Andrea Zanella - Curriculum Vitae (last updated on April, 2018)

First & Last name	Andrea Zanella	
Generality	Birth place & date	Padova (ITALY), Nov. 8, 1972
	Nationality	Italian
	Social number	ZNLNDR72S08G224T
	Address	Via G. Marconi, n. 69/B, Cadoneghe (PD), cap. 35010
	Contacts	*Phone:* (+39) 328 4381447
		Fax: (+39) 049827 7699
		E-mail: zanella@dei.unipd.it
		Web: www.dei.unipd.it/∼zanella

Short Bio

Andrea Zanella is Associate Professor at the Department of Information Engineering of the University of Padova, in Italy, and he is representative of his department in the Board of Directors of the Human Inspired Technologies (HIT) research center. He received the Laurea degree in Computer Engineering in 1998 (*summa cum laude*), and the Ph.D. in Electronic and Telecommunications Engineering in 2002, from the same University. From December 1, 2000 to September 1, 2001, he was engaged as post-doc researcher at the Department of Computer Science of the University of California, Los Angeles (UCLA), where he worked on Wireless Networks and Wireless Access to Internet in collaboration with Prof. Mario Gerla.

His major research interest is in the field of protocol design and performance evaluation of wireless systems. In particular, he has large expertise in the modeling and performance analysis of wireless local and personal area networks, protocol design and performance analysis of Internet of Things (IoT) and Machine-to-Machine (M2M) systems, cross-layer and cognitive protocols for multimedia transmissions over resource constrained networks, and localization algorithms for indoor wireless nodes. In the recent years, furthermore, he has started a new research trail addressed to the design of pure hydrodynamic microfluidic systems. In this context, he is leading an academic interdepartmental research project that is developing and experimenting some basic microfluidic devices to realize fundamental network functionalities. To date, he is (co)-author of 3 international patents and more than 100 papers appeared in international peer-reviewed journals and conference proceedings, with 3 best paper awards.

Andrea Zanella has long experience of participation in national and international collaborative research projects, included the FP7 projects SAPHYRE, MEDIEVAL, ARA-GORN, NEWCOM. Furthermore, he has being involved in a number of collaboration with leading companies in the ICT field, as Alcatel Lucent Bell Labs, Telenor, Philips, ST-microelectronics.

Beside research, Andrea Zanella has also long teaching experience, maturated by lecturing many bachelor and master classes in *Telecommunication Networks* and *Protocols for data transmissions and multimedia communications*. Furthermore, he is member of the PhD School in Information Engineering at the University of Padova, and he has supervised three PhD and tens of bachelor and master students.

Finally, currently he is *IEEE senior member*, and serves as Technical Area Editor for the **IEEE Internet of Thing Journal** and Associate Editor for the following journals: **IEEE Communications Surveys and Tutorials**, **IEEE Transactions on Cognitive Communications and Networking**, **Digital Communications and Networks (DCN) journal**. Furthermore, he serves as reviewer for several IEEE journals and international conferences in the ICT area. He is one of the coordinators of the SIGnals and NETworking (SIGNET) research lab, and he is board member for the PhD School on Information Engineering.

Main research topics (overview)

RESEARCH AREAS

Andrea Zanella is mainly interested on the **Protocols design and performance evaluation of wireless networks.**

- **5G and M2M Communications**
  - Medium access protocols in dense networks (RFTags, M2M, WSNs, MANETs)
  - Small cells management issues
  - SDN and NFV in 5G
- **Internet of Things and Wireless Sensor Networks**
  - IoT for Smart cities: architecture design and experimentation
  - Localization algorithms for WSNs
  - Ambient intelligence and augment reality
  - Communication protocols in vehicular networks (VANET)
  - WPAN configuration and management
- **Multimedia over wireless networks**
  - Cognitive techniques for QoE optimization in wireless networks
  - Voice over IP over Wireless networks
  - Transmission of 3D models over wireless networks
  - Scheduling algorithms for multimedia communications in WPANs
- **Analysis and optimization of wireless systems**
  - Resource management in cellular systems
  - Analysis and modeling of WLANs
  - Use of wireless systems in industrial environments
- **Other research topics**
  - Design and experimentation of microfluidic networking solutions
  - Stability and performance of networked control systems with realistic feedback channels
  - Optimization policies for Smart Grids

