Curriculum Vitæ
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1 Biografia

Andrea Conti si è laureato (*summa cum laude*) in Ingegneria delle Telecomunicazioni e ha conseguito il titolo di Dottorato di Ricerca in Ingegneria Elettronica e Informatica presso l'Università degli Studi di Bologna, rispettivamente nel 1997 e nel 2001. Nel 1997 ha conseguito l'Abilitazione alla Professione di Ingegnere.

È Professore Associato presso l'Università degli Studi di Ferrara e, precedentemente, è stato ricercatore presso il Consorzio Nazionale Interuniversitario per le Telecomunicazioni (CNIT) e presso l'Istituto di Elettronica e di Ingegneria dell'Informazione e delle Telecomunicazioni (IEIIT), Consiglio Nazionale delle Ricerche (CNR), nell'Unità di Ricerca di Bologna. Nel 2001, ha svolto una internship presso il Wireless Systems Research Department, AT&T Research Laboratories, Middletown, NJ, USA. Dal 2003, ha visitato frequentemente il Wireless Information and Network Sciences Laboratory presso il prestigioso Massachusetts Institute of Technology (MIT), Cambridge, MA, USA, dove attualmente ricopre la posizione di Research Affiliate.

La sua attività di ricerca trova fondamento nella teoria delle comunicazioni e dell'informazione insieme all'inferenza statistica e all'ottimizzazione per risolvere problemi orientati alle applicazioni. I suoi interessi di ricerca riguardano sia la teoria che la sperimentazione di sistemi e reti wireless. In particolare, essi includono: localizzazione e navigazione cooperative; comunicazioni adattative in diversità; sicurezza intrinseca nelle reti wireless; e sensing stocastico distribuito. La sua ricerca ha ricevuto importanti riconoscimenti internazionali. L'HTE lo ha insignito della Medaglia in onore di Puskás Tivadar. Ha ricevuto l'IEEE Communications Society's Stephen O. Rice Prize in the Field of Communications Theory per l'articolo scientifico "Optimized Simple Bounds for Diversity Systems," IEEE TRANSACTIONS ON COMMUNICATIONS, Sep. 2009 e l'IEEE Communications Society's Fred W. Ellersick Prize per l'articolo scientifico "Network Localization and Navigation via Cooperation," IEEE COMMUNICATIONS MAGAZINE, May 2011. È coautore del libro internazionale *Wireless Sensor and Actuator Networks: Enabling Technologies, Information Processing and Protocol Design* (Elsevier, 2008).

Il Dr. Conti serve e ha servito la società come editor di importanti riviste , includendo: Editor per PROCEEDINGS OF THE IEEE, Special Issue on *Foundations and Trends in Localization Technologies* (2017 – 2018); Editor for the IEEE WIRELESS COMMUNICATIONS LETTERS (2012 – 2016); Editor for the IEEE COMMUNICATIONS LETTERS (2010 – 2015); e Editor for the IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS (2003 – 2009). Ha anche servito come Chair in numerose conferenze internazionali. Come ulteriore segno di stima dei suoi pari internazionali è stato eletto Chair del IEEE Communications Society's Radio Communications Technical Committee. È co-fondatore ed elected Secretary del IEEE Quantum Communications &

Information Technology Emerging Technical Subcommittee. È Fellow dell'IET ed è stato selezionato come IEEE Distinguished Lecturer.

Il Dr. Conti ha ricoperto il ruolo di leader in progetti nazionali e internazionali. Ha insegnato corsi presso sia l'Università di Ferrara che l'Università di Bologna. Ha ricevuto l'Abilitazione scientifica nazionale (ASN 2012). Per l'Università degli Studi di Ferrara svolge numerosi servizi: è Presidente del Consiglio della Ricerca di Ateneo, è membro del Senato Accademico, è membro del Presidio Qualità di Ateneo, ed è Delegato del Rettore per la ricerca.

