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"PNRR MUR - M4C2 - SERICS - SEcurity and RIghts in the CyberSpace (SERICS)"

SPOKE N. 4

Research proposal

Topic: (b) Security of 5G

ISP5G+ Innovative Security Paradigms for beyond 5G

- Name of the PIs' host institution for the project: **University of Palermo**
- Name of the Principal Investigators (PIs): **PI Ph.D. Domenico Garlisi – Co-PI Prof. Stefania Bartoletti**
- Proposal duration in months: **18 Months**

- Name and qualification of the Principal Investigator (PI)
- Name and qualification of the co- Principal Investigator (PI)
- Name and qualification of the components the research team

ROLE IN THE PROJECT	NAME	SURNAME	INSTITUTION/ DEPARTMENT	QUALIFICATION	YOUNG (under 40 al 31.12.2023)	F/M
Principal Investigator (PI)	Domenico	Garlisi	University of Palermo (UNIPA)	Ricercatore a tempo determinato di tipo b)	YES	M
co-Principal Investigator (co-PI)	Stefania	Bartoletti	Università degli Studi di Roma Tor Vergata (UNIRM2)	Professore Associato	YES	F
Component	Francesco	Gringoli	Università degli Studi di Brescia (UNIBS)	Professore Ordinario		M
Component	Renato	Lo Cigno	Università degli Studi di Brescia (UNIBS)	Professore Ordinario		M
Component	Luigi	Colalongo	Università degli Studi di Brescia (UNIBS)	Professore Ordinario		M
Component	Anna	Richelli	Università degli Studi di Brescia (UNIBS)	Professore Associato		F
Component	Marina	Zanella	Università degli Studi di Brescia (UNIBS)	Professore Associato		F
Component	Luca	Giuzzi	Università degli Studi di Brescia (UNIBS)	Professore Associato		M
Component	Federico	Cerutti	Università degli Studi di Brescia (UNIBS)	Professore Associato		M
Component	Ilenia	Tinnirello	Università degli Studi di Palermo (UNIPA)	Professore Ordinario		F
Component	Giovanni	Garbo	Università degli Studi di Palermo (UNIPA)	Professore Ordinario		M
Component	Costantino	Giaconia	Università degli Studi di Palermo (UNIPA)	Professore Associato		M
Component	Giovanni	Falcone	Università degli Studi di Palermo (UNIPA)	Professore Associato		M
Component	Stefano	Mangione	Università degli Studi di Palermo (UNIPA)	Ricercatore		M
Component	Stefano	Tomasin	Università degli Studi di Padova (UNIPD)	Professore Ordinario		M

Component	Andrea	Zanella	Università degli Studi di Padova (UNIPD)	Professore Ordinario		M
Component	Simone	Milani	Università degli Studi di Padova (UNIPD)	Professore Associato		M
Component	Federica	Battisti	Università degli Studi di Padova (UNIPD)	Professore Associato		F
Component	Nicola	Laurenti	Università degli Studi di Padova (UNIPD)	Professore Associato		M
Component	Roberto	Corvaja	Università degli Studi di Padova (UNIPD)	Ricercatore		M
Component	Leonardo	Badia	Università degli Studi di Padova (UNIPD)	Professore Associato		M
Component	Cesare	Roseti	Università degli Studi di Roma Tor Vergata (UNIRM2)	Professore Associato		M
Component	Giuseppe	Bianchi	Università degli Studi di Roma Tor Vergata (UNIRM2)	Professore Ordinario		M
Component	Giacomo	Verticale	Politecnico di Milano (POLIMI)	Professore Associato		M
Component	Guido	Maier	Politecnico di Milano (POLIMI)	Professore Associato		M
Component	Danilo	Ardagna	Politecnico di Milano (POLIMI)	Professore Associato		M
Component	Sebastian	Troia	Politecnico di Milano (POLIMI)	Ricercatore a tempo determinato di tipo a)	YES	M
Component	Walter	Tiberti	Università degli Studi dell'Aquila (UNIVAQ)	Ricercatore a tempo determinato di tipo a)	YES	M
Component	Dajana	Cassioli	Università degli Studi dell'Aquila (UNIVAQ)	Professore Associato		F
Component	Fortunato	Santucci	Università degli Studi dell'Aquila (UNIVAQ)	Professore Ordinario		M
Component	Fabio	Graziosi	Università degli Studi dell'Aquila (UNIVAQ)	Professore Ordinario		M
Component	Norberto	Gavioli	Università degli Studi dell'Aquila (UNIVAQ)	Professore Associato		M
Component	Gennaro	Boggia	Politecnico di Bari (POLIBA)	Professore Ordinario		M
Component	Alfredo	Grieco	Politecnico di Bari (POLIBA)	Professore Ordinario		M

Component	Giuseppe	Piro	Politecnico di Bari (POLIBA)	Professore Associato	YES	M
Component	Domenico	Striccoli	Politecnico di Bari (POLIBA)	Ricercatore		M
Component	Alessio	Fascista	Politecnico di Bari (POLIBA)	Ricercatore a tempo determinato (RTT)	YES	M

ABSTRACT

The evolution of 5G and the development of 6G networks demand a strategic approach to security challenges. ISP5G+ aims to address these challenges comprehensively, and in particular to: i) develop solutions aimed at protecting the mobile networks against security threats at the physical level, possibly adopting innovative components such as smart surfaces; ii) integrate mechanisms for safeguarding the network infrastructure as a whole, especially in emerging scenarios such as decentralized and distributed ones; and iii) implement tools for monitoring and ensuring the security of mobile networks in general, which, due to the heterogeneity of the involved applications, services, and devices, require specific and targeted approaches. Focusing on 5G security aspects, these ambitious objectives will effectively complement the research endeavors of the PE SERICS project.

For practical field testing, aligned with the cascade funding requirements, dedicated demonstrators using Software-Defined Radio platforms, preferably open-source, will be employed. Emulating both radio and infrastructure components of the mobile network will validate the proposed solutions, advancing the project to a technology readiness level 3.

The ISP5G+ project will be led by a consortium of 5G security experts from seven Italian universities leveraging collective knowledge, existing resources, and new equipment, with over 47% of the budget allocated to the Southern regions. The collaboration includes recruiting three researchers under fixed-term contracts (type A). The ISP5G+ initiative is committed to open science practices, emphasizing transparency and collaboration within the consortium and externally. Results will be widely disseminated through open-access journals, and data management practices will adhere to FAIR principles, ensuring efficient and equitable data use.

RESEARCH PROPOSAL

Section a. State-of-the-art and objectives
Cellular networks beyond 5G systems are evolving by integrating promising and heterogeneous technologies at the physical layer, as well as highly distributed computing architectures. These innovations are creating new security and privacy threats, which are weakening the effectiveness of conventional approaches to security [Europol] and require to be properly addressed with new strategies.

Physical layer. Reflective intelligent surfaces (RISs) are very promising for improving the efficiency of wireless communications, by pointing the transmission power towards the intended receivers and by mitigating signal blockage in NLOS links [ris21]. RISs are also considered as key enablers for accurate sensing of the environment thanks to the extreme beam steering they allow [ris23]. These properties are relevant in several applications, but they also represent important privacy threats, which have not been properly addressed yet [anti22]. RISs also enable the control of the electromagnetic environment introducing a new element for more effective physical layer authentication (based on channel features as fingerprint) [Tom22]. Still, how to exploit at best the controllability of the channel (in uplink/downlink, using also coding in the time dimension, how to cope with channel variations, how to use new hybrid surfaces) is yet to be explored. Other physical layer innovations include mechanisms (e.g. encrypting SUPI, per-user scrambling, etc.) explicitly designed for mitigating the risks of users tracking [Kot21], or IMSI catching [Pal21]. Despite these mechanisms make sniffing of 5G control channels much more difficult than in 4G systems, it has been demonstrated that sniffing is still possible [Lud23]. This also allows developing jamming techniques in a more energy-efficient way [Ngu14] [Lic16] [Arj20]. In the project, we address the problem of reducing the sniffing complexity, detecting the presence of jammers and designing modulation-based or coding-based solutions for mitigating these sniffing/jamming attacks.

Edge computing. While Multi-Access Edge Computing (MEC) provides solutions to fast, low-latency and efficient processing, providing security to data and computation in decentralised scenarios represents a complex task [Nencioni2023]. In this context, a promising new paradigm is O-RAN, an initiative for defining open, intelligent, virtualized and fully interoperable RAN with security as a central element [ORAN]. However, securing an O-RAN implementation from malicious actors is still a non-trivial task [Tiberti2022].