Education

PH.D. DEGREE — **University of Padova**, Padova, Italy — Jan. 1998 - Feb. 2002

- Area: Electronics and Telecommunications Engineering
- Thesis: " Analysis and Modeling of Wireless Networks"
- Supervisor: Prof. Gianfranco Pierobon
- Topics:
  - Markov Models of radio channels with fading
  - Performance analysis of a Bluetooth point-to-point connection
  - Scheduling algorithms for Bluetooth scatternets
  - Definition and analysis of a hybrid UMTS/Bluetooth network
  - Mathematical analysis of MAC protocols for Local Multipoint Distribution Systems
  - TCP transmission over lossy networks
  - TCP Westwood: performance analysis

MASTER DEGREE — **University of Padova**, Padova, Italy — Oct. 20, 1998

- Curriculum: Computer Engineering (Ingegneria Informatica)
- Thesis: "Performance analysis of the Contention-TDMA protocol"
- Supervisor: Prof. Gianfranco Pierobon
- Grade: *Summa cum laude*
- Topic:
  - mathematical analysis of the Contention-TDMA protocol for Local Multipoint Distribution Systems

Qualifications & Grants

ASSOCIATE PROFESSOR — University of Padova — Dec. 1, 2014

- Scientific sector ING-INF/03 Telecommunications

ASSISTANT PROFESSOR — University of Padova — Jan. 28, 2003 – Nov. 30, 2014

- Scientific sector ING-INF/03 Telecommunications
- Call published in the Official Gazette n. 53, 4^ special series of Jul. 5, 2002

RESEARCH GRANT — University of Padova — Mar. 01, 2002

- Project: "Bluetooth-based ad-hoc wireless networks"
- Duration: 24 months

STUDY GRANT — University of Padova — Dec. 1, 2001 – Feb. 20, 2002

- Project: "OFDM systems applied to WLAN"
- Duration: 3 months

PHD GRANT — National government — Nov. 01, 1998 – Nov. 1, 2001

- Project: "Analysis and Modeling of Wireless data Networks"
- Duration: 3 years

VISITING SCHOLAR — Fondazione Ing. Aldo Gini/University of California, Los Angeles — Dec. 1, 2000

- Duration: 9 months

Teaching

Teaching at University of Padova

Course	AY	Hours	Level	Language
Reti di Telecomunicazioni	03/04	54	Bachelor	Italian
Reti di Telecomunicazioni	04/05	54	Bachelor	Italian
Reti di Telecomunicazioni	05/06	54	Bachelor	Italian
Reti di Telecomunicazioni	06/07	54	Bachelor	Italian
Reti di Telecomunicazioni	07/08	54	Bachelor	Italian
Reti di Telecomunicazioni	08/09	78	Master	Italian
Reti di Telecomunicazioni	09/10	78	Master	Italian
Telecommunication Networks	11/12	78	Master	English
Reti di Telecomunicazioni	12/13	72	Master	Italian
Telecommunication Networks	13/14	72	Master	English
Telecommunication Networks	14/15	72	Master	English
Telecommunication Networks	15/16	72	Master	English
Telecommunication Networks	16/17	72	Master	English
Laboratorio di Telecomunicazioni	14/15	24	Bachelor	Italian
Laboratorio di Telecomunicazioni	15/16	48	Bachelor	Italian
Laboratorio di Internet e Multimedia	16/17	48	Bachelor	Italian
Protocolli per la Trasmissione Dati e le Comunicazioni Multimediali	05/06	54	Master	Italian
Protocolli per la Trasmissione Dati e le Comunicazioni Multimediali	06/07	54	Master	Italian
Protocolli per la Trasmissione Dati e le Comunicazioni Multimediali	07/08	54	Master	Italian

- **Reti di telecomunicazioni / Telecommunication Networks**
  - Syllabus: The module provides an introduction to networking fundamentals, TCP/IP protocols, QoS concept and protocols, and basic queueing theory. The actual syllabus, however, has been updated every year to keep pace with the technological progresses and in accordance with the variations of the educational offer of the curriculum.
  - The course also entails some laboratory experiences to provide hands-on experience with networking devices and procedures. The lab experiences include netkit, static routing on CISCO routers, RIP, TCP & UDP, firewall (iptables), and socket programming.
  - Website: `http://www.dei.unipd.it/~zanella/courses/TLCNET/`
- **Laboratorio di Telecomunicazioni**
  - Syllabus: fundamental tools for network analysis (ping, iperf), socket programming, image/video representation and coding (color plans, jpeg, mpeg), bit error rate and inter-symbol interference, eye diagram, optical fibres fundamentals.
  - Laboratory: characterization of Internet connection via ping, iperf. Realization of a client-server program with UDP and TCP sockets. Image capturing and elaboration. Realization of a proto-jpeg codec. Realization of a wireless connection and observation of the constellations and effect of noise. Realization of optical fibre connection and experimental characterization of the connection performance.

- Website: http://www.dei.unipd.it/~zanella/courses/LABTLC/

- **Protocolli per la Trasmissione Dati e le Comunicazioni Multimediali / Protocols for data transmissions and multimedia communications**
  - Syllabus: Multimedia services and QoS metrics. Source coding techniques. Encoding techniques of audio, voice, images, and videos. Protocols for audio/video streaming and IP telephony. Protocols for multicast transmission of multimedia content. QoS-oriented transmission protocols: ATM, Frame Relay, MPLS, IEEE 802.11e.
  - Laboratory: setup of VoIP network based on Asterisk server, setup of multicast network, test of application-layer error concealment techniques.
  - Website: http://www.dei.unipd.it/~zanella/courses/PDCM/

- **Master in technologies, economy, and management of communication systems and media** from 2004 to 2008, for a total of **24 h** of teaching.

Teaching experience abroad

UCLA - University of California, Los Angeles, California, USA.

- Tutor junior for the class CS215: Computer Science (Prof. M. Gerla) from Dec. 1, 2000 till Sep. 3, 2001

Coordination and organization

Research group

SIGNET: SIGnal processing and NETWorking research group 2003-Today
- Area of interest: telecommunication networks and signal processing
- About 20 researchers (PhD students, post docs, and young engineers)
- Website: http://telecom.dei.unipd.it/signet

PhD school

Doctoral School of Information Engineering @ University of Padova
- Member of the School board 2005-2009, 2014-Today
- Mentor of the PhD student Federico Chiariotti 2016-2019
- Mentor of the PhD student Daniel Zucchetto 2016-2019
- Mentor of the PhD student Andrea Biral 2014-2016
- Mentor of the PhD student Francesco Zorzi 2007-2009
- Mentor of the PhD student Elena Fasolo 2005-2007
- Member of the examination committee for the doctoral defence of Alexey Baraev, University of Trento Apr. 28, 2014

Students

Supervisor of more than 60 bachelor degree theses, and more than 60 master degree theses 2003-Today

Local committees

Members of the following committees

- *Board of directors of the HIT interdepartmental center* 2014-Today
  - Mission: delegate of DEI in the board of directors of the Human Inspired Technology Research Centre (HIT, http://hit.psy.unipd.it), whose purpose is creating interdisciplinary synergies that may open new research fields, provide significant advancements in topical areas, and give rise to joint research activities and projects.

- *Communication Committee of DEI* 2009-2016

- Mission: promoting the activities of the department to the public, fostering technology transfer towards local and national industry, providing educational guidance to students for the disciplines of the Information Engineering school, improving the communication between teachers and enrolled students, designing and managing the department website, organizing the participation of DEI to the *European Night of Researchers*.

- *Communication Committee of the Engineering Faculty* 2009-2012
  - Mission: providing educational guidance to perspective students for the disciplines of the Engineering faculty, organizing tutoring events.

- *Curriculum Committee for the Telecommunication Engineering degree* 2006-2009
  - Mission: reviewing and approving the program of studies for the Telecommunication Engineering master degree.

Professional service

ASSOCIATIONS

Member of the following associations, consortia, working groups, and research centers

- *IEEE* (Institute of Electrical and Electronics Engineers). Member since 1998. Awarded the **IEEE Senior Membership** in 2013.
- *NetWorld2020 ETP* (formerly Net!Works ETP). Member of the ETP, and of the *Expert Group* for the definition of the long term vision of 5G of cellular systems.
- *EFFRA* (European Factories of the Future Research Association). Member of the ETP, whose objective is shaping the priorities of the Factories of the Future PPP.
- *CNIT* (Consorzio Nazionale Interuniversitario per le Telecomunicazioni). Affiliated since 1998.
- *GTTI* (Associazione Gruppo Telecomunicazioni e Tecnologie dell'Informazione). Affiliated since 2009.
- *CFR* (Consorzio Ferrara Ricerche). Affiliated since 2008.
- *HIT* (Human Inspired Technology Research Centre). Affiliated since 2013.

EDITORIAL ACTIVITY

Guest Editor for the following Special Issues
- *Imaging in Internet of Things*, Journal of Imaging, MDPI, ISSN 2313-433X 2016
- *Smart City: vision and reality*, Sensor Journal, MDPI, ISSN 1424-8220 2016

Area Editor for the *IEEE Internet of Thing Journal* 10/2016 – Today

Associate Editor for
- *IEEE Trans. on Cognitive Communications & Networking* 2015 – Today
- *IEEE Communications Surveys and Tutorials* 2016 – Today
- *IEEE Internet of Thing Journal* 2013 – 2016
- *Digital Communications and Networks (DCN) - Elsevier* 2015 – Today
- *ISRN Communications and Networking Journal - Hindawi* 2008 – 2014

CONFERENCE ORGANIZATION

General co-chair
- Workshop on multiMedia Applications over Wireless Networks 2011

TPC Technical co-chair
- Workshop on multiMedia Applications over Wireless Networks 2006
- Workshop on multiMedia Applications over Wireless Networks 2007

- Workshop on multiMedia Applications over Wireless Networks 2008

TPC Publicity co-chair

- Wireless Personal and Multimedia Communications - WPMC 2005

TECHNICAL PROGRAM COMMITTEES

TPC member of the major conferences in the ICT sector, *including (but not limited to)*:

- IEEE ICC (multiple tracks) 2008-today
- IEEE Globecom 2007-today
- IEEE WCNC (multiple tracks) 2007-today
- IEEE ISCC 2008-2014
- IEEE VTC Spring/Fall (multiple tracks) 2010-2014
- IEEE PIMRC (multiple tracks) 2008-2013
- IEEE SECON 2004
- IEEE EuCNC 2014
- RoboSense 2012-2013
- BICT (International Conference on Bio-inspired Information and Communications Technologies) 2014

PEER-REVIEWING

Reviewer for several journal, magazines, and conferences in the ICT sector, *including (but not limited to)*:

- IEEE Journal on Internet of Things
- IEEE Transactions on Communications
- IEEE Transactions on Mobile Computing
- IEEE Transactions on Wireless Communications
- IEEE Transactions on Vehicular Technology
- IEEE Transactions on Parallel and Distributed Systems
- IEEE Transactions on Industrial Informatics
- IEEE Transactions on Multimedia
- IEEE Transactions on Mobile Computing
- IEEE Journal on Selected Areas in Communications
- IEEE/ACM Transactions on Networking
- IEEE Wireless Communication Letters
- IEEE Communication Letters
- ACM Wireless Networks
- ACM Mobile Networks and Applications Journal

Fund raising

UNIVERSITY PROJECTS

MiNet May 1, 2014 – Apr. 30, 2015

- Title: "Microfluidic Networking: introducing networking technologies in microfluidic systems"
- Type: cross-sector university project funded by the University of Padova (progetto di ateneo inter-area)
- Funding: 54031 €
- Topics: analysis and design of devices for the interconnection of microfluidic Lab-on-Chips
- Role: Principal Investigator

CogNet Jan. 3, 2013– Jan. 3, 2015

- Title: "Cognition-based networks: applying cognitive science to wireless networking"
- Type: university project for a junior research grant, funded by University of Padova (assegno di ricerca junior)

- Funding: 45892 €
- Topics: applying advanced cognition techniques to network optimization
- Role: Principal Investigator

THIRD PARTY CONTRACT

EC-Centric: an energy-centric optimization framework for IoT nodes Feb. 19, 2015– Feb. 18, 2016

- Type: research study funded by Intel's Corporate Research Council
- Funding: 581,759 USD
- Topics: fundamental analysis of energy/distortion tradeoffs in joint scheduling/routing/MAC protocols for the IoT
- Role: Co-Principal Investigator

Investigation and Design of Energy-Efficient Protocols for Dense Uplink Machine-to-Machine (M2M) Communications Feb. 19, 2015– Feb. 18, 2016

- Type: research study funded by Alcatel-Lucent USA Inc., a Delaware corporation
- Funding: 20000 €
- Topics: fundamental analysis of M2M performance limits
- Role: Principal Investigator

Padova Smart City Feb. 1, 2013– Apr. 18, 2013

- Type: research study funded by Padova's municipality
- Funding: 20000 €
- Topics: architecture for urban Internet of Things systems
- Role: Principal Investigator

Videosat: May 28, 2014– July 27, 2014

- Title: "Design of a multi-party conference system for real-time remote monitoring of glass waste screening" (Studio di un sistema di monitoraggio remoto delle operazioni di analisi del rottame vetroso)
- Type: research study funded by Consorzio Recupero Vetro (CoReVe)
- Funding: 2400 €
- Topics: feasibility analysis and design of a multi-video conference with hybrid satellite/terrestrial connections
- Role: Principal Investigator

MeshNet: Dec. 1, 2013– Dec. 31, 2013

- Title: "Design of urban mesh networks with structural constraints" (Studio di soluzioni per la realizzazione di reti Mesh ad estensione cittadina con vincoli strutturali)
- Type: research study funded by Consorzio Ferrara Ricerche for Inthegra s.r.l.
- Funding: 2800 €
- Topics: feasibility analysis and design of a urban multi-hop mesh network with nodes position constraints
- Role: Principal Investigator

SIREN Dec. 7, 2011

- Title: "SensIng Radio Emissions and ambieNt parameters"
- Type: consulting study funded by Lantech s.r.l.
- Funding: 3255 €
- Topics: localization techniques for wireless sensor networks
- Role: Consultant

Research projects

INTERNATIONAL RESEARCH PROJECTS

Participation to the following research projects:

FP7-ICT-2009.1.1: IOT-A, 01/09/2010 – 31/08/2013

- Title: "Internet of Things Architecture"
- Funding: Strep, IST Project No. FP7-ICT-2009.1.3, Project reference: 257521
- Topics: sviluppo di un modello architetturale di riferimento per l'interoperabilità della Internet-of-Things
- Role: senior researcher

FP7-ICT-2009.1.1: SAPHYRE, Jan. 01, 2010 – Dec. 31, 2012

- Title: "Sharing physical resources mechanisms and implementations for wireless networks"
- Funding: Strep, IST Project No. FP7-ICT-2009.1.1, Project reference: 248001
- Topics: resource management in cellular systems with shared resources
- Role: senior researcher

FP7-ICT-2009.1.1:MEDIEVAL, Jan. 01, 2010 – Dec. 31, 2012

- Title: "MultimEDia transport for mobIlE Video AppLications"
- Funding: Strep, IST Project No. FP7-ICT-2009.1.1, Project reference: 258053
- Topics: transmission of multilayer-encoded video in mobile radio networks
- Role: senior researcher

FP7-ICT-2007-1: ARAGORN, Jan. 01, 2008 – Aug. 31, 2010

- Title: "Adaptive Reconfigurable Access and Generic interfaces for Optimization in Radio Networks"
- Funding: Strep, IST Project No. FP7-ICT-2007-1, Project reference: 216856
- Topics: cognitive techniques for the optimization of heterogeneous radio systems
- Role: key person, representative and coordinator of the CFR research unit

FP7-ICT-2007.1.1: NEWCOM++, Jan. 01, 2008 – Dec. 31, 2010

- Title: "Network of Excellence in Wireless Communications"
- Funding: Network of Excellence, IST Project FP7-ICT-2007.1.1, Project reference: 216715
- Topics: WP11 "Opportunistic Networking"
- Role: key person, representative and coordinator of the CNIT-PD research unit in WP11, Leader of the JRA: "Opportunistic localization"

FP6-2002-2.3.2.5: Embedded WiSeNts, Sep. 01, 2004 – Dec. 31, 2006

- Title: "Cooperating Embedded Systems for Exploration and Control featuring Wireless Sensor Networks"
- Funding: Coordination Action, IST Project FP6-2002-2.3.2.5, Project reference: 004400
- Topics: embedded cooperative systems
- Role: key person, representative and coordinator of the UNIPD research unit, Work package leader for WP4: "Education and Training", Task leader for Task 3.2.1: "Paradigms for algorithms and Interactions"

FP6-ICT-2002-2.3.1.4: NEWCOM, Mar. 01, 2004 – Feb. 28, 2007

- Title: "Network of Excellence in Wireless COMmunications"
- Funding: Network of Excellence, IST Project FP6-ICT-2002-2.3.1.4, Project reference: 507325
- Topics: inter-vehicular and opportunistic communication
- Role: key person

COST273 2004 – 2007,

- Title: “Towards Mobile Broadband Multimedia Networks”
- Funding: COST Action
- Topics: WP3: Radio Network Aspects
- Role: key person, representative of UNIPD research unit in WP3

National research projects

PRAT 2012: MiNET — Apr. 30, 2013 – Apr. 30, 2015
- Title: "Microfluidic Networking (MiNET): introducing networking technologies in microfluidic systems'
- Funding: University of Padova (Progetto di Ateneo 2012)
- Topics: analysis and design of devices for the interconnection of microfluidic circuits
- Role: **Principal Investigator**

Progetto di Eccellenza CaRiPaRo 2012, — Sep. 2012 – Sep. 2015
- Title: "A Novel Approach to Wireless Networking based on Cognitive Science and Distributed Intelligence"
- Funding: Fondazione CA.RI.PA.RO, Progetto di Eccellenza (private foundation)
- Topics: application of advanced learning techniques to the optimization of data networks
- Role: project manager

PRIN 2009, — Oct. 17, 2011 – Oct. 17, 2013
- Title: "Inoltro Veloce e Intelligente di Risorse Digitali per Fini Altruistici "
- Funding: PRIN 2009 (national government)
- Topics: design and analysis of opportunistic protocols for social purposes
- Role: senior researcher

Progetto di Eccellenza Fondazione CaRiPaRo 2007, — Jun. 2007 – May 2011
- Title: "WISEWAI: WIreless SEnsor networks for city-Wide Ambient Intelligence"
- Funding: Fondazione CA.RI.PA.RO, Progetto di Eccellenza (private foundation)
- Topics: design and realization of a wide scale sensor network
- Role: key person, coordinator of the research group CarLOT: Localization & Tracking

PRAT 2008: RAMSES2, — 2006 – 2008
- Title: "Integration of autonomous mobile robots and wireless sensor network for surveillance and rescue"
- Funding: university project funded by the University of Padova (progetto di ateneo)
- Topics: realization of a hybrid AMR/WSN system
- Role: key person

FIRB 2002: P.R.I.M.O., — Nov. 2002 – Oct. 2005
- Title: "Reconfigurable platforms for mobile interoperability"
- Funding: FIRB 2002 (national government)
- Topics: design and analysis of MAC & scheduling algorithms for multimedia support
- Role: representative of UNIPD in WP6

Industrial research projects & Collaborations

Nokia-Bell Labs (USA & Ireland), Toyota (USA), INTEL (USA & Ireland), Feb. 19, 2015 – ongoing
- Title: "Investigation and Design of Energy-Efficient Protocols for Dense Uplink Machine-to-Machine (M2M) Communications"
- Topics: performance analysis of uplink cellular system in presence of MTC
- Role: project co-coordinator

TELENOR (Norway), — Apr. 9, 2014 – ongoing
- Title: "DEINOR"
- Topics: performance analysis of downlink LTE MAC scheduling issues in NS3
- Role: project coordinator

NTT-DoCoMo Eurolabs (Munich, Germany), — Jun. 01, 2005 – May 31, 2007
- Title: "Efficient Data Gathering and Dissemination in Pervasive Wireless Networks"
- Topics: Network coding techniques for data aggregation in sensor networks

- Role: senior researcher

ST-microelectronics (Italy), Jun. 01, 2005 – May 31, 2007
- Title: "Cross-Layer Optimization in cognitive WLAN environments"
- Topics: Cross-layer techniques for the support of multimedia traffic on WiFi networks
- Role: key person

TILAB (Italy). Dec. 16, 2004 – Dec. 15, 2005
- Title: "Integration of Mobile Ad-hoc Networks with Mobile Radio Network: modeling and routing issues"
- Topics: Integration of cellular networks and MANET
- Role: key person

Patavina Technologies(Padova, Italia) Jan 2012- Mar. 2012
- Title: "SIREN: SensIng Radio Emissions and ambieNt parameters"
- Argomento: sviluppo di dispositivo sensore per monitoraggio attivit radio
- Role: ricerca e training del personale

U-Blox
- Title: "Which Room? "
- Argomento: sviluppo di un sistema di localizzazione perimetrale indoro
- Role: coordinatore del team di ricerca

Networking Activities

Keynotes & Seminars

- *Relevance and impact of the research topic.* The final purpose of any researcher is to increase the knowledge in a certain sector or open new, promising research fields. Clearly, the more relevant the topic for the scientific community and the society, the higher the potential impact of the research in that field. Therefore, the popularity of a research topic is clearly an important factor to be considered when selecting the subjects to be investigated. According to this criterion, my research activity has often considered relevant and popular subjects, such as the optimization of Transmission Control Protocol (TCP) over wireless link, localization in wireless sensor networks, the use of wireless technologies in industrial environments, data transmission in VANETs, and others. Despite the tough competition in each of these areas, some of my works (e.g., [42][115][127][156]) have been recognized by the scientific community as significant contributions to the advancement of the state of the art and have been cited several times.

- *Interdisciplinarity.* Another important factor that has contributed to steering my research activity is the search for synergies with other disciplines. Indeed, it is my firm conviction that the hybridization with scientists from other sectors, though hampered by the several technical and ideological barriers that mark the borders of the different scientific areas, is fundamental to widen the breadth of the research, enlarging the field of application of different disciplines and promoting the circulation of ideas and knowledge among the researchers. Pursuing these objectives, I have established several collaborations with other research groups on topics of mutual interest, as briefly described below.

Publications

Awards

- [**Best student paper award**] Marco Giordani, Andrea Zanella and Michele Zorzi, *Millimeter Wave Communication in Vehicular Networks: Challenges and Opportunities* in the Proceedings of the 6th International Conference on Circuits and Systems Technologies (MOCAST) Thessaloniki, Greece, 4 - 6 May 2017
- [**Best student paper award**] F. Guidolin, I. Pappalardo, A. Zanella, M. Zorzi , *Context-Aware Handover in HetNets* in the Proceedings of the European Conference on Networks and Communications 2014, 23-26 Jun. 2014, Bologna, Italy. DOI: 10.1109/EuCNC.2014.6882635
- [**Best paper award**] E. Menegatti, M. Danieletto, M. Mina, A. Pretto, A. Bardella, S. Zanconato, P. Zanuttigh, and A. Zanella, "Autonomous discovery, localization and recognition of smart objects through WSN and image features," IEEE Globecom, SaCoNas Workshop, 6 Jul. 2010, Miami, USA. DOI: 10.1109/GLOCOMW.2010.5700221
- [**Best paper award**] D. Miorandi and A. Zanella, "Performance Analysis of Limited-1 Polling in a Bluetooth Piconet" the 9th Multi-Conference on Systemics, Cybernetics and Informatics and Co-located Conferences, 10–13 Jul. 2005, Orlando, Florida, USA.

CITATION INDEXES Google Scholar website Updated on 2018/04/06

- URL: http://scholar.google.it/citations?user=l3MzZV4AAAAJ&hl=en
- Number of works: About 44 journal publications, 110+ conference papers, 5 book chapters, 4 patents.
- Citations: 4200+
- Citations of the top 4 most cited papers: 1481, 283, 269, 212
- h-index: 27
- i10-hindex: 63

Scopus Updated on 2018/04/06

- URL: http://www.scopus.com/authid/detail.url?authorId=7102861462
- Number of works: 126
- Citations: 2140
- Citations of the top 4 most cited papers: 726, 175, 139, 125
- h-index: 16

PATENTS

[1] *Method for explicit quality-of-service support in 5G networks* 2017

- Inventors: Chiariotti F., Zanella A, Kucera S.
- Number: PCT/EP2017/082279
- Application Date: 11 DEC 2017
- Publication Date: pending
- Patentee: Nokia Bella Labs

[2] *Cross layer optimization in multimedia communications* 2008

- Inventors: A. Zanella, M. Zorzi, F. Maguolo, S. Merlin, N. Baldo, D. Siorpaes, D. Melpignano, I. Polato, R. Maguolo, S. Maguolo
- Number: PCT/12/347,852, United States Patent Application 20100165856
- Application Date: 2008-12-31
- Publication Date: 2010-07-01
- Patentee: STMicroelectronics S.p.A.
- url: https://www.google.com/patents/US20100165856

[3] *Link Adaptation In Wireless Networks* 2008

- Inventors: A. Zanella, M. Zorzi, F. Maguolo, S. Merlin, N. Baldo, D. Siorpaes, I. Polato, R. Maguolo, S. Maguolo
- Number: PCT/12/347,874 (2008), United States Patent Application 20100169723
- Application Date: 2008-12-31
- Publication Date: 2010-07-01
- Patentee: STMicroelectronics S.p.A.
- url: https://www.google.com/patents/US20100169723

[4] *Method for routing in a local mobile communication network* 2006

- Inventors: A. Zanella, M. Zorzi, F. Maguolo, E. Fasolo, S. Ruffino, P. Stupar
- Number: PCT/EP2006/010465. United States Patent Application 20100061352
- Application Date: 2006-10-31
- Publication Date: 2010-03-11
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