2 Biography

Andrea Conti received the Laurea degree (*summa cum laude*) in telecommunications engineering and the Ph.D. degree in electronic engineering and computer science from the University of Bologna, Italy, in 1997 and 2001, respectively.

He is an Associate Professor at the University of Ferrara, Italy. Prior to joining the University of Ferrara, he was with the Consorzio Nazionale Interuniversitario per le Telecomunicazioni (CNIT) and with the Istituto di Elettronica e di Ingegneria dell'Informazione e delle Telecomunicazioni (IEIIT), Consiglio Nazionale delle Ricerche (CNR), at the Research Unit of Bologna. In Summer 2001, he was with the Wireless Systems Research Department at AT&T Research Laboratories. Since 2003, he has been a frequent visitor to the Wireless Information and Network Sciences Laboratory at the Massachusetts Institute of Technology (MIT), where he presently holds the Research Affiliate appointment.

His research encompasses communication and information theories together with statistical inference and optimization for solving real-world problems. His research interests involve theory and experimentation of wireless systems and networks including network localization and navigation, adaptive diversity communications, intrinsic network secrecy, and distributed random sensing. His research received important recognitions. He is recipient of the HTE Puskás Tivadar Medal and co-recipient of the IEEE Communications Society's Stephen O. Rice Prize in the Field of Communications Theory and the IEEE Communications Society's Fred W. Ellersick Prize. He is a coauthor of *Wireless Sensor and Actuator Networks: Enabling Technologies, Information Processing and Protocol Design* (Elsevier, 2008).

Dr. Conti has served as editor for IEEE journals, as well as chaired international conferences. He has been elected Chair of the IEEE Communications Society's Radio Communications Technical Committee. He is a co-founder and elected Secretary of the IEEE Quantum Communications & Information Technology Emerging Technical Subcommittee. He is an elected Fellow of the IET and has been selected as an IEEE Distinguished Lecturer.

Dr. Conti is and has been leader in national and international projects. He is and has been teaching courses at both the University of Ferrara and the University of Bologna, and received the national scientific habilitation (ASN 2012). He is serving the University of Ferrara as the elected President of the Research Council, member of the Academic Senate, member of the Presidio Qualità di Ateneo, and Delegate of the University for Research.

Contents

1 Biografia **1**

2 Biography **2**

3 Informazioni Principali **4**
3.1 Educazione 4
3.2 Esperienze di lavoro 4

4 Riconoscimenti **4**

5 Ricerca **5**
5.1 Interessi di ricerca 5
5.2 Attività di Ricerca Selezionate 5
5.3 Progetti di Ricerca Selezionati 7
5.4 Collaborazioni Internazionali 7

6 Insegnamento **8**
6.1 Esperienze di Insegnamento 8
6.2 Supervisione di Studenti 8
6.3 Riconoscimenti ottenuti dagli Studenti 9

7 Attività Professionali **9**
7.1 Affiliazioni 9
7.2 Servizi Professionali IEEE 9
7.3 Altri Servizi Professionali 10
7.4 Servizi Universitari 10

8 Pubblicazioni e Presentazioni **11**
8.1 Patents 11
8.2 Submitted Journal Papers 11
8.3 Journal Papers 11
8.4 Books & Books Chapters 15
8.5 Conference Papers 15
8.6 Reports 22
8.7 Thesis 23
8.8 Keynotes, Tutorials, and Seminars 23

3 Informazioni Principali

3.1 Educazione

- **Ph.D. in Electrical Engineering and Computer Science** Marzo 2001
  University of Bologna, Italy
  Topic: Personal Communication Systems
  Supervisori: Prof. Oreste Andrisano and Prof. Marco Chiani
- **Laurea in Telecommunications Engineering** Febbraio 1997
  University of Bologna, Italy *Summa cum laude*
  Topic: Frequency Hopping Systems for Mobile Radio Networks
  Supervisori: Prof. Oreste Andrisano and Prof. Marco Chiani
- **Diploma diPerito Tecnico Industriale** Giugno 1991
  Istituto Tecnico Industriale Aldini Valeriani, Bologna, Italy *Score 60/60*
  Elettronica e Telecomunicazioni

3.2 Esperienze di lavoro

- **Dipartimento di Ingegneria, Università degli Studi di Ferrara, Italia**
  Professore Associato, 2014 – present
- **Dipartimento di Ingegneria, Università degli Studi di Ferrara, Italia**
  Ricercatore e Professore Aggregato, 2005 – 2014
- **Istituto di Elettronica e di Ingegneria dell'Informazione e delle Telecomunicazioni (IEIIT) del Consiglio Nazionale delle Ricerche (CNR) - Sezione di Bologna, Italia**
  Ricercatore Senior – Progetto: "Virtual immersive communications (VICOM)", 2002 – 2005
- **Laboratory for Information & Decision Systems (LIDS), Massachusetts Institute of Technology, Cambridge, MA, USA**
  Research Affiliate, Frequent Visitor, 2003 – present
- **AT&T Labs – Research, Wireless Systems Research Department, Middletown, NJ, USA**
  Internship, 2001
- **Consorzio Nazionale Interuniversitario per le Telecomunicazioni (CNIT), University of Bologna, Italy**
  Ricercatore – Progetti: "Integration of Multimedia Services on Heterogeneous Satellite Networks", "Study of coding techniques for satellite mission DAVID ", e "Study, Design and Development of a Reconfigurable Satellite Network with Guaranteed Quality of Service for Multimedia Applications, CNIT/ASI", 1998 – 2002

4 Riconoscimenti

- **IEEE Communications Society Stephen O. Rice Prize in the Field of Communications Theory** for "the best original paper published in any journal financially sponsored or co-sponsored by the Communications Society in the previous 3 calendar years," 2012. Received for the paper "Optimized Simple Bounds for Diversity Systems," IEEE TRANSACTIONS ON COMMUNICATIONS, Settembre. 2009.
- **IEEE Communications Society Fred W. Ellersick Prize** for "the best article published in a Communications Society magazine in the previous 3 calendar years," 2012. Received for the paper "Network Localization and Navigation via Cooperation," IEEE COMMUNICATIONS MAGAZINE, Maggio 2011.

- **ASN 2012** Abilitazione Scientifica Nazionale per il ruolo di Professore di prima fascia, MIUR, Dicembre. 2013
- **Elected Fellow of the IET** Awarded to members who have demonstrated superior individual responsibility, sustained achievement and significant professionalism during their career, 2013.
- **IEEE Distinguished Lecturer** Selected by the IEEE Vehicular Technology Society, 2011 – 2015.
- **Outstanding Service Award** of the IEEE ComSoc Radio Communications Committee, 2015.

5 Ricerca

5.1 Interessi di ricerca

Gli interessi di ricerca del Dr. Conti riguardano sia la teoria che la sperimentazione di sistemi e reti wireless. La sua ricerca è guidata dalle applicazioni e si basa sulle teorie della comunicazione, localizzazione e informazione, sull'inferenza statistica e l'ottimizzazione per risolvere problemi concreti. Gli interessi di ricerca attuali includono la localizzazione cooperativa a elevata accuratezza, le comunicazioni adattative con diversità, la sicurezza nelle reti wireless, e il campionamento stocastico multidimensionale. Ha inoltre coordinato attività sperimentali e di telemisure su laboratori in rete. Segue una breve descrizione (in lingua inglese) di alcuni temi di ricerca selezionati.

5.2 Attività di Ricerca Selezionate

- **Adaptive Diversity Communication Systems**
  Design and analysis of adaptive and diversity systems, which are key enablers for efficient and reliable wireless communications. Derived a new class of upper and lower bounds on the performance of multichannel communications with non-ideal channel estimation. Such bounds are expressed in closed-form, easily invertible, and tight (e.g., fractions of a dB from the exact error probability) for all signal-to-noise ratios (SNRs). The bounds are useful as they: 1) provide the required SNR for a target performance of adaptive communication systems; and 2) enable network-level simulations that account for physical layer characteristics in a simple way. Proposed multichannel wireless systems that adapt signal constellations according to large-scale variations of the channel, such as those due to shadowing. Such adaptive technique is applicable to various settings (signaling format, diversity method, and channel knowledge) and is more practical than classical fast adaptive modulation techniques that track small-scale fading variations. The proposed technique surprisingly provides higher spectral efficiency than standard classical techniques when accounting for channel estimation resources.
- **Network Localization and Navigation Systems**
  Design and experimentation of network localization and navigation (NLN) systems. An innovative tractable model for range information has been established, which incorporates the propagation environment, signal features, and detection techniques required in wireless applications. Such a model serves as a cornerstone for the design, analysis, and simulation of wideband ranging systems. Based on the proposed model, the optimal energy detector with variable thresholds was derived to minimize the localization error while guaranteeing a target detection probability and false-alarm probability. Practical soft-decision and hard-decision localization algorithms were devised to fully exploit both spatial and temporal cooperation for position inference. Introduced the notion of network experimentation and proposed a methodology for characterizing cooperative wireless networks. Based on this methodology, extensive measurement campaigns were performed and various cooperative localization and navigation algorithms were compared under a common setting. To overcome the key

challenges of indoor wireless localization, he developed non-line-of- sight detection and mitigation algorithms, devised fusion of multimodal intra-node and inter-node measurements, and showed the effectiveness of the proposed approaches based on network experimentation.

- **Sensor radar networks and RFID**
  Solved a key target tracking problem in sensor radar networks in which the observations (received waveforms) are corrupted by impairments (noise, multipath, clutter, and non-line-of-sight conditions) leading to misdetection, false-alarm, and inaccurate position estimate. Proposed a solution to this problem, by selecting and processing a subset of representative observations based only on features extracted from the received waveforms. Results show that observation selection and processing significantly improve the localization accuracy. Developed a new impulsive backscattering modulation system for solving a practical problem of new generation radiofrequency identification and localization. A real- time ultra-wideband localization system using non-regenerative relays and network synchronization methods was also patented.

- **Network secrecy**
  Developed a foundation for design and analysis of wireless networks with secrecy provided by intrinsic properties such as node spatial distribution, wireless propagation medium, and aggregate network interference. Proposed strategies that mitigate eavesdropping capabilities, and quantified their benefits in terms of network secrecy metrics. Offered a new perspective on the role of network interference in communication confidentiality. Advocated interference engineering strategies for achieving a new level of communication confidentiality in multi-tier wireless networks with different degrees of coordination among the tiers. Provided a methodology for interference engineering in inhomogeneous wireless networks with intrinsic secrecy based on local and global secrecy metrics.

- **Frequency hopping, space-time coding, and power control techniques**
  Modeled advanced frequency-hopping systems with interference diversity and frequency diversity in wireless channels accounting for multipath fading and shadowing. His work demonstrated that convolutional codes with classical polynomial generators are non-optimal in fading channels and derived the optimal generators based on the concept of generalized transfer function of the error trellis diagram. Building on this concept, a pragmatic approach to space-time coding was proposed and optimal generators were derived as a function of the number of diversity branch and wireless channel characteristics. Proposed power control techniques that adapt the transmitted power to slow channel variations such as shadowing. Complete and partial compensation of slow processes are taken into account and how they affect both outage and the usage of terminal battery is analytically evaluated. Results show that partial compensation power control techniques extend battery life and reduce health-risks at the same level of performance.

- **Network of laboratories and telemeasurements**
  Coordinated experimental activity and telemeasurement for the characterization (bit error rate, spectra, eyes diagram, constellation, etc) of communications systems through heterogeneous communication networks with remote configuration of both instrumentation and DSP-based circuits, together with interconnections (via programmable RF connection matrix). Realized a cooperative distributed platform for sharing instruments and circuits within a network of laboratories. Proposed low complexity algorithm for acquisition, tracking and frequency offset recovery in DSP realization of high loaded CDMA satellite modem. Developed a 3D user interface for immersive access to remote resources. Exploited the cooperation among distributed laboratories by studying also the impact of communication network to the measurement quality. Managed and characterized the ITALSAT F2 CNIT satellite network at the UoR of Bologna. The link was in Ka-band (30GHz up - 20GHz dw). Characterized through experiments the heterogeneous network composed by satellite and wireless/wired terrestrial links for multimedia services.

- **Multidimensional stochastic sampling**
  Generalized the reconstruction of a stationary random process in one dimension, which, for regular sampling, was addressed by Balakrishnan and Lloyd based on Whittaker-Kotelnikov-Shannon sampling theory, while, for irregular sampling, was described by a Levinson's theorem establishing the condition for perfect reconstruction. Analyzed the sampling and reconstruction of spatiotemporal signals from randomly gathered samples in a multidimensional space. Derived the optimal interpolator as a function of signal properties (signal spectrum and spatial correlation) and sampling properties (inhomogeneous sensor spatial distribution, sample availability, and non-ideal knowledge of sensors positions). Characterized the impact of locations and measurements uncertainties on spatiotemporal signal reconstruction.

5.3 Progetti di Ricerca Selezionati

Il Dr. Conti è stato coinvolto in molteplici progetti di ricerca nazionali e internazionali. La lista di progetti dell'ultima decade in cui ha avuto ruoli di coordinamento include:

- Office of Naval Research Global 2017 – 2020
  Non-Collaborative Object Tracking (nCOT) - Grant N62909-18-1-2017 (230k$), Principal Investigator
- European Commission under H2020 MSCA-IF-GF 2016 – 2019
  MSCA-IF-2015-GF: PAssive Tracking of people and things for physical beHavior analysis (PATH) - Grant 703893 (245k€), Responsabile Scientifico
- Ministero dell'Istruzione, dell'Università e della Ricerca, Italy 2013 – 2016
  PRIN 2010/11: Green tags and sensors with utrawideband identification and localization capabilities (GRETA) - Grant 2010WHY5PR (207k€), Research Unit Responsible
- Ministero dello Sviluppo Economico, Italy 2010 – 2013
  INDUSTRIA2015: Multifunctional wireless system for the integrated management of electric energy, comfort and safety within buildings (WEBS) (181k€), Research Unit Responsible
- European Commission under FP7-IST EU 2010 – 2013
  Smart and Efficient Location, idEntification, and Cooperation Techniques (SELECT) - European Project grant 257544 (91k€), Research Unit Responsible
- European Commission under FP7-IST EU 2008 – 2010
  European Network of Excellence in Wireless Communications, NEWCom++ grant 216715 Task Leader
- European Commission under FP6-IST EU 2004 – 2007
  European Network of Excellence in Wireless Communications, NEWCom grant 507325 WP Leader

5.4 Collaborazioni Internazionali

Il Dr. Conti ha coltivato negli anni numerose collaborazioni internazionali con eminenti studiosi fra cui:

- Beijing University of Posts and Telecommunications (BUPT) – Prof. Norman C. Beaulieu;
- Daegu Gyeongbuk Institute of Science and Technology (DGIST) – Dr. Jemin Lee;
- King Abdullah University of Science and Technology – Prof. Mohamed-Slim Alouini;
- Leti CEA Tech – Dr. Raffaele D'Errico;
- Massachusetts Institute of Technology (MIT) – Prof. Moe Z. Win;
- Poznan University of Technology – Prof. Hanna Bogucka;
- Qualcomm Technologies Inc. – Dr. Santiago Mazuelas;

- Tsinghua University – Prof. Yuan Shen;
- University of Salamanca – Dr. Javier Prieto;
- University of Southampton – Prof. Lajos Hanzo;
- University of Southern California (USC) – Prof. William C. Lindsey.

6 Insegnamento

6.1 Esperienze di Insegnamento

Oltre quindici anni di esperienza nell'insegnamento di corsi per le Università degli Studi di Bologna e di Ferrara, anche ideando e lanciando nuovi corsi, fra cui:

- *Tecniche di decisione, stima e sensing distribuito* (nuovo corso lanciato), 6 CFU, 2017/18 – presente
- *Sistemi Wireless*, 6 CFU, Università di Ferrara, 2015/16 – presente
- *Sistemi di Telecomunicazioni*, 6 CFU, Università di Ferrara, 2004/05 – 2014/15
- *Laboratorio di Segnali e Sistemi*, 6 CFU alternate, Università di Ferrara, 2010/11 – presente
- *Sistemi Wireless* (modulo di *Internet e Sistemi Wireless*), 3 CFU, Università di Ferrara, 2004/05 – 2010/11
- *Comunicazioni Elettriche*, 6 CFU, Università di Bologna, 2005/06
- *Laboratorio di Telecomunicazioni* (nuovo corso lanciato), 6 CFU, Università di Bologna, 2001/02 – 2004/05
- *Fundamentals on Mobile Radio Communications*, CNIT Tele-learning Project for worldwide Ph.D., 2001/02 – 2003/04
- *Sistemi di Radiocomunicazione*, Aerospatial Engineering, Università di Bologna a Forlì, 2000/01

6.2 Supervisione di Studenti

Supervisionati studenti di dottorato fra cui:

- Stefano Guerrini, *Quantum Communications*, Università di Ferrara, 2017 – presente.
- Giovanni Chisci, *Wireless Intrinsic Network Secrecy*, Università di Ferrara, 2015 – 2018 (ora presso DE, Università di Ferrara, e KAUST).
- Jinous Shafiei Dehkordi, *Context-Aware Wireless Communication Systems*, Università di Ferrara, 2013 – 2017 (ora presso DE, Università di Ferrara).
- Stefania Bartoletti, *Passive Network Localization*, Università di Ferrara, 2012 – 2014 (ora Marie Curie Fellow, MIT).
- Cristina La Palombara, *Relay-Assisted Communications*, Università di Bologna, 2010 – 2012 (ora presso ALLNET Italia).
- Flavio Zabini, *Wireless multimedia systems: equalization techniques, nonlinearities on OFDM signals and echo suppression*, Università di Bologna, 2007 – 2009 (ora presso DEI, Università di Bologna).
- Laura Toni, *Adaptive wireless multimedia communication systems*, Università di Bologna, 2006 – 2008 (ora con UCL e EPFL).
- Barbara M. Masini, *WLAN and WPAN coexistence, Multicarrier systems*, Università di Bologna, 2005 – 2007 (ora presso IEIIT-CNR, Bologna).

In aggiunta, sono stato supervisionati oltre sessanta laureandi.

6.3 Riconoscimenti ottenuti dagli Studenti

- Wenhan Dai, Bryan Teague, and Zhenyu Liu hanno vinto la **IEEE Communications Society Student Competition** *Communications Technology Changing the World* (First Prize) for "Cooperative Networks for Ubiquitous Localization and Navigation," Team co-advisor, IEEE Communications Society, 2016.
- Stefania Bartoletti ha ricevuto il prestigioso **Paul Baran Young Scholar Award** for her work on "Network localization and navigation," The Marconi Society, Mountain View, CA, Sep. 2016.
- Stefania Bartoletti ha ricevuto il **Best Ph.D. Theses Award** in the field of Communication Technologies, GTTI, 2015.

7 Attività Professionali

7.1 Affiliazioni

- Fellow of the Institution of Engineering and Technology (IET)
- Senior Member of the Institute of Electrical and Electronics Engineers (IEEE)
- Research Affiliate of Wireless Laboratory at University of Bologna
- Research Affiliate of Laboratory for Information & Decision Systems at Massachusetts Institute of Technology (MIT)
- Consorzio Nazionale Interuniversitario per le Telecomunicazioni (CNIT)
- Associazione Gruppo Telecomunicazioni e Tecnologie dell'Informazione (GTTI)

7.2 Servizi Professionali IEEE

- Editor for PROCEEDINGS OF THE IEEE, Special Issue on *Foundations and Trends in Localization Technologies* (2017 – 2018)
- Co-Chair of Wireless Communications Symposium for IEEE Globecom 2017
- Founding Officer and Secretary of the Quantum Communications & Information Technology (QCIT) Emerging Technical Subcommittee (2015 – 2018)
- IEEE Eric E. Sumner Award Committee (Appointment 2015 – present)
- Co-Chair of the IEEE QCIT Workshop (2015 – 2017)
- IEEE Distinguished Lecturer (Appointment 2011 – 2013, Renewed 2013 – 2015)
- IEEE Kiyo Tomiyasu Award Committee (Appointment 2013 – 2014)
- IEEE A&A Review Panel (IEEE Senior Member Review 2012)
- IEEE Vehicular Technology Society Distinguished Lecturer (2011 – 2013, 2013 – 2015)
- Founding Co-Chair of the IEEE Workshop on Advances in Network Localization and Navigation (ANLN) (2013 – 2015)
- Chair of the IEEE ComSoc Radio Communications Committee (2013 – 2014)
- Vice-Chair of the IEEE ComSoc Radio Communications Committee (2011 – 2012)
- Secretary of the IEEE ComSoc Radio Communications Committee (2009 – 2010)
- Editor for the IEEE WIRELESS COMMUNICATIONS LETTERS (2012 – 2016)

- Editor for the IEEE COMMUNICATIONS LETTERS (2010 – 2015)
- Editor for the IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS (2003 – 2009)
- Technical Program Vice-Chair for IEEE ICC 2013
- Co-Chair of UWB Communication Systems and Signal Processing for IEEE ICUWB 2012
- Technical Program Chair for IEEE ICUWB 2011
- Technical Program Co-Chair for IEEE VTC 2011-Spring
- Co-Chair of Wireless Communications Symposium for IEEE Globecom 2010
- Co-Chair of Technical Program Committee for NEWCom++ Event in FUNEMS 2010
- Technical Program Committee Vice-Chair for IEEE WCNC 2009
- Chair of International Workshop Ultrawide Bandwidth: A Paradigm for Tomorrows Networking Applications 2008
- Technical Program Committee Member for numerous IEEE Conferences
- Reviewer for a numerous IEEE Conferences and Journals

7.3 Altri Servizi Professionali

- Technical Program Chair for EUSIPCO 2016
- Lead Editor for the EURASIP JASP (S.I. on Wireless Cooperative Networks, 2008)
- Evaluator of proposals for the COST Open Call oc-2012-1, appointed by the European Commission in the Domain of Information and Communication Technologies, Aug. 2012
- Evaluator of project proposals for the Romanian National Council for Scientific Research, appointed by Romanian National Council for Scientific Research, Aug. 2011
- Evaluator of proposals for the COST Open Call oc-2011-1, appointed by the European Commission in the Domain of Information and Communication Technologies, Feb. 2011
- Evaluator of proposals for the COST Open Call oc-2010-1, appointed by the European Commission in the Domain of Information and Communication Technologies, Sep. 2010
- External examiner for Ph.D. Thesis for the University of Alberta, Canada, Sep. 2010

7.4 Servizi Universitari

- Delegato alla Ricerca, Università di Ferrara (2016 – presente)
- Membro del Senato Accademico, Università di Ferrara (2016 – presente)
- Membro del Presidio Qualità di Ateneo, Università di Ferrara (2017 – presente)
- Presidente eletto del Consiglio della Ricerca, Università di Ferrara (2015 – presente)
- Membro della Giunta del Dipartimento di Ingegneria, Università di Ferrara (2011 – 2017)
- Membro Consiglio del Centro Linguistico di Ateneo, Università di Ferrara (2006 – presente)
- Rappresentante dell'Unità di Ricerca nell'Assemblea dei Soci, CNIT (2017 – presente)
- Rappresentante dell'Unità di Ricerca nel Comitato Scientifico, CNIT (2014 – 2016)
- Rappresentante Università di Ferrara, GTTI (2016 – present)

8 Pubblicazioni e Presentazioni

8.1 Patents

[1] M. Z. Win, S. Bartoletti, W. Dai, and A. Conti, "Wideband ranging system," U.S. Utility Patent Application 15/627,822, Jun. 20, 2017.

[2] R. D'Errico, A. Conti, D. Dardari, and A. Sibille, "Localization method and system using non-regenerative UWB relays," U.S. Patent 9,311,798 B2, Dec. 13, 2012.

[3] M. Bottazzi, E. Savioli, F. Natali, N. Hadaschik, D. Dardari, and A. Conti, "Synchronization of a real-time UWB locating system," U.S. Patent 9,413,418 B2, Jul. 15, 2012.

8.2 Submitted Journal Papers

[1] G. Chisci, H. ElSawy, A. Conti, M.-S. Alouini, and M. Z. Win, "Spatiotemporal modeling for uncoordinated massive wireless networks," *IEEE/ACM Trans. Netw.*, 2018, in revision.

[2] A. Conti, S. Mazuelas, S. Bartoletti, M. Z. Win, and W. C. Lindsey, "Soft information for localization of things," *Proc. IEEE*, 2018, special issue on *Foundations and Trends in Localization Technologies*, **Invited Paper**.

[3] G. Chisci, A. Conti, L. Mucchi, and M. Z. Win, "Intrinsic secrecy in inhomogeneous stochastic networks," *IEEE/ACM Trans. Netw.*, 2016, accepted with minor changes.

8.3 Journal Papers

[1] S. Bartoletti, A. Conti, W. Dai, and M. Z. Win, "Threshold profiling for wideband ranging," *IEEE Signal Process. Lett.*, vol. IEEE Xplore Early Access, 2018.

[2] S. Mazuelas, A. Conti, J. C. Allen, and M. Z. Win, "Soft range information for network localization," *IEEE Trans. Signal Process.*, vol. IEEE Xplore Early Access, 2018.

[3] T. Wang, Y. Shen, A. Conti, and M. Z. Win, "Network navigation with scheduling: Error evolution," *IEEE Trans. Inf. Theory*, vol. 63, no. 11, pp. 7509–7534, Nov. 2017.

[4] J. Shafiei Dehkordi, A. Conti, and N. C. Beaulieu, "Adaptive communications for stochastic networks," *IEEE Trans. Veh. Technol.*, vol. 66, no. 9, pp. 8263–8275, Sep. 2017.

[5] S. Bartoletti, A. Conti, and M. Z. Win, "Device-free counting via wideband signals," *IEEE J. Sel. Areas Commun.*, vol. 35, no. 5, pp. 1163–1174, May 2017.

[6] F. Zabini and A. Conti, "Inhomogeneous poisson sampling of finite-energy signals with uncertainties in $\mathbb{R}^d$," *IEEE Trans. Signal Process.*, vol. 64, no. 18, pp. 4679–4694, Sep. 2016.

[7] K. Witrisal, P. Meissner, E. Leitinger, Y. Shen, C. Gustafson, F. Tufvesson, K. Haneda, D. Dardari, A. F. Molisch, A. Conti, and M. Z. Win, "High-accuracy localization for assisted living: 5G systems will turn multipath channels from foe to friend," *IEEE Signal Process. Mag.*, vol. 33, no. 2, pp. 59–70, Mar. 2016.

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