 6659, Nov. 2020.

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