Heterogeneous RAN and infrastructure sharing. Non-Terrestrial Networks (NTN) and aerial networks represent a key element in beyond-5G networks [Rinaldi2020, Azari2022]. Providing security in this non-conventional scenario is complicated by the heterogeneity of the components involved (e.g., satellites, ground stations, drones, etc.) and the intrinsic issues typical of these networks, such as high latency and high error rate. In general, in NTN, traditional security solutions are not deemed as effective as in terrestrial networks [Ahmad2022]. Moreover, another important trend in the RAN evolution is the coexistence of multiple tenants, for which network segmentation is fundamental to protect the security of applications and devices [IEC 27001, IEC 62443]. The creation, lifecycle management, and provisioning of the resources for network segments requires both design-time and real-time models [Sedghani2021] and switches capable of separating tenants even when the switches themselves are reprogrammed [Stoyanov2020].

Law interception tools. The highly distributed architecture of the 5G network implies the need to capture traffic from multiple points in the network and to deal with ad-hoc 5G protocols, such as NGAP [3gpp38413], NAS [3gpp38413], and PFCP [3gpp29244], as well as extensive usage of instant messaging and VoPi services with end-to-end encryption. Lawful Interception (LI) architecture, tools, and methodologies need to be carefully designed for 5G. While some tools able to classify encrypted traffic [Ace20, Li24] [Zhao24] or support inspection-friendly capabilities [Ung22, Kim21, Kim21-2] have been already proposed in the current state of the art, it is still important to explore their deep and effective applicability to future LI architectures and protocols [arkime]. Starting from these premises, the project will conceive and investigate advanced methods and technologies that enable efficient and effective LI mechanisms in the evolving 5G landscape, also in decentralized settings, and in the presence of high traffic loads.

In such a context, the main goal of the ISP5G+ project is analyzing potential threats and proposing innovative security paradigms for future cellular systems at different levels, namely at physical, edge and protocol/traffic levels. As better described in the methodology section, the project considers the following specific objectives, respectively addressed in work packages (WP) 1, 2 and 3.

Ob1: Analysis and demonstration of physical layer threats and innovative solutions, taking into account the impact of RISs for improved environmental sensing and new authentication opportunities, as well as innovative energy-efficient sniffing and jamming tools.

Ob 2: Integration of security mechanisms into the edges and radio access segments, dealing with the new attack perimeters of extremely distributed computing platforms, non-terrestrial networks and aerial networks, and infrastructure sharing.

Ob 3: Protocol-level and traffic analysis to aid Law-Enforcement Authorities, dealing with collection of traffic data from a multiplicity of vantage points, 5G specific protocol parsing and encrypted traffic analysis.

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Section b. Methodology

The ISP5G+ project is structured into 3 WPs, each designed to address specific challenges and objectives presented before. The project brings together a consortium of 5G security experts from 7 Italian universities. Specifically, the research team comprises 38 researchers from the following universities: Università degli Studi di Palermo (UNIPA); Università degli Studi di Roma Tor Vergata (UNIRM2); Università degli Studi di Brescia (UNIBS); Università degli Studi di Padova (UNIPD); Politecnico di Milano (POLIMI); Università degli Studi dell'Aquila (UNIVAQ) e Politecnico di Bari (POLIBA). Each university contributes to the project activities according to the descriptions reported in the subsequent sections. We delve into the specifics of each WP, detailing the tasks, objectives, and the contributions of each participating institution. The project's methodology is outlined in detail for each WP presented in the following tables.

Work Package n. 1	Start: M1	End: M18
Work package Title: Physical Layer threats and solutions towards 6G		
Involved partners: UNIPA(Lead), UNIBS, UNIPD		
Objectives This work package analyses the vulnerabilities of the current wireless network's physical layer and proposes innovative protection techniques that will be essential for the evolution of future 6G systems. Among the objectives of the work package are the development of techniques capable of manipulating signals directly at the physical layer and using them, in conjunction with reflective surfaces, both to authenticate user devices, overcoming the limitations of current cryptographic algorithms, and to enhance the privacy of users themselves, making it impossible for unauthorised nodes to use signals for sensing purposes. Another objective of the work package is to design effective sniffing and jamming tools for beyond 5G systems and analysing solutions for mitigating the risks of these attacks..		
Task 1.1 (UNIBS) – Restoring privacy with physical-layer techniques This task focuses on designing innovative privacy-preserving techniques aimed at ensuring that unauthorised receivers cannot opportunistically use wireless signals propagating in smart-environments to perform high accuracy sensing. To this end, the developed techniques will obfuscate wireless transmissions by coordinating signal generation at transmitters with the configuration of the smart-environment, i.e., by		

properly controlling the available reflective intelligent surfaces. Only legitimate receivers will be able to revert the obfuscation and perform sensing, with an accuracy that can be configured by the involved, under-tracking users that decide how much information should be transferred to sensing receivers. The task will measure the level of privacy-protection that can be achieved by the developed obfuscation framework and its effects on communication performance.

Task 1.2 (UNIPD) – Threats and solutions for physical layer authentication

This task aims at investigating new physical-layer authentication techniques based on PHY signals, exploiting the controllability of the environment provided by intelligent reflective surfaces. In particular we aim at investigating the use of time (coding) for authentication either at the gNB or at the UE, and to understand the impact on security of the number of antennas of the attacker and its knowledge of the channel propagation with respect to the legitimate entities. Moreover, we will investigate the effects of channel variations on authentication to design techniques to trigger channel estimation to refresh the information on the channel when needed, in particular when using reflective surfaces. Moreover, integration of several inputs from sensors (WiFi and video) will be investigated to improve authentication and machine-learning approaches will be developed for data fusion and authentication (seen as a one-class classification problem).

Task 1.3 (UNIPA) – Threats and solutions for physical layer jamming and sniffing

This task focuses on establishing countermeasures against jamming and sniffing attacks, leveraging data from the physical layer. The primary activity is to study the effects of jamming signals on various channels, particularly those with and without the pilot reference signal. We will study how these signals impact different channel types and specifically examine their effects on channels with varying modulations and the presence or absence of pilot reference signals. This study will include an examination of how jamming signals can disrupt communication relative to the energy inserted. The second activity of the task is related to the study of the effects of jamming in conjunction with sniffing techniques, with a primary focus on developing a reliable real-time 5G sniffer, whose output can be exploited for improving the jamming attacks. We also plan to assess countermeasures (such as randomization of pilot signals, innovative modulations for training, etc.) for mitigating these attacks and localization privacy attacks..

Task 1.4 (UNIPA, UNIBS, UNIPD) – Integration and demonstration of selected use cases

This task involves the integration of some of the solutions developed in Tasks 1.1, 1.2 and 1.3 for building a demonstration of physical layer threats and potential countermeasures.

Work Package n. 2	**Start:** M1	**End:** M18
Work package Title: Security in Decentralized 5G Scenarios		
Involved partners: UNIVAQ (Lead), POLIMI		
Objectives. The goal of this work package is to tackle 5G and beyond security challenges and issues in decentralised and unconventional scenarios, including (and not limited to) Multi-access Edge Computing (MEC) environments, terrestrial/non-terrestrial 5G RANs, cloud computing, decentralised IoT networks and satellite-based communications. This goal will be achieved by the development of novel security mechanisms to enhance confidentiality, availability, integrity and privacy, with particular focus on their impact on the performance footprint and on the resources needed to fulfill the security and performance requirements of applications and to contrast malicious actors attempting to disable or disrupt the network.		
Task 2.1 (UNIVAQ) Security for edge systems This task is related to the improvement of the current status of (multi-access) edge computing (MEC) via the proposal of new techniques, mechanisms and tools to enhance security and trustability of the MEC landscape. In particular, the activities will focus on providing confidentiality, authentication, integrity, availability and AI/ML-supported intrusion detection and mitigation capabilities in 5G and 5G+ terrestrial and non-terrestrial scenarios (e.g., as in space-based and aerial networks). The activities in this task comprehend a) identify the current challenges in EC/MEC security in both terrestrial and non-terrestrial scenarios; b) define new paradigms and develop mechanisms and/or tools to secure the MEC ecosystem in 5G and 5G+ RANs without impacting performance and flexibility and c) Validation and performance evaluation in simulated and hardware-in-the-loop environments.		
Task 2.2 (POLIMI) Performance models and orchestration This task will develop performance models of innovative security mechanisms for 5G MEC and cloud continuum scenarios. The activities comprehend a) the development of models for network segmentation techniques and privacy-preserving computation algorithms; b) the development of a tool that identifies the		

resources necessary to provide a given security level target to a tenant given the application workloads and demands c) the development of models of attacks to tenant isolation and algorithms to identify the resources required to mitigate those attacks.

