UNIVERSITÀ DEGLI STUDI DI PADOVA

Stefano Tomasin

curriculum vitae

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• Short Biography

Stefano Tomasin received the Ph.D. degree from the University of Padova, Italy, in 2003. During his studies he did internships with IBM Research (Switzerland) and Philips Research (Netherlands). He joined the University of Padova where he has been Assistant Professor (2005-2015), Associate Professor (2016-2022), and Full Professor (since 2022). He was visiting faculty at Qualcomm, San Diego (CA) in 2004, the Polytechnic University in Brooklyn (NY) in 2007 and the Mathematical and Algorithmic Sciences Laboratory of Huawei in Paris (France) in 2015. His current research interests include physical layer security, security of global navigation satellite systems, signal processing for wireless communications, synchronization, and scheduling of communication resources. He is a senior member of IEEE since 2011 (member since 1999) and a member of EURASIP since 2011. He is or has been an Editor of the IEEE Transactions on Vehicular Technologies (2011-2016), of the IEEE Transactions on Signal Processing (2017-2020), of the EURASIP Journal of Wireless Communications and Networking (since 2011) and of the IEEE Transactions on Information Forensics and Security (since 2020). He serves also as a Deputy Editor-in-Chief of the IEEE Transactions on Information Forensics and Security since January 2023.

• Education

Ph.D. degree (February 14, 2003)
Electrical and Telecommunications Engineering

Doctoral degree obtained from University of Padova, Italy. Thesis title: "Frequency domain equalization and channel estimation for broadband wireless communications". Supervisor: Prof. Nevio Benvenuto.

Laurea degree (July 6, 1999)
Telecommunication Engineering

Master-Level (5-year) university degree obtained summa cum laude from University of Padova, Italy. Thesis title: "Metodi di equalizzazione per sistemi OFDM" (Equalization methods for OFDM systems). Supervisor: Prof. Nevio Benvenuto.

• Qualifications

Italian Professor Qualification
April 5, 2017

Abilitazione scientifica nazionale for the position of Full Professor in Telecommunications (sector 09/F2).

Teaching4Learning@Unipd
Jan. 2017

Training course within the Teaching4Learning@Unipd project. The aims of the project are: to develop teaching skills for faculty in higher education, and to encourage the creation of Faculty Learning Communities (FLC) in order to share experiences of good teaching practices, and to promote teaching innovation in higher education.

Italian Professor Qualification
December 12, 2013

Abilitazione scientifica nazionale for the position of Associate Professor in Telecommunications (sector 09/F2).

Qualification for the Engineer Board
2nd session, year 2000

Qualification exam for the Italian Engineers' Board (*Esame di stato per l'abilitazione alla professione di ingegnere)*.

• Current Position

University of Padova, Italy
Since Aug. 1, 2022

Full Professor at the Department of Information Engineering (DEI), University of Padova.

• Past Positions

University of Padova, Italy
Jan. 15, 2016 - Jul 31, 2022

Associate Professor at the Department of Information Engineering (DEI), University of Padova.

University of Padova, Italy
Jan. 2005 – Jan. 2016

Assistant Professor at the Department of Information Engineering (DEI) of University of Padova.

Huawei Technologies, Boulogne-Billancourt France
Dec. 2014 – Dec. 2015

Team leader at the Mathematical and Algorithmic Sciences Laboratory, France Research Center of Huawei Technologies, working on technologies for 5G cellular systems.

Polytechnic University, Brooklyn, NY
Sept. 2007 – Dec. 2007

Visiting faculty, guest of Prof. Elza Erkip, doing research on cooperative networks and security in cooperative networks.

Qualcomm inc., San Diego, CA
June 2004 – Dec. 2004

Visiting faculty under the supervision of Dr. Roberto Padovani, doing research on multiuser detection for the uplink of cellular systems based on CDMA technology.

University of Padova, Italy
Jan. 2003 – Dec. 2004

Post-doc contractor under the supervision of Prof. Silvano Pupolin, within the project FIRB "PRIMO" (Reconfigurable Platforms for wideband wireless communications) Italian university ministry, doing research on multicarrier cellular systems.

Philips Research Lab., Eindhoven, The Netherlands Oct. 2001 – June 2002	Ph.D. student intern at Eindhoven (NL) under the supervision of Dr. Jean-Paul Linnartz, doing research on Doppler compensation for OFDM with application to mobile digital terrestrial television receivers.
IBM Zurich Research Lab., Zurich, Switzerland Oct. 1999 – Jan. 2000	Intern under the supervision of Dr. Evangelos Eleftheriou, working on performance evaluation of error control coding in magnetic recording systems.

• Language Skills

English	Certified B2 level. Extended leaves at workplaces where English was the official language (3 months in Zürich, 9 months in Eindhoven, 6 months in San Diego, 3 months in New York, and 1 year in Paris), frequent international contacts, and courses taught in English ensure full control of this language.
Italian	Mother language.

• Awards

Best Paper Awards

- Best paper award at the IEEE Wireless Communications and Networking Conference (WCNC), Glasgow, Scotland, UK, 2023.
- Best paper award at the International Conference on Ubiquitous and Future Networks (ICUFN 2023), Paris, France, July 2023.
- Best paper award at the International Conference on Ubiquitous and Future Networks (ICUFN 2018), Prague, Czech Republic, July 2018.
- Co-author of the best student paper award at the IEEE/ION Position Location and Navigation Symposium, Monterey, California, April 2018.
- Co-author of the best student paper award at the Int. Symp. Bioelectronics and Bioinformatics (ISBB2009), Melbourne, Australia, Dec. 2009.

Other Awards

- Recipient of financing by the Fondo di finanziamento per le attività base di ricerca (FFABR) in 2017.
- Exemplary Reviewer Award from IEEE Communications Letters, 2011.
- Reviewer appreciation award from the IEEE Transactions on Signal Processing, 2008.
- Carlo Offelli Award 2005: awarded best young researcher at the Department of Information Engineering, University of Padova.
- Regional Innovation Award 2004: awarded for the best doctoral thesis by the Veneto Region.
- Carlo Offelli Award 2003: nominated among the best five young researcher at the Department of Information Engineering, University of Padova.

• Editorial Activity

Guest Activity — **Editorial**

- **Guest Editor** of the Special issue on Antennas and Array Processing for Physical Layer Wireless Security, IEEE Open Journal on Antennas and Propagation, 2021. Lead guest editor: Yuan Ding (Heriot-Watt University, UK).
- **Guest Editor** of the Special issue on Intelligent Surfaces for 6G Cellular Networks: A Holistic View, Applied Science, 2021.
- **Guest Editor** of the Special issue on Information-Theoretic Security, Entropy, 2017.
- **Guest Editor** of the Special issue on Information-Theoretic Security II, Entropy, 2019.
- **Guest Editor** of the Special issue on Physical Layer Security Solutions for 5G-and-Beyond, EURASIP Journal on Wireless Communications and Networking, 2019.
- **Guest Editor** of the Special issue on Physical Layer Security and its Applications, Proceedings of IEEE, Oct. 2015.

Journal Activity — **Editorial**

- **Deputy Editor in Chief** of IEEE Transactions on Information Forensics and Security, since Jan. 2023.
- **Associate Editor** of IEEE Transactions on Information Forensics and Security, since Mar. 2020.
- **Associate Editor** of IEEE Transactions on Signal Processing, from Jan. 2017 to Jan. 2021.
- **Associate Editor** of EURASIP Journal of Wireless Communications and Networking, since 2011.
- **Associate Editor** of IEEE Transactions on Vehicular Technologies, from Nov. 2011 to Sept. 2017.
- **Editor** of the ISRN Communications and Networking Journal, from 2007 to 2012.
- **Reviewer** for various international Journals, including:
  - European Trans. on Telecommunications
  - IEEE Commun. Letters
  - IEEE Journal on Select Areas in Communications
  - IEEE Signal Processing Letters
  - IEEE Trans. on Communications
  - IEEE Trans. on Signal Processing
  - IEEE Trans. on Vehicular Technologies
  - IEEE Trans. on Wireless Communications
  - IEEE Trans. on Control Systems Technology
  - IEEE Trans. on Information Forensics and Security
  - ISRN Communications and Networking
  - Springer Wireless Networks
  - Elsevier Signal Processing

Conference Chair **TPC**

- Co-chair of the 4th Workshop on *Enabling Security, Trust, and Privacy in 6G Wireless Systems* at the 2025 IEEE International Conference on Communications (ICC)
- Co-chair of the 3rd Workshop on *Enabling Security, Trust, and Privacy in 6G Wireless Systems* at the 2024 IEEE Global Conference on Communications (GLOBECOM)
- Co-chair of the 2nd Workshop on *Enabling Security, Trust, and Privacy in 6G Wireless Systems* at the 2023 IEEE International Conference on Communications (ICC)
- Co-chair of the Workshop *Enabling Security, Trust, and Privacy in 6G Wireless Systems* at the 2022 IEEE Global Conference on Communications (GLOBECOM)
- Co-chair of the Workshop *Incorporating physical layer security in 6G security protocols* at the 2022 IEEE Future Networks World Forum (FNWF).
- Co-chair of the IEEE Vehicular Technology Conference 2022-Spring for the Track Emerging Technologies and 6G.
- Lead co-chair the Wireless Communications symposium of Global Communications Conference (GLOBECOM) 2021.
- Lead co-chair of the IEEE Vehicular Technology Conference 2021-Spring for the Track Emerging technologies, 5G and beyond.
- Mobility track Chair of the 11th IFIP International Conference on New Technologies, Mobility and Security (NTMS), June 2020, Paris, France.
- Organizer of the second Workshop on Communication Security (WCS) within the EUROCRYPT conference, Apr. 2017, Paris, France.
- Organizer of the IEEE Workshop on Wireless Physical Layer Security (WPLS) at the IEEE International Conference on Communications (ICC) June 2015, London, UK.
- Organizer of Workshop on Communication Security (WCS) within the ESCAPADE project, Sept. 2014, Ancona, Italy.
- Chair IEEE Vehicular Technology Conference 2008-Fall, Transmission Technology Track.

Conference Member **TPC**

- ACM Q2SWinet 2014.
- ChinaCom 2008.
- European Signal Processing Conference: 2024
- European Wireless (EW): 2018-2020.
- IEEE CNS Workshop on Physical-layer Methods for Wireless Security: 2016.
- IEEE Global Conference on Communication (GLOBECOM): 2025-2013, 2011, 2009, 2007.
- IEEE Global Conference on Signal and Information Processing (GLOBALSIP): 2018.
- IEEE GLOBECOM Workshop on Trusted Communications with Physical Layer Security: 2016, 2017.
- IEEE International Conference on Communication, Networks and Satellite (IEEE COMNETSAT): 2019, 2017-2016.
- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP): 2021.
- IEEE International Conference on Communications (ICC): 2021-2025, 2019-2014.
- IEEE International Symposium on Information Theory (ISIT): 2021, 2020.
- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC): 2021-2017.
- IEEE International Workshop on Networking Issues in Multimedia Entertainment (NIME): 2006, 2004.
- IEEE International Workshop on Privacy and Security for Information Systems (WPS): 2020
- IEEE SmartGridComm 2017, 2015, 2014.
- IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC): 20121, 2020.
- IEEE Vehicular Technology Conference (VTC): 2021, 2019-2018, 2006-Spring.
- IEEE WiComSec-Phy 2015 - Workshop on Wireless Communication Security at the Physical Layer (jointly with Mobiquitous'15).
- IEEE Wireless Communication and Networking Conference (WCNC): 2025-2014, 2012, 2009.
- International Conference on Advances in Computing and Communications (ACC2011).
- International Conference on Advances in Computing, Communications and Informatics: 2019.
- International Conference on Computing, Networking and Communications (ICNC): 2023.
- International Conference on Computing and Network Communications (CoCoNet): 2018.
- International Conference on Recent Advances in Signal Processing, Telecommunications & Computing (SigTelCom): 2020,2018.
- International Conference on Signal Processing and Communication (ICSC): 2019.
- International Conference on Wireless Communications and Signal Processing (WCSP): 2018.
- International Symposium on Wireless Communications Systems (ISWCS): 2024, 2014, 2013, 2010.
- IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC): 2024.
- European Conference on Networks and Communications & 6G Summit (EuCNC/6G Summit): 2024.

• Publicly Funded Projects

Project Title	Description
Centro Nazionale di Competenze GNSS *Fund: Agenzia Spaziale Italiana*	**Role: Design Responsible** (Jul. 2024 - Jun. 2026) Distributed research lab on GNSS services. The center, located at Telespazio's headquarters in Rome, will aim to create a laboratory that will use resources distributed throughout the country, at the headquarters of the various team members, to develop new capabilities, solutions, and technologies to address current and future challenges in the field of satellite navigation.
Navigation Using Machine lEaRning applied tO Signals of Opportunity (NUMEROSO) *Fund: ESA*	**Role: Participant** (Feb. 2024 - Jan. 2026) Project on the integration of Signals of Opportunity (SOOPs) with GNSS signals for navigation purposes, considering both terrestrial (such as 5G mobile or WiFi) and space-based (such as those transmitted by LEO satellites, or non-terrestrial networks) SOOPs. Link: `https://navisp.esa.int/project/details/258/show`
Innovative Security Paradigms for beyond 5G (ISP5G+) *Fund: EU*	**Role: Local project coordinator - WP leader** (Jan. 2023 - Nov. 2025) Project within the PNRR research program "PNRR MUR - M4C2 - SERICS - SEcurity and RIghts in the CyberSpace (SERICS)". The main contribution to the project topic is on physical layer authentication techniques.
SmaRt, AutOmated, and ReliaBle SecUrity Service PlaTform for 6G (ROBUST-6G) *Fund: EU*	**Role: Participant** (Jan. 2024-Jun. 2026) HORIZON-JU-SNS-2023-STREAM-B-01-0 project on security for 6G networks.
Physical layer security for trustworthy and resilient 6G systems (6G-PHYSEC) *Fund: EU*	**Role: Proposer and Action Vice Chair** (Sept. 2023 - Sept. 2027) European Cooperation in Science and Technology (COST) action on physical layer security. `https://6gphysec.org/`
Smart Radio Environments for the next generation of wireless network (SRE) *Fund: PNRR-EU*	**Role: Local project coordinator - WP leader** (Jan. 2023 - Dec. 2025) Project within the PNRR research program "RESearch and innovation on future Telecommunications systems and networks, to make Italy more smART" (RESTART). The project addresses new communication solutions with smart electromagnetic devices.
Cybersecurity for safe underwater acoustic communications (SAFE-UComm) *Fund: NATO*	**Role: Participant** (Jan. 2021 - Dec. 2023) Project (led by Prof. P. Casari) on security solutions for underwater acoustic communications.
Cubesat for Quantum and 5G communication (QUANGO) *Fund: EU Research and Innovation Act.*	**Role: Participant** (Jan. 2021 - Dec. 2023) Project (led by Prof. G. Vallone) on the design of a cube-sat for secure communications based on quantum physics and its integration with 5G networks.
Optical spatial division multiplexing in 5G front-hauling *Fund: University of Padova*	**Role: Collaborator** (Jan. 2021 - Dec. 2023) Project (led by Prof. M. Santagiustina) on the design of front-hauling solutions based on multi-mode fibers.

Position Authenticated Tachograph for OSNAMA Launch (PATROL)
Fund: European Global Navigation Satellite Systems Agency

Role: Collaborator (Jan. 2018 - Dec. 2019)
Project (led by Prof. N. Laurenti) on solutions for position authentication in tachograph systems.

Enhanced Space Navigation (ENSPACE)
Fund: European Global Navigation Satellite Systems Agency

Role: Collaborator (Nov. 2017 - Oct. 2019)
Project (led by Prof. N. Laurenti) on authentication techniques for advanced global navigation system receivers.

More Operative and Robust Extension to GNSS Open Service Signal Integrity Protection (MORE GOSSIP)
Fund: European Space Research and Technology Centre

Role: Collaborator (Dec, 2016 - May 2019)
Project (led by Prof. N. Laurenti) on techniques to make the global navigation system more protected against spoofing attack.

Enhancing communication security by cross-layer physical and data-link (PDX) techniques (ESCAPADE)
Fund: Fund for the investments on basic research (FIRB)

Role: Local coordinator (Mar. 2012 - Mar. 2015)
Project (led by Dr. M. Baldi, Polytechnic University of Marche) on physical layer security for wireless systems. The project has been one of the 99 selected for funding out of 2416 submitted (4% of acceptance).

Integrated Terrestrial And CAble – Receiver Design (ITACA-RD)
Fund: Swiss Commission for Technology and Innovation (CTI)

Role: Collaborator (June 2011 - June 2012)
Project (led by Prof. B. Rimoldi of the École Polytechnique Fédérale de Lausanne (EPFL)) on the development of an integrated DVB-T2 and DVB-C2 receiver.

Design and implementation of a novel control and communication architecture for cooperative operation of distributed harmonic and reactive compensators
Fund: University of Padova

Role: Collaborator (2009 - 2010)
Project (led by Prof. P. Tenti) on the control and communication architecture for future smart micro-grids.

DVB-T2 Advanced Software Platform (DASP)
Fund: Swiss Commission for Technology and Innovation (CTI)

Role: Collaborator (Feb. 2009 - Feb. 2010)
Project (led by Prof. B. Rimoldi of the École Polytechnique Fédérale de Lausanne (EPFL)) on a DVB-T2 advanced software platform for the synchronization of digital video broadcasting systems.

Network of Excellence in Wireless Communications (NEWCOM++)
Fund: FP7 Europe

Role: Collaborator (2006-2009)
Participation to the European network of excellence on wireless communications.

• Privately Funded Projects

Funding Entity	Description
ENEA (Italy)	**Role: Participant** (Lug. 2023 - Dec. 2024) Projects on quantum key distribution for power networks.
Huawei (Italy)	**Role: Co-Principal Investigator** (Apr. 2021 - Mar. 2022) Projects on channel estimation and scheduling for cellular systems with smart relays and intelligent reflective surfaces.
Fondazione Bruno Kessler (Italy)	**Role: Supervisor** (Oct. 2020 - Oct. 2023) Sponsoring a PhD scholarship on Machine learning for future generation cellular networks. The scholarship has been awarded to Alberto Rech, under my supervision.
Adant (Italy)	**Role: Project Leader** (Jan. 2020 - June 2020) Development of beam management algorithms for 5G-NR mmWave transmission for automotive applications
Huawei (China)	**Role: Project Leader** (Jan. 2017 - June 2018) Huawei Innovation Research Program (HIRP) Open project on CSI feedback design for cellular systems.
Huawei (Italy)	**Role: Project Leader** (Jan. 2017 - Dec. 2017) Two projects on beamforming and scheduling for mm-wave systems.
Institute for Information Industry (III) (Taiwan)	**Role: Project Leader** (Mar. 2013 - Dec. 2017) Project on demand-response techniques for smart micro grids with simulation test-bed.
Luce in Veneto (Italy)	**Role: Collaborator** (Sept. 2011 - Aug. 2012) Project on ICT for illumination. Funded by Consorzio Luce in Veneto within Regione Veneto funded research projects.
Fondazione Cariparo, Padova (Italy)	**Role: Project Leader** (Jan. 2012-Dec. 2014) Recipient of a fund for a three-year Ph.D. scholarship to study the optimization of smart micro grids.
Abilis Systems Sarl (Switzerland)	**Role: Project Leader** (2006-2009) Two research contracts (Feb. 2006-Feb. 2007 and Mar. 2008-Mar. 2009) on signal processing for digital video broadcasting. These contracts brought also to joint scientific publications and patents.
RAI Research Center (Italy)	**Role: Collaborator** (2007-2013) Research contracts for new standards on digital video broadcasting, with contribution to the standard activity, joint scientific publications and patents.

• Project Review Boards

Project Reviewer

- Expert Evaluator for UNA4CAREER (2021), a MSCA COFUND project aiming at the recruitment of post-doctoral researchers (`https://www.una4career.eu/`).

• Representation, Coordination, and Membership

Representation

- Representative of the University Padova within the Shareholder's Assembly of the National Inter-University Consortium for Telecommunications (CNIT), since Sept. 2019.
- Representative of the Research Unit of University Padova within the Scientific Council (*Consiglio Scientifico*) of the National, Inter-University Consortium for Telecommunications (CNIT), from Sept. 2016 to Sept. 2019.
- Representative of the Department of Information Engineering within the Perspective Student Promotion Commission (Commissione Orientamento) of the School of Engineering (U. of Padova), since 2013.
- Representative of the Department of Information Engineering within the Commission for Relation with the Social Partners since 2013.
- Member of the executive board of the School of Engineering (U. of Padova), from 2009 to 2011.
- Representative of the Department of Information Engineering within the Tutoring Commission (Commissione Tutorato) of the School of Engineering (U. of Padova), between 2013 and 2015, and from 2017 to 2020.

Coordination

- Vice-Chair of the COST action PARADIGM on physical layer security (since Sept. 2023).
- Coordinator of the Perspective Student Promotion Commission (Commissione Orientamento) of the School of Engineering, University of Padova, from 2013 to 2014, organizing activities within the support perspective students.
- Leader of a team of 8 engineers (all with PhD qualification) at the Mathematical and Algorithmic Sciences Laboratory, France Research Center of Huawei Technologies, working on technologies for 5G cellular systems during the sabbatical leave Dec. 2014-Dec 2015.

Membership

- Member of the EURASIP Technical Area Committee on Signal Processing for Communications and Networking since 2024 (`https://eurasip.org/technical-area-committees/`).
- Member of the IEEE Focus Group on Physical Layer Security (PLS) for Future Networks since 2021.
- Treasurer of the IEEE Int. Energy Conf. and Exhibition (ENERGYCON), 2012.
- Senior Member of the Institute of Electrical and Electronics Engineers (IEEE) since 2011 and member of IEEE since 1999.
- Member of the European Association for Signal Processing (EURASIP) since 2011.

• Teaching Experience

Adversarial Machine Learning
Master course - *Cybersecurity*
Academic Year: 2023-2024.
Hours: 48. Language: English.

Topics: Evasion and poisoning techniques against machine learning models.
Class with about 10 students.

Signals and Systems
Bachelor course - *Information Engineering*
Academic Year: 2022-2023.
Hours: 72. Language: English.

Topics: Basic course on signals and their transforms (including Fourier and Laplace transforms).
Class with about 30 students.

Visible-light and metasurfaces communications
Master course - *ICT for Internet and Multimedia*
Academic Years 2021-2022 and 2022-2023.
Hours: 24 (half course). Language: English.

Topics: Visible light (VL) channels and design of VL transceivers. Indoor and vehicular VL communications: protocols and performances. Wireless channels with reconfigurable metasurfaces: channel models, beamforming and channel estimation. Localization and radio mapping with metasurfaces.
Class with about 20 students.

Fondamenti di Telecomunicazioni (Communication Engineering Fundamentals)
Bachelor course - *Ing. Informatica (Comp. Science)*
Academic Years 2013-2014, then since 2016-2017 until now.
Hours: 72. Language: Italian.

Topics: principles of communication, transmission channels, analog and digital modulation principles, uniform and non uniform quantization.
In the academic year 2013-2014 he has been *Professore Aggregato* for this course.
Class with about 100 students.

5G Systems
Master course - *ICT for Internet and Multimedia*
Academic Years from 2017-2018 to 2021-2022, and from 2023-2024 until now.
Hours: 48. Language: English.

Topics: architecture of cellular communication systems, OFDM, synchronization for OFDM, peak to average power ratio reduction, channel estimation, MIMO systems, capacity of MIMO, MIMO spatial multiplexing, and space time coding.
Class with about 20 students.

5G/connectivity
Course Module within the 5G Academy Initiative by Capgemini and University of Naples, Italy, 2020
Hours: 10. Language: Italian.

Topics: architecture of a 5G networks. The OSI layers in 5G systems. Data rates and link layers. Network slicing. Examples of applications.
Class with about 20 students.

5G/edge technology
Course Module within the 5G Academy Initiative by Capgemini and University of Naples, Italy, 2021
Hours: 10. Language: Italian.

Topics: architecture of a 5G networks. The OSI layers in 5G systems. Data rates and link layers. Network slicing. Examples of applications.
Class with about 20 students.

Analisi dei Dati (Data Analysis)
Bachelor course - *Ing. Informazione (Information Eng.)*
Academic Year 2015-2016.
Hours: 72. Language: Italian.

Topics: probability theory, random variables and vectors, stochastic processes.
Class with about 100 students.

Advanced Communication Techniques
Master course - *Ing. Telecomunicazioni (Telecommunic. Eng.)*
Academic Years 2011-2012, 2012-2013.
Hours: 48. Language: English.

Topics: OFDM, synchronization for OFDM, peak to average power ratio reduction, channel estimation, MIMO systems, capacity of MIMO, MIMO spatial multiplexing, and space time coding.
In the academic year 2011-2012 and 2012-2013, he has been *Professore Aggregato* for this course.
Class with about 20 students.

Fondamenti di Comunicazioni (Communication Engineering Fundamentals)
Bachelor course - *Ing. Informatica (Computer Science)*
Academic Years 2005-2006, 2006-2007, 2007-2008, 2008-2009.
Hours: 54. Language: Italian.

Topics: principles of communication, transmission channels, analog and digital modulation principles, and uniform and non uniform quantization.
In the academic years 2006-2007 and 2007-2008 he has been *Professore Aggregato* for this course.
Class with about 100 students.

Fondamenti di Comunicazioni (Communication Engineering Fundamentals)
Bachelor course - *Ing. dell'Informazione*
Academic Years 2008-2009.
Hours: 72. Language: Italian.

Topics: principles of communication, transmission channels, analog and digital modulation principles, uniform and non uniform quantization, and basics of information theory.
In the academic year 2008-2009 he has been *Professore Aggregato* for this course.
Class with about 100 students.

Sistemi di Telecomunicazioni (Telecommunication Systems)
Master course - *Ing. Elettrica (Electrical Eng.)*
Academic Years 2008-2009, 2009-2010.
Hours: 48. Language: Italian.

Topics: principles of communication, transmission channels, analog modulation (SSB, DSB, FM), digital modulation, principles with signal and detection theory, examples (QAM, PSK, orthogonal, PAM), uniform and non uniform quantization, and powerline communications.
Class with less than 10 students.

Telecomunicazioni (Communication Systems)
Bachelor course - *Ing. Informazione (Information Eng.)*
Academic Years 2014-2015.
Hours: 72. Language: Italian.

Topics: principles of communications; digital modulation systems; quantization; elements of information theory and Shannon theorems; channel coding; queuing theory; elements of network layer techniques.
In the academic year 20143-2015 he has been *Professore Aggregato* for this course.
Class with about 100 students.

Key Technologies for Next Generation Digital Video Broadcasting Standard
Ph.D. course within the Newcom++ network of excellence
Year: 2009.
Hours: 20. Language: English.

Topics: introduction to DVB-T2, description of key technologies behind DVB-T2, including the LDPC/BCH forward error correction scheme, transmission scheduling, orthogonal frequency-division multiplexing with huge block size, multiple-antenna transmissions, and synchronization techniques, and comparison with the current DVB-T standard.
Class with less than 10 students.

Broadband Wireless Communications
Ph.D. course within the NEWCOM (European network) Doctoral School in Wireless Communications
Year: 2006.
Hours: 20. Language: English.

Topics: communications over broadband channels, principles and design of multicarrier systems, synchronization, equalization, impairments, and implementation architectures.
Class with less than 10 students.

Multicarrier Systems
Ph.D. course
Year: 2005.
Hours: 20. Language: English.

Topics: principles and design of multicarrier systems, synchronization, equalization, impairments, and implementation architectures.
Class with less than 10 students.

• Activity Within Doctoral Schools

Doctoral Student Supervisions

- **Mr. Luca Bonaventura**, started in 2024 at University of Padova, Italy, working on physical layer security for next-generation cellular systems.
- **Mr. Mattia Piana**, started in 2024 at University of Padova, Italy, working on authnetication for next-generation cellular systems.
- **Mr. Matteo Varotto**, started in 2024 at University of Padova, Italy, working on anti-jamming solutions in communication networks.
- **Mr. Yaser Dorrazehi**, started in 2023 at University of Padova, Italy, working on reflective intelligent surfaces for next generation cellular networks.
- **Mr. Alberto Rech**, started in 2019 at University of Padova, Italy, working on resource allocation techniques using machine learning.
- **Dr. Francesco Formaggio**, Ph.D. in 2021 at University of Padova, Italy, with a thesis entitled "Position Verification and Signal Authentication for Mobile Wireless Devices".
- **Dr. Alessandro Brighente**, Ph.D. in 2021 at University of Padova, Italy, with a thesis entitled "Physical Layer Techniques for mm-Wave Communications".
- **Dr. Ermanna Conte**, Ph.D. in 2010 at University of Padova, Italy, with a thesis entitled "Multiuser MIMO downlink systems with limited feedback and remote sensing of vital signs".
- **Dr. Sintayehu Dehnie**, Ph.D. in 2009 at NYU Polytechnic University, NY, with a thesis entitled "Detection and mitigation of misbehavior in cooperative wireless communications".

Teaching Councils and Defense Boards

- Scientific Evaluation Committee (SEC) member for the selection fo Early-Stage Researchers for PhD program within the Horizon 2020 - Marie Skłodowska-Curie Action COFUND "UNIPhD - Eight century legacy of multidisciplinary research and training for the next-generation talents" (2022-2023).
- Examiner of PhD Thesis at Queen Mary University of London, UK (2021).
- Opponent in the PhD Defense at KTH, Stockholm (Sweeden) (2021).
- Member of the Teaching Council (*Collegio Docenti*) of the Doctoral School on Information Engineering, (*Corso di dottorato in Ingegneria dell'informazione*), University of Padova, Italy: from the 23rd to the 26th cycle (2008-2011), and from the 30th to the 34th cycle (2015-2019).
- Member of the PhD Defense Board of the Doctoral School on Information Engineering, (*Corso di dottorato in Ingegneria dell'informazione*), University of Padova, Italy, 2019-2023.
- Member of the PhD Defense Board of the Doctoral School on Information Technology, Politecnico di Milano, Italy, 2019.
- Member of the PhD Defense Board of the Doctoral School on Information Technology, Politecnico di Milano, Italy, 2019.
- Reviewer of Ph.D. dissertation for the PhD Program in Information Technology of the Politecnico di Milano, Italy, 2019.
- Reviewer of Ph.D. dissertation for Anna Chennai University, Channai, India, 2018-2021.

• Thesis Supervision

Undergraduate and Graduate Student Supervision

- Supervising both BS and MSc thesis activity since 2006.

• Bibliometric Indices

Google scholar: h-index 35 (total citations 6508)
Scopus: h-index 26 (total citations 3645)

• Publications

Entries in boldface refer to invited papers.

Accepted For Publication

[1] S. B. Rowhani, A. V. Guglielmi, D. Scazzoli, M. Magarini, and S. Tomasin, "Challenge-response PLA with amplify and forward relay: Design and experimental validation," accepted for presentation at European Signal Processing Conference (EUSIPCO 2025), 2025.

[2] S. Tomasin, F. Ardizzon, P. Casari, and R. Diamant, "Channel-based key generation for secure underwater acoustic communications," accepted for publication on IEEE Trans. Wireless Commun., 2025.

[3] B. C. Vela, S. Vela, and S. Tomasin, "Physical layer authentication with colored RIS in visible light communications," accepted for presentation at Personal Indoor Mobile Radio Communication conference (PIMRC 2025), 2025.

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[4] F. Ardizzon, L. Crosara, S. Tomasin, and N. Laurenti, "Enhancing spreading code authentication in GNSS: A statistical multi-signal approach," *IEEE Jour. of Indoor and Seamless Positioning and Navigation*, pp. 1–14, 2025.

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