Task 2.3 – (UNIVAQ, POLIMI) Integration and demonstration of selected use cases
This task will define a system architecture capable of securing the MEC platforms, their orchestration, and the allocation of necessary resources while providing privacy-computing computations and resilience against volumetric (e.g., DDoS) attacks and network disruptions. The final architecture will be tested and validated against representative use-cases.

Work Package n. 3	Start: M1	End: M18

Work package Title: 5G Security Monitoring and Lawful Interception

Involved partners: UNIRM2 (lead), PoliBA

Objectives This work package strategically tackles 5G security by integrating mechanisms for both traffic monitoring and tracking, as well as law enforcement. In particular, it will involve the development of specialized protocol parsers, adapters for 5G interfaces, and high-performance features to enable real-time traffic monitoring, specifically designed for 5G protocols. Advanced traffic monitoring algorithms will enhance the accuracy and effectiveness of the monitoring process. Moreover, the work package aims to pioneer innovative and efficient approaches for 5G lawful interception, ensuring strict compliance with legal requirements and privacy regulations, especially in decentralized settings. The scope of this activity reflects a commitment to addressing the unique challenges posed by 5G networks and underscores the importance of balancing security measures with legal and privacy considerations.

Task 3.1 Protocol Parsing and Traffic Monitoring for 5G Security (UNIRM2)
This task is dedicated to advancing 5G traffic monitoring through specialized protocol parsing and algorithm development. The objectives encompass a thorough analysis of existing tools, paving the way for identifying gaps and opportunities. The team will then develop new, integrated software tools specifically tailored for NGAP (Next-Generation Application Protocol) and NAS (Non-Access Stratum) protocols, thus addressing the unique characteristics of 5G networks. The project also includes the development of innovative algorithms capable of performing anomaly detection and enabling tracking for real-time analysis of 5G traffic. A key aspect of this task is the implementation of a monitoring tool that captures data directly from the network interface, ensuring high performance to cope with the demands of ultra-high data rates in 5G networks.

Task 3.2 Design of analytic tools for Law Enforcement (PoliBA)
This task is in charge of conceiving and investigating advanced methods and technologies that enable efficient and effective LI mechanisms in the evolving 5G landscape, also in decentralized settings, and in the presence of high traffic loads. As a first step, it will define a new lawful interception architecture for 5G and Beyond communication systems, able to intercept data from both high-speed core and edge networks, while successfully coping with the presence of emerging technologies (i.e., MEC and network slices) and using advanced techniques at both data and control planes. Approaches for processing data collection from a multiplicity of vantage points, hence involving de-duplication, correlation, fusion, etc, will be explored, while identifying limits of the current 3GPP architecture and propose possible extensions to be considered in future standardization activities. The considered lawful interception architecture will be equipped with effective tools and methodologies for the analysis of encrypted traffic. Specifically, traffic classification techniques (based on advanced Deep Learning algorithms) and emerging inspection-friendly algorithms (like key-escrow schemes) will be studied to aid Law Enforcement Authorities in mining data and extracting behavioral information from intercepted traffic.

Note that the nature of this research activity renders the gender dimension irrelevant, including experimental endeavors.

Section c. Available instrumentations and resources

The collaborative efforts of the partner institutions in the ISP5G+ project not only bring a wealth of expertise but also a strategic array of resources, ranging from cutting-edge software-defined radios and network simulation tools to state-of-the-art high-performance computing systems and advanced beyond-5G testbeds. This collective expertise and infrastructure ensure a comprehensive and well-supported approach to achieving the ambitious research objectives of the project. Indeed, over the years, each partner has demonstrated a wealth of knowledge and hands-on experience in the domains of 5G security at national and international level. Research activities will be thus carried out in a dynamic environment where theoretical knowledge is complemented by real-world experimentation.

In a significant stride towards technological advancement, the project's utilization of advanced instrumentation and the development of innovative testbeds (e.g., for experimental activities in WP1 and WP2) are poised to elevate ISP5G+ to a Technology Readiness Level (TRL) of 3. This milestone underscores the project's commitment to pushing the boundaries of technological innovation, bringing theoretical concepts to practical implementation. The research results and experimental outcomes will be disseminated following the principles of "Open Science" and "FAIR Data Management", i.e. ensuring accessibility, reproducibility, and the highest standards of data management throughout the project's lifecycle.

The structured budgetary allocation for ISP5G+ covers personnel costs for both existing and new staff, including fixed-term researchers (type A), as well as the acquisition of new equipment. The planned budget aligns with the project's multifaceted requirements. Three RTDAs will be recruited at UNIPA, UNIRM2, and UNIBS, respectively, adhering to gender inclusivity standards with a **40% target for female researchers**. Furthermore, recognizing the regional impact, **47% of the resources are earmarked for the Southern regions** in the budget proposal.

In the following, we detail the main infrastructures available, presenting a partner-by-partner breakdown, and expound upon the prospective new equipment to be acquired during the project.

UNIPA: The Telecommunications Laboratory at UNIPA is well-equipped with a testbed hosting an array of eight USRP Software-Defined-Radio platforms. These platforms, from the X410, N310, and B200 families by National Instruments, provide the versatility and power required for a range of complex telecommunications experiments and studies. It also has a spectrum analyzer and several embedded system with commercial wireless network cards. Recently the wireless testbed is developing and testing Beyond-5G network solutions at radio and core levels, exploiting the capabilities of softwarized access/core network technology. The testbed setup 3 gNodeB (gNB), which are responsible for the radio attachment between User Equipment (UE) and the Core network's interfaces. 4 5G smartphone devices are present on testbed. The complete ecosystem will be designed to integrate, customize, and enhance the latest Open Radio Access Network (O-RAN) hardware/software technologies. In addition to these platforms, the lab also houses a dedicated server for hosting the core network (PowerEdge R640 Server). This server can handle high volumes of data and complex computations, making it an invaluable resource for the project. It will enable the team to simulate and test network behaviors, assess the impact of different variables on network performance, and develop strategies for improving network security and resilience. These platforms are fully programmable and can be configured to emulate different wireless network environments, making them ideal for the research activities proposed under WP1. This equipment are housed in the Telecommunication Laboratory located within the Engineering Department of the University of Palermo. This is the location where the University of Palermo will recruit its RTDA.
Prospective New Equipment: Currently, the laboratory does not possess Reconfigurable Intelligent Surface (RIS) hardware. However, we recognize the potential value of this technology for the ISP5G+ project, particularly in relation to the study of smart surfaces and their impact on physical-level. Therefore, we are considering allocating a portion of the project budget to equip the testbed with RIS hardware. This will further enhance our capabilities and ensure that we have the necessary resources to execute the project effectively.

UNIRM2: The telecommunication group at UNIRM2 boasts a state-of-the-art 5G laboratory, equipped with cutting-edge software and hardware tools to facilitate advanced research and development in the field of telecommunications. The lab features Software Defined Radios (SDRs) of three topologies, namely B210,

X310, and X410, providing a versatile platform for experimentation. Additionally, a dedicated server for 5G core is available to support the ISP5G+ simulations and experimentation activities This infrastructure serves as a robust foundation for exploring various aspects of 5G technology and over the several activities of ISP5G+.

UNIVAQ: The telecommunication group at UNIVAQ has a variety of laboratory equipment to support the ISP5G+ project- Dedicated servers running virtualized RAN environments, SDR, SDN and FPGA platforms, IoT and WSN nodes and bench equipment to perform measurements. *Prospective New Equipment:* Additional equipment will be acquired to enhance the UNIVAQ's ability to setup MEC scenarios on which to simulate blue and red teaming operations.

UNIBS: The telecommunication group at UNIBS has established an advanced wireless networking laboratory in the last few years. This facility is equipped with a variety of tools, including several Software Defined Radios, ranging from Ettus B210 to Ettus N300/X310; reconfigurable FPGA development boards by Xilinx featuring radio front-ends with up to four channels and 100MHz of bandwidth; reconfigurable active/passive elements that can be synchronously controlled with the SDR; and powerful servers capable of running both the Radio Access Network (RAN) and the core network of a beyond 5G mobile network emulated in the laboratory.

UNIPD: The telecommunication group at UNIPD is building a new laboratory for wireless and cellular communication. At the moment we already have several Adalm PLUTO board and we are planning to buy a OAIBOX implementing an open core network and gNB of a 5G system to be used to experiment new solutions, including those operating at the physical layer.

PoliMI The laboratory of the telecommunication and of the high performance computing groups at POLIMI is equipped with high-performance compute servers (Dell Poweredge) with NVIDIA GPUs and SmartNICs with speeds up to 100 Gbit/s. We are also acquiring programmable NICs with Xilinx FPGAs and NVIDIA Bluefield Data Processing Units. We have a 5G emulation testbed and two Openflow switches for software defined networking, and several resource-constrained CPEs. We also have IoT devices supporting NB-IoT, Cat-M, as well as LoRaWAN. *Prospective New Equipment:* In the context of ISP5G+, POLIMI will acquire a few programmable security appliances such as Gowin R86S or Protectli Vault to be used as CPEs and a high-performance server equipped with NVIDIA GPUs for real-time traffic analysis and performance prediction.

PoliBA: The Telematics Laboratory at PoliBA has the following hardware devices for experimental testbeds realization: Internet of Things embedded systems (TelosB, Zolertia Z1, OpenMote-CC2538, ESP8266, ESP32, PySense, FiPy, STMicroelectronics programmable boards, among various IoT sensors for security, Industry 4.0, and smart agriculture), gateway for Internet of Things systems (Raspberry Pi, Pandaboard ES, BeagleBoard Black, LattePanda, Intel and NVIDIA NUCs), network equipment (Network analyzer, WiFi access point, CISCO and Allied Telesis router and switch, wireless boards, Software Defined Radios), simulation tools for network architecture and wireless communication system design, simulation and development, laptops, tablets, and workstations useful for supporting the activities described in the present research proposal. The Telematics Laboratory is currently involved in the realization of the "Experimental laboratory of Intergrated Terrestrial and Non-Terrestrial Networks and Services (iTNT-NS)". That laboratory will be equipped with 1) basic network infrastructure, such as switches, routers, and Wi-Fi access points, 2) advanced network equipment, such as channel emulator, and SDR, 3) high-performance computing workstations and data storage, 4) non-terrestrial equipment, such as drones and positioning system, and 5) end-user devices, such as 5G COTS, IoT, programmable SIMs. *Prospective New Equipment:* POLIBA will use a portion of the budget for acquiring powerful and high-technological instrumentations for setting up a 5G network, including a radio interface and core network. These instrumentations include Software Defined Radio (SDR) boards through which emulating end users and base station, computers with customized network interfaces through which controlling the aforementioned SDR boards, a workstation able to emulate the 5G core network, as well as cables and other required hardware and networking tools. These equipment will be properly integrated to create a testbed environment supporting the experimentation of Lawful Interception methodologies and tools that will be studied in WP3.

Section d. GANTT diagram

This section presents the Gantt chart for the ISP5G+ project, providing a visual representation of the project's timeline and milestones. The project spans a period of 18 months and is divided into two distinct phases. The first phase, covering the initial 12 months of the project, is dedicated to achieving the first milestone associated with each WP. The second phase of the project, spanning the remaining 6 months, is focused on reaching the second milestone for each WP. This final phase is dedicated to consolidating the work done in the first phase and driving the integration together the demonstration of the selected use case. Note that the final tasks for WP1 and WP2 overlap in part the first phase. This overlap ensures a seamless integration of the work done, enhancing the overall efficiency and coherence of the project. Each phase culminates in the production of a deliverable, which provides a comprehensive overview of all the activities undertaken during that phase. In the subsequent section, we delve into the specifics of the milestones and deliverables for each phase of the project.

	WP / TASK	LEAD / INVOLVED	Project months, milestones and deliverable																		
			M1.1, M2.1, M3.1											M1.2, M2.2, M3.2						
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
WP1 – Physical Layer threats and solutions towards 6G		UNIPA												D1.1						D1.2
T1.1	Restoring privacy with physical-layer techniques	UNIBS																		
T1.2	Threats and solutions for physical layer authentication	UNIPD																		
T1.3	Threats and solutions for physical layer jamming and	UNIPA																		
T1.4	Integration and demonstration of selected use cases	UNIPA, UNIBS, UNIPD																		
WP2 – Security in Decentralized 5G Scenarios		UNIVAQ												D2.1						D2.2
T2.1	Security for edge systems	UNIVAQ																		
T2.2	Performance models and orchestration	POLIMI																		
T2.3	Integration and demonstration of selected use cases	UNIVAQ, POLIMI																		
WP3 – 5G security Monitoring and Lawful Interception		UNIRM2												D3.1						D3.2
T3.1	Protocol Parsing and Traffic Monitoring for 5G Security	UNIRM2																		
T3.2	Design of analytic tools for Law Enforcement	POLIBA																		

Figure 1 - GANTT chart of the ISP5G+ project

Section e. Milestones, Deliverables and KPI

In this section, we present a comprehensive overview of the milestones and corresponding deliverables of the ISP5G+ project. Each milestone represents a significant step towards achieving our project objectives, and the deliverables are tangible outcomes that demonstrate the progress made. The table below presents both these milestones and deliverables, alongside their expected delivery dates. This structured representation and the above Gantt chart provide a clear picture of our project roadmap.

Milestone n.	Milestone description	Milestone Delivery Date	Deliverables
M1.1	Design privacy-protecting techniques, which include the capability to obscure wireless communications using reflective intelligent surfaces. Design physical-layer authentication techniques exploiting time (coding) and channel variation. Development of countermeasures against jamming and sniffing attacks by utilizing data from the physical layer and effect of the smart surface.	M12	D1.1 - Title: 5G physical layer techniques for security and privacy attacks mitigation.
M2.1	Development of security mechanisms for the 5G MEC ecosystem. Development of performance models for security mechanisms in 5G MEC and cloud continuum scenarios.	M12	D2.1 – Title: Security Mechanisms and Performance Models for 5G MEC.
M3.1	Development of 5G specialized protocol	M12	D3.1 – Title: 5G protocol parsing,

	parsing. Creation of innovative algorithms for 5G traffic analysis. Definition of advanced lawful interception mechanisms in evolving 5G Landscape.		traffic analysis algorithms, and Advanced Lawful Interception mechanisms for 5G.
M1.2	Deploy of a real-time 5G sniffer framework, evaluation of security and privacy countermeasures against 5G physical layer attacks, and proof of concept validation demonstrating the effectiveness of these countermeasures.	M18	D1.2 - Title: 5G sniffer framework and evaluation of countermeasures for physical layer attacks.
M2.2	Validation of the system architecture, which is designed to ensure the security of MEC platforms, orchestration, and resource allocation. Demonstration of the effectiveness of these techniques through a proof of concept validation.	M18	D2.2 – Title: Validating of secure system architecture for 5G MEC.
M3.2	Finalization of a high-performance monitoring tool, catering to ultra-high data rates in 5G networks. Validation of algorithms for traffic analysis, including traffic classification techniques and inspection-friendly algorithms for Law Enforcement Authorities.	M18	D3.2 – Title: High-performance monitoring and traffic analysis tools in 5G.

Annexes: Curriculum vitae research team

This section introduces the research team behind the ISP5G+ project. The team comprising 38 researchers from 7 different partner institutions. The researchers' CV are provided in this section to give you a comprehensive understanding of their academic backgrounds and professional experiences. The CVs are arranged in accordance with the table presented at the beginning of the project proposal, ensuring a structured and coherent presentation.

Curriculum vitae DOMENICO GARLISI (PI) [UNIPA]

● **PERSONAL INFORMATION**

Garlisi Domenico
ORCID number: 0000-0001-6256-2752

URL for web site: https://www.unipa.it/persone/docenti/g/domenico.garlisi

● **EDUCATION**

2014   PhD in Electronics and Telecommunication Engineering. University of Palermo Final thesis: "Design, implementation and Experimental Evaluation of a Wireless MAC Processor over commercial WIFI cards"

2010   Master's Degree in Telecommunications Engineering. 110/110 with laude. University of Palermo. Final thesis: "Approaches and solutions for the dynamic use of the radio spectrum in cognitive networks"

● **CURRENT POSITION**

Since 2022   Assistant Professor at University of Palermo, Computer Science Department.

- ## PREVIOUS POSITIONS

2015 - 2022	Senior Researcher at CNIT (Consorzio Nazionale Interuniversitario per le Telecomunicazioni). www.cnit.it
2013 - 2015	Research contract (assegno di ricerca) at Engineering Department, University of Palermo.
2015 – 2023	CEO and co-founding partners of the University spin-off In.sight, created to develop the ARIANNA, an assisted navigation system for blind people. http://in.sight.srl

- ## FELLOWSHIPS AND AWARDS

2014	Best demo award at the ACM Wintech 2014 international workshop (workshop organized as part of the main MOBICOM conference), with the demo 'DEMO: Unconventional WiFi-ZigBee communications without gateways'.
2013	Best Paper Award in FUNEMS 2013 - G. Bianchi, P. Gallo, D. Garlisi, F. Giuliano, F. Gringoli, I. Tinnirello, "A Control Architecture for Wireless MAC Processor Networking", Future Network and Mobile Summit 2013, Lisbon, Portugal, July 3-5, 2013.
2011	Best Paper Award in WiNTECH 2011 - D. Garlisi, F. Gringoli, P. Gallo, F. Giuliano, S. Mangione, I. Tinnirello, "MAC-Engine: a new architecture for executing MAC algorithms on commodity WiFi hardware", WiNTECH 2011 Workshop, Las Vegas (NV), USA, Sept. 19, 2011.
2021	Realization of an interference study entitled: "Estimating the impact of shared use of CSS-LPWANs on DMR and FM PMR systems within the band 863-870 MHz". Coordination of the research activity. The study has been commissioned from national IoT LoRaWAN operator and has been submitted to the Italy defence ministry.
2020	Realization of an interference study entitled: "Estimating the impact of shared use of UNB-LPWANs on DMR and FM PMR systems within the band 863-870 MHz". Coordination of the research activity. The study has been commissioned from national IoT SigFox operator and has been submitted to the Italy defence ministry.
2021 - 2022	Research fellow at the Engineering Department of the University of Palermo. Title: "Design and development of a LPWAN programmable network infrastructure that automatically adapts in case of emergencies/disasters".
2017 - 2018	Research fellow at the Computer Science Department of the University of Rome "La Sapienza". Title: "Design and realization of the physical layer of an acoustic modem for communication in underwater sensor networks".
2013 - 2013	Graduate research fellow at the Department of Computer Science at UCLA University (University of California, Los Angeles). The focus of the research was on the design and implementation of reconfigurable access solutions for vehicular networks.

- ## TECHNOLOGY TRANSFER

2013	Tinnirello I, Bianchi G, Gallo P, Garlisi D, Giuliano F, Gringoli F: US Patent Application No. 13/907,546 for METHOD OF CHANGING THE OPERATION OF WIRELESS NETWORK NODES, about novel architectures for wireless cards;
2017	Croce D, Garlisi D, Giarré L, Tinnirello I,: Italian Patent No. 0001427023. Title: NAVIGATION SYSTEM FOR THE BLIND. Application number 54 of 4/12/2014.

2018	Wang Hsueh, Ilenia Tinnirello, Laura Giarrè, Daniele Croce, Domenico Garlisi, Chen Jih, Lin Ni, Chuang Tzu, - Brevetto taiwanese numero I673586. Titolo: "Real-time Training Track Guidance System Based on Deep Learning". Domanda N. 17(專)A109, Taiwan

● SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

Since 2020	He has supervised more than 5 BS and MSc thesis at the University of Palermo.
Since 2020	He has supervised one PhD student.

● ORGANISATION OF SCIENTIFIC MEETINGS

2024	Demo/Poster Co-Chair of the International Federation for Information Processing (IFIP) Networking 2024 Conference (IFIP NETWORKING 2024) Aristotle University premises in Thessaloniki, Greece.
2024	Co-Chair and organizer of the Smart Water Management Workshop of the IFIP NETWORKING 2024 Aristotle University premises in Thessaloniki, Greece.
2018	Publicity chair at CNERT 2018 (Computer and Networking Experimental Research using Testbeds), workshop co-locato con INFOCOM 2018.

● INSTITUTIONAL RESPONSIBILITIES

Since 2023	Member of the Educational Committee "Commissione Parti Sociali" within the computer science course. University of Palermo.
Since 2023	Deputy coordinator of the inter courses in Computer Science and Artificial Intelligence (CICSI) at University of Palermo.

● REVIEWING ACTIVITIES

Since 2022	Editorial board member for "Technologies and Sensors for Visually Impaired People" journals Bioengineering, Biomechanics, Biosensors, Robotics, e Sensors.
2024	Guest Editor of Discover Internet of Things journal (ISSN 2730-7239). Topical Collection Title: "Massive IoT and Edge Computing for Smart and Sustainable Cities"
2023	Program Committee member at the conference ALGOCLOUD
2024	TPC member at the conference CCNC 2024, 2023, 2022
2022	TPC member at the conference INFOCOM WKSHPS CNERT 2019, 2020, 2021, 2022, 2023, 2024
2022	TPC member at the conference SECON 2022

● MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)

Since 2023	Founding Member of the CNIT National Laboratory in Sicily. The laboratory focus activities are on network coexistence and optimization based on data-driven algorithm. www.cnit.it
Since 2023	Member of the Association for Computing Machinery (ACM)
Since 2023	Member of the High Performance, Edge And Cloud computing (HiPEAC)

● MAJOR COLLABORATIONS

Since 2020	Collaboration with the University of Rome "La Sapienza". Telecommunications Networks group coordinated by Prof. Francesca Cuomo. The topics on which the collaborations are active fall in the field of IoT networks using the LoRaWAN protocol.

Since 2020   Collaboration with the University of Rome "La Sapienza". Dipartimento di Ingegneria INFORMATICA, AUTOMATICA E GESTIONALE, networks and edge processing group coordinated by Prof. Ioannis Chatzigiannakis. The topics on which the collaborations are active fall in the field of edge computing including wireless networks with a focus on IoT.

Since 2018   Collaboration with the University of Rome Tor Vergata. Telecommunication Networks group coordinated by Prof. Giuseppe Bianchi. The topics on which the collaborations are active fall in the field of security and privacy in 5G networks.

2014 - 2020   Collaboration with the European research center IMEC. Telecommunication Belgian research group coordinated by Prof. Ingrid Moerman. Research topic related to WiFi and ZigBee wireless technologies and testbed.

2014 – 2021   Collaboration with Arizona State University. In the research group coordinated by Prof. Violet R. Syrotiuk, Associate Professor Computer Science & Engineering, Arizona State University, USA. The aim of the collaboration was to develop new protocols for accessing the medium in real testbeds.

Appendix: All current grants and on-going and submitted grant applications <u>of the PI</u> <u>and Co PI</u> (Funding ID)

Project Title	Funding source	Amount (Euros)	Period	Role of the PI	Relation to current proposal
SPRINT (Supporting Project to Restart on Intelligent Networks for Telecommunications)	Programma PE RESTART PNRR CUP B83D22001190006	3.600.000 €	2024-2025	Local PI for the University of Palermo (contribution to the proposal)	This is a project on resources optimization in the field of the edge to cloud continuum distribute processing; no overlapping in objectives; possible synergies with WP6.
FeelArt (Feel Art with all your Senses)	Fondo Italiano per le Scienze Applicate (FISA) 2022	2.861.713 €	submitted	Lead of the project ICT area (contribution to the proposal)	This is a project on new smart interface for user; no overlapping in objectives.
SOLPAINT (Solar Paint for Clean Energy Production in Sustainable Buildings)	Fondo Italiano per la scienza (FIS 2) 2022-2023	1.486.100 €	submitted	Lead of the project ICT area (contribution to the proposal)	This is a project on new smart interface for user; no overlapping in objectives.
MAGDA (Models and Algorithms relying on knowledge Graphs for sustainable Development goals monitoring and Accomplishment)	Programma PE FAIR PNRR CUP H23C22000860006	220.000 €	submitted	WP leader	This is a project where graphs based approaches are used to optimize energy and hydric consumptions; no overlapping in objectives.

Curriculum vitae STEFANIA BARTOLETTI (CO-PI) [UNIRM2]

- **PERSONAL INFORMATION**

Bartoletti, Stefania

Researcher unique identifier(s) (ORCID): https://orcid.org/0000-0003-1428-9776

URL for web site: https://www.stefaniabartoletti.info/

- **EDUCATION**

2015	Ph.D.: Engineering Science, Information Engineering
	Department of Engineering, University of Ferrara, Italy
	Ph.D. Supervisor: Andrea Conti

| 2011 | Master in Electronics and Telecommunication Engineering |
| | Department of Engineering, University of Ferrara, Italy |

- **CURRENT POSITION**

2023 – today   Associate Professor
                Department of Electronics Engineering, University of Rome "Tor Vergata", Rome, Italy

- **PREVIOUS POSITIONS**

2022 –2023   Researcher (tenure-track)
              Department of Electronics Engineering, University of Rome "Tor Vergata", Rome, Italy
2019 –2022   Researcher (tenure)
              Institute of Electronics, Computer and Telecommunication Engineering (IEIIT), National Research Council of Italy (CNR), Bologna, Italy
2016– 2019   Postdoctoral Associate - Marie-Skłodowska Curie Global Fellow
              - University of Ferrara, Ferrara, Italy (2019, return phase)
              - Institute for Data, System, and Society, Massachusetts Institute of Technology, USA (2016-2018, outgoing phase)
2010 – 2012   Research Collaborator
               National Inter-University Consortium for Telecommunications, Italy

- **FELLOWSHIPS AND AWARDS**

2022   Starting Grant, European Research Council (ERC-STG-2022)
2016 - 2019   Marie-Skłodowska Curie Global Fellowship, European Commission (MSCA-IF-GF)
2016   Paul Baran Young Scholar Award, The Marconi Society, 2016
2015   Best Ph.D. Thesis in the field of Communication Technologies, National Telecommunications and Information Theory Group (Italian GTTI)
2015   IEEE CWIT Student Paper Award, IEEE Canadian Workshop on Information Theory

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2023 - today   supervision of 2 PhD students, University of Rome "Tor Vergata"

2020   co-supervision of 1 PhD student, CNR and University of Bologna (the PhD Fellowship is granted by CNR under the supervision of the candidate co-PI)

● **ORGANISATION OF SCIENTIFIC MEETINGS**

2022-2024   TPC Co-Chair and organizer of the "IEEE ICC Workshop on Synergies of Communication, Localization, and Sensing Towards 6G", ICC 2022 (Seoul, South Korea), ICC 2023 (Rome, Italy), and ICC 2024 (Denver, Colorado, USA)

2021   TPC Chair and organizer of the "Special Session on Autonomous Network Management towards 6G" at EUCNC 2021

2017-2021   TPC Chair and organizer of the "IEEE Workshop on Advance in Network Localization and Navigation", at ICC 2017 (Paris, France), ICC 2018 (Kansas City, USA), ICC 2019 (Shanghai, China), Globecom 2021 (Madrid, Spain)

● **INSTITUTIONAL RESPONSIBILITIES**

2021 – present Chair of the Special Interest Group on Wireless Localization, Radio Communications Committee, IEEE Communications Society

2018 – 2021.   Vice-Chair of the Special Interest Group on Wireless Localization, Radio Communications Committee, IEEE Communications Society

2021 – 2022   Member of the Recruitment Committee of the H2020 MSCA-ETN "MetaWireless"

2020   Expert Evaluator for H2020-MSCA-IF-2020, Research Executive Agency of the European Commission

● **REVIEWING ACTIVITIES**

2020 – present Associate Editor of the IEEE Communications Letters (she has received the Best Reviewer Award in 2020 and 2021)

2013 – present Reviewer for (selected journals):
                IEEE Journal on Selected Areas in Communications, IEEE Trans. on Aerospace and Electronic Systems, IEEE Trans. On Wireless Communications, IEEE Trans. on Vehicular Technology, IEEE Communications Letters Communications, IEEE Communications Magazine, IEEE Wireless Communications Letters

2012 – present Member of the TPC and Reviewer for IEEE PIMRC, IEEE GLOBECOM, IEEE ICC, EURASIP/IEEE EUSIPCO

● **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

2020 –present   Founding Member of the National Laboratory of Wireless Communications of CNIT

2020 –present   European Telecommunications Standards Institute (ETSI)

2019 –present   Member, IEEE Signal Processing Society

2012 –present   Member, IEEE Communications Society

2016 –present   Member, Institute for Electrical and Electronics Engineers

2011 –2015   Student Member, Institute for Electrical and Electronics Engineers

● **MAJOR COLLABORATIONS**
  • Prof. Moe Z. Win, Wireless Localization, Laboratory for Information and Decision Systems, MIT, Cambridge USA
  • Dr. Santiago Mazuelas, Statistical Inference and Machine Learning, Basque Center for Applied Mathematics, Bilboa, Spain
  • Dr. Nicolò Decarli and Dr. Barbara Masini, National Research Council of Italy, Bologna, Italy
  • Prof. Alessandro Bazzi, Vehicular Communications, University of Bologna, Bologna, Italy

Appendix: All current grants and on-going and submitted grant applications <u>of the PI</u> <u>and Co PI</u> (Funding ID)

Current grants (Please indicate "No funding" when applicable):

Project Title	*Funding source*	*Amount (Euros)*	*Period*	*Role of the PI*	*Relation to current proposal*
FIND-OUT	European Research Council "Starting Grant"	1019000 euros	July 2023 – May 2028	Principal Investigator	This is a project on sensing and communications in the cloud continuum; no overlapping in objectives; possible synergies with WP1.
ANALYSAT	Horizon Europe under the Open Call of the "6G-SANDBOX" project	180000 euros (total)	November 2023 – March 2024	Local PI for the University of Rome Tor Vergata (one out of three partners)	This is a project on location analytics for 5G; no overlapping in objectives; no overlapping either in time or in objectives.
SPECX	HORIZON-MSCA-2023-DN-01	3929263 euros (total)	submitted	Local PI for the University of Rome Tor Vergata	This is a project on spectrum sharing in 6G; no overlapping in objectives.

Curriculum vitae FRANCESCO GRINGOLI [UNIBS]

● **PERSONAL INFORMATION**

GRINGOLI, Francesco
ORCID number: 0000-0003-2621-582X

URL for web site: https://ans.unibs.it/people/gringoli

● **EDUCATION**

2002   PhD
              Doctoral degree obtained from University of Brescia, Italy. Thesis title: "All-Optical
              Wavelength Conversion Devices for Optical Communication Systems". Supervisor: Prof.
              Costantino De Angelis.

1998   Laura degree (5 years) obtained summa cum laude from University of Padova, Italy. Thesis
              title: "All-Optical Signal Processing by means of Quadratic Non-Linearity". Supervisor:
              Prof. Costantino De Angelis.

● **CURRENT POSITION**

since 2021   Full Professor at the Department of Information Engineering (DII), University of Brescia.

● **PREVIOUS POSITIONS**

2018 – 2021   Associate Professor at the Department of Information Engineering (DII), University of
              Brescia.
2005 – 2018   Assistant Professor at the Department of Information Engineering (DII), University of
              Brescia.

FELLOWSHIPS AND AWARDS

2023   Best paper award in MobiHoc 2023 – K.C. Woo, M. Cominelli, F. Gringoli, J. Widmer, K. Jamieson,
              "Scalable Multi-Modal Learning for Cross-Link Channel Prediction in Massive IoT Networks".
              Proceedings of the 24th International Symposium on Theory, Algorithmic Foundations, and Protocol
              Design for Mobile Networks and Mobile Computing, Washington DC, USA, October 23-26, 2023.

2023   Best paper award in Fusion 2023 – M. Cominelli, F. Gringoli, L. Kaplan, M. Srivastava, F. Cerutti,
              "Ac- curate Passive Radar via an Uncertainty-Aware Fusion of Wi-Fi Sensing Data". Proceedings of
              the 26th International Conference on Information Fusion, Charleston, US, June 27-30, 2023.

2022   Best paper award in WiNTECH 2021 – F. Gringoli, M. Cominelli, A. Blanco, J. Widmer, "AX-CSI:
              Enabling CSI Extraction on Commercial 802.11ax Wi-Fi Platforms". Proceedings of the 15th ACM
              Workshop on Wireless Network Testbeds, Experimental evaluation and CHaracterization
              (WiNTECH'21), New Orleans, US, April 1, 2022.

2021   Best paper award in Medcomnet 2021 – M. Cominelli, F. Gringoli, R. Lo Cigno, "Passive Device-
              Free Multi- Point CSI Localization and its Obfuscation with Randomized Filtering", 19th
              Mediteranean Communication and Computer Networking Conference, Ibiza, Spain (online), June
              15-17, 2021.

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

  - He has supervised more than 50 BS and MSc thesis since 2005 at the University of Brescia.
  - He has supervised four PhD students. He is currently supervising one PhD student.

- **INSTITUTIONAL RESPONSIBILITIES (if applicable)**

2021   delegate for Erasmus and International Affairs at the Dept. of Information Engineering of the University of Brescia.

- **REVIEWING ACTIVITIES (if applicable)**

2023   Examiner of PhD Thesis at Technische Universitaet Darmstadt (Germany)
2022   Examiner of PhD Thesis at Politecnico di Torino (Italy)
2022   Reviewer of PhD Thesis at University Carlos III in Madrid (Spain)
2022   Member of the PhD admission committee, Università degli Studi di Brescia (Italy)
2021   Examiner of PhD Thesis at Universitat Pompeu Fabra in Barcelona (Spain)
2020   Reviewer of PhD Thesis at Università degli Studi di Roma Tor Vergata (Italy)
2020   Reviewer of PhD Thesis at Università degli Studi di Palermo (Italy)
2019   Examiner of PhD Thesis at University of Edinburgh (UK)
2017   Member of the PhD admission committee, Università degli Studi di Palermo (Italy)
Since 2015   Editor for Wiley/Hindawi journals "Mobile Information Systems" and "Security and Communication Networks"

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

since 2016   Senior Member of the Institute of Electrical and Electronics Engineers (IEEE)

since 2005   Member of the Institute of Electrical and Electronics Engineers (IEEE)

● **MAJOR COLLABORATIONS**

- Secure Mobile Networking Lab, Technische Universitaet Darmstadt (Germany)
- IMDEA Networks (Spain)
- University of Edinburgh (UK)
- Princeton University (US)

Curriculum vitae RENATO LO CIGNO [UNIBS]

● **PERSONAL INFORMATION**

Lo Cigno, Renato Antonio
ORCID: https://orcid.org/0000-0002-4755-2844

URL for web site: https://ans.unibs.it/people/locigno/

● **EDUCATION**

1988 Laurea in Ingegneria Elettronica a indirizzo Telecomunicazioni, Politecnico di Torino, Italy

● **CURRENT POSITION**

2019 – today   Full Professor, Department of Information Engineering, University of Brescia, Italy

● **PREVIOUS POSITIONS**

2002 – 2019   Associate Professor, Department of Computer Science and Engineering, University of Trento, Italy
2001 – 2002   Assistant Professor, Department of Electronics, Politecnico di Torino, Italy
1988 – 1999   Research Scholar, CS Dept. University of California Los Angeles (UCLA)
1991 – 2002   Research Engineer, Department of Electronics, Politecnico di Torino, Italy

● **FELLOWSHIPS AND AWARDS**

2001   Jul-Aug, Computer Science Dept. University of California, Los Angeles (UCLA), USA, invited by Prof. Mario Gerla
2006   Jul-Aug, Computer Science Dept. University of California, Los Angeles (UCLA), USA, invited by Prof. Mario Gerla
2013   Jul-Aug, NEC EU Research Laboratories, Heidelberg, Germany, invited by Dr. Saverio NiccoliniScholarship, Name of Faculty/ Department/Centre, Name of University/ Institution/ Country
2006 - today   Recipient of **nine "Best Paper Award"** from IEEE sponsored conference

● **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2002 – today   **Supervisor of 12 PhD** (successfully completed); 3 out of 12 in foreign Universities (1 in Austria e 2 in Hungary); Member of 8 evaluation committees in international PhD defense.

2010 – today   **Supervisor of the following Post Doc Fellows:** Csaba Kiraly (3 years); Leonardo Maccari (3 years, with a Marie Curie fellowship); Michele Segata (3 years); Lorenzo Ghiro (2 years)

● **ORGANISATION OF SCIENTIFIC MEETINGS**

2023   General Chair: IEEE/IFIP Conference on Wireless On-demand Network Systems and Services (WONS)
2017   TPC Chair: IEEE Vehicular Networking Conference (VNC)
2016   General Chair: IEEE/IFIP Conference on Wireless On-demand Network Systems and Services (WONS)
2013   Publication Chair: IEEE 32nd International Conference on Computer Communications (INFOCOM)
2016   POublication Chair: ACM 17th International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc), 2016
2013   General Chair: IEEE International Conference on Peer-to-Peer Computing (P2P'13)
2007   General Chair: IEEE Conference on Wireless On-demand Network Systems and Services (WONS),
2006   General Chair ACM International Workshop on Wireless Mobile Applications and Services on WLAN HotSpots (WMASH)
2006   TPC Chair:ACM/IEEE International Symposium on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM)
2005   TOC Chair: ACM International Workshop on Wireless Mobile Applications and Services on WLAN HotSpots (WMASH)
2004   TPC Chair: IFIP Conference on Wireless On-demand Network Systems and Services (WONS)

● **INSTITUTIONAL RESPONSIBILITIES**

2020 – today   University of Brescia, Member of a the DRII PhD Program (Collegio dei Docenti)
2020 – today   University of Brescia, University Delegate in the "Assemblea dei Soci" of CNIT (Consorzio Nazionale Interuniversitario Telecomunicazioni)
2016 –   2019   University of Trento, Member of the council ("assemblea consortile") of CINECA, the software house of the Ministry of Education and Research and most Italian public Universities.
2009 – 2019   University of Trento, "Delegato del Rettore per i servizi e le tecnologie informatiche" Rector ICT Delegate: Responsibility of the University policies in ICT infrastructure and services, including the interface with GARR and control on de-materialization administrative procedures. The delegation was given by Rector Bassi and has been confirmed by Rector de Pretis and Rector Collini.
2009 – 2019   University of Trento, Dept. ICT Coordinator: Supervision and coordination of the ICT technical staff of the department.
2003 – 2019   University of Trento, ICT PhD School Committee Member
2009 – 2018   University of Trento, ICT PhD School Executive Committee Member: Elected Member of the Executive Committee of the ICT PhD School to support the coordinator activities.
2003 – 2009   University of Trento, Dept. Representative in the committee for the guidance of the policies in ICT services for the Faculty of Science
2005 – 2012   University of Trento, Dept. Library Delegate: Coordination and approval of Department library policies and acquisitions
2004 – 2010   University of Trento, Dept. Seminars Management: Organization and financial management of scientific seminars with general interest for the entire Department given by invited speakers

● **REVIEWING ACTIVITIES**

2021 – today   Area Editor, Computer Communications, Elsevier
2017 – 2022   Editor, IEEE/ACM Transactions on Networking
2005 – 2011   Editor, Computer Networks, Elsevier

Reviewer and TPC Member for many flagship conferences in the area of computer networks, like IEEE INFOCOM, Globecom, ICC, VNC, ACM MSWiM; and regular reviewer for Class A Journals like, Transactions on Communications, JSAC, Transactions on Vehicular Technology, Transactions on Mobile Computing, Transactions on Intelligent Vehicles, and many more

● **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

IEEE Senior Member
ACM Senior Member

● **MAJOR COLLABORATIONS**

Mario Gerla	UCLA CS Department, CA, USA
Falko Dressler	TU Berlin, DE
Cristoph Sommer	TU Dresden, DE
Ernst Biersack	EURECOM, FR
Roberto Tempo	Politecnico di Torino, IT
Franco Blanchini	University of Udine, IT
Leandro Navarro	Universitat Politècnica de Catalunya, SP

Curriculum vitae LUIGI COLALONGO [UNIBS]

● **PERSONAL INFORMATION**

Colalongo, Luigi
Researcher unique identifier(s): Scopus Author ID: 55908764500

URL for web site:

● **EDUCATION**

1998   PhD in "*Tecnologie Materiali e Componenti per l'Elettronica*",
                University of Trento, Italy.

1991   Master Degree in Electronic Engineering
                University of Bologna, Italy.

● **CURRENT POSITION(S)**

2018 – now   Full Professor of Electronics
                Dept. of Information Engineering, University of Brescia, Italy.

- **PREVIOUS POSITIONS**

2005 – 2018   Associate Professor
                Dept. of Information Engineering, University of Brescia, Italy.

1999 – 2005   Assistant Professor
                Dept. of Information Engineering, University of Brescia, Italy.

- **FELLOWSHIPS AND AWARDS**

2016   Third of "Innovation Design Contest", as supervisor of a Master Thesis.

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)**

2005 – now   Number of PhD: 6; Master Students: 30
                Dept. of Information Engineering, University of Brescia, Italy.

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2016   Member of the local committee and publication chair of GE2016, "The 48th Annual Meeting of the Associazione Gruppo Italiano di Elettronica"

- **INSTITUTIONAL RESPONSIBILITIES**

2012 –   now Member of the PhD Committee, University of Brescia, Italy

2013 –   now   Member of the Presidio di Qualità della Ricerca
                Dept. of Information Engineering, University of Brescia, Italy.

- **REVIEWING ACTIVITIES**

1998 – now   Reviewer of IEEE Electron Device Letters, Microelectronics Journal, IET Electronics Letters, Solid State Electronics, IEEE Transactions on Electron Devices (golden reviewer), Organic Electronics

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

1998 – now   IEEE Member.

- **MAJOR COLLABORATIONS (if applicable)**

STMicroelectronics, Agrate, Italy.
PDF Solutions, Desenzano del Garda, Italy.
ENEA, Ente per le Nuove tecnologie l'Energia e l'Ambiente, Italy.
CNR, Consiglio Nazionale della Ricerca, Italy.

Curriculum vitae ANNA RICHELLI [UNIBS]

- **PERSONAL INFORMATION**

Family name, First name: Richelli, Anna

Researcher unique identifier(s): ORCID 0000-0003-4269-1228, Scopus Author ID: 6602348270

SciProfiles: 644663

- **EDUCATION**

2004	PhD in Electronic Instrumentation, Dept. of Information Engineering, University of Brescia, Italy. Supervisor: Prof. Zsolt Kovacs.
2000	Master Degree in Electronic Engineering Dept. of Information Engineering, University of Brescia, Italy.

- **CURRENT POSITION(S)**

2018 – now   Associate Professor of Electronics
Dept. of Information Engineering, University of Brescia, Italy.

- **PREVIOUS POSITIONS**

2005 – 2018   Assistant Professor
Dept. of Information Engineering, University of Brescia, Italy.

- **FELLOWSHIPS AND AWARDS**

2014   Winner of "Innovation Design Contest", as supervisor of a Master Thesis.

2016   Third of "Innovation Design Contest", as supervisor of a Master Thesis.

2021   Best Paper Award from Energies, MDPI.

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)**

2005 – now   Number of PhD: 2; Master Students: 30
Dept. of Information Engineering, University of Brescia, Italy.

- **ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

2024   Member of EMC Compo Local Committee, Italy.

- **INSTITUTIONAL RESPONSIBILITIES (if applicable)**

2007 –   now Member of Stage Board, helping connection between last year students and companies,
University of Brescia, Italy
Member of the Committee for Engineering Qualification
2014   Member of the PhD Final Exam Committee
for the Italian Scuola Interpolitecnica di Dottorato SIPD
2020   Member of the PhD Final Exam Committee
for the Anna University of Chennai India

2022   Member of the PhD Final Exam Committee
for Politecnico di Torino, Italy, and Universidade Federal do Rio Grande do Sul
External Member for the Disciplinary Board of University of Bari (Italy)
and for the Ethical Committee of University of Insubria (Italy).

● **REVIEWING ACTIVITIES (if applicable)**

2008 – now   Reviewer of International Journals: IEEE Journal of Solid State Circuits, IEEE Transactions on Electromagnetic Compatibility, IEEE Transactions on Circuits and Systems, IEEE Transactions on Power Electronics, IET Power Electronics, IET Electronics Letters, Elsevier Microelectronics Journal. Editorial Board Member of MDPI Journals: Electronics, Energies and Sensors.
2010 and 2013 Reviewer for the Italian Minister of University and Research MIUR for the grant Futuro in Ricerca
2014   Reviewer of industrial research proposals for Provincia Autonoma di Trento, Italy
2015 – now   Assessor of Australian Research Counsil
2015   Reviewer and Rapporteur of Italian grant PRIN 2015
2022   Contract as Expert with the Research Expert Agency to assist CINEA in managing EU Funding Programmes, in particular for the HORIZON-CL5-2021-D3-02 call, registered expert number EX2021D491903

● **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

2016 – now   IEEE Senior Member.

● **MAJOR COLLABORATIONS (if applicable)**

STMicroelectronics, Agrate, Italy.
Jean-Michel Redouté, Senior Lecturer at the Electrical and Computer Systems Engineering Department of Monash University Monash University, Clayton, Australia.
Prof. Paolo Stefano Crovetti, Politecnico di Torino, Italy.

Curriculum vitae MARINA ZANELLA [UNIBS]

● **PERSONAL INFORMATION**
Family name, First name: Zanella, Marina
Researcher unique identifier(s): ORCID 0000-0003-3896-3913

URL for web site: https://www.unibs.it/it/ugov/person/848

● **EDUCATION**

1986   Master in Electronics Engineering
Faculty of Engineering / Department of Electronics Engineering, Politecnico di Milano / Italy

● **CURRENT POSITION(S)**

2002 – now   Current Position: Associate Professor
Department of Information Engineering (DII), University of Brescia / Italy

- **PREVIOUS POSITIONS**

1990 – 2002   Assistant Professor
Department of Electronics for Automation (DEA), University of Brescia / Italy

- **FELLOWSHIPS AND AWARDS**

2023   Quality Champion ECAI 2023 TPC Award
2019   Incentive UNA TANTUM for year 2015, University of Brescia / Italy
2017   Incentive UNA TANTUM for year 2013, University of Brescia / Italy
2015   Incentive UNA TANTUM for year 2011, University of Brescia / Italy
2011   Best paper award (Italian Chapter IEEE SMC)
1988 – 1990   EULO (Ente Universitario Lombardia Orientale) Scholarship, Faculty of Engineering/ U.O.P. Industrial Automation / University of Brescia/ Italy
1987 – 1988   CILEA (Consorzio Interuniversitario Lombardo per la Elaborazione Automatica) Scholarship, Faculty of Engineering/ U.O.P. Industrial Automation / University of Brescia/ Italy

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

1998 – now   65+ Master Students
Department of Information Engineering (DII)/ University of Brescia / Italy
2011 – 2016   2 PhD Students
Department of Information Engineering (DII)/ University of Brescia/ Italy

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2021   Session co-chair at KES (13th International Conference on Intelligent Decision Technologies)
2017   Co-chair of DX (International Workshop on Principles of Diagnosis) / 35 attendees (approximately) / Italy
2010   Local organizer of AI*IA (Symposium of the Italian Association for Artificial Intelligence) / 85 attendees (approximately) / Italy

- **INSTITUTIONAL RESPONSIBILITIES**

2017 – 2020   Member of CPDS (Committee of Teachers and Students) /Department of Information Engineering (DII) / University of Brescia / Italy
2013 – 2017   Head of CPDS (Committee of Teachers and Students) /Department of Information Engineering (DII) / University of Brescia / Italy
2010 - 2019   Organizer of five Internal Seminars, University of Brescia / Italy

- **REVIEWING ACTIVITIES**

2023 – now   Steering Committee Member of DX (International Conference on Principles of Diagnosis and Resilient Systems)
2023   Expert Reviewer of Habilitation Thesis, University of Klagenfurt, Austria
2022 – now   Senior Technical Program Committee Member of AAAI 2023, AAAI 2024
2018 – now   Technical Program Committee Member of IJCAI-ECAI 2018, DX 2018, IJCAI 2019, IEA/AIE 2019, DX 2019, IJCAI-PRICAI 2020, AAAI 2020, DX 2020, AAAI 2021, KES-IDT 2021, DX 2021, AAAI 2022, KR 2022, ECAI 2023, KR 2023, DX 2023

2019	Assessor of the scholarly accomplishments of a candidate to the promotion to the rank of Associate Professor, Ben-Gurion University of the Negev, Israel
2018 – now	Reviewer for Journal of Artificial Intelligence Research, Information Sciences, Engineering Applications of Artificial Intelligence, Journal of the Franklin Institute, Granular Computing, Applied Soft Computing, Mathematical and Computer Modelling of Dynamical Systems, IEEE ICPS 2022
2017	Evaluator of a Project Proposal for the Israel Science Foundation
2014	Habilitation Committee Member, University of Klagenfurt, Austria
2003	Evaluator of a V-Framework Programme Project
2000	Evaluator of a Project Proposal for the Canadian Defence Department

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

1997 – now	IEEE Member
1998 – 2000	Member of MONET (European Network on Model based and qualitative reasoning systems)

Curriculum vitae LUCA GIUZZI [UNIBS]

- **PERSONAL INFORMATION**

Family name, First name: Giuzzi, Luca

Researcher unique identifier(s): ORCID 0000-0003-3975-7281, ResearcherID: F-4066-2010

URL for web site: https://luca-giuzzi.unibs.it/index.en.php

- **EDUCATION**

2001	DPhil in Mathematics
	School of Mathematical Sciences/University of Sussex, UK
	J.W.P. Hirschfeld
1996	Master in Mathematics (Laurea)
	Dipartimento di Matematica, Universita' Cattolica del Sacro Cuore, Italy
	Name of Faculty/ Department, Name of University/ Institution, Country

- **CURRENT POSITION(S)**

2018 – now	Current Position: Associate professor DICATAM, University of Brescia, Italy

- **PREVIOUS POSITIONS**

2008 – 2018	Research Associate
	Dipartimento di Matematica, University of Brescia, Italy
2004 – 2008	Research Associate
	Department of Mathematics. Politecnico di Bari, Italy

● **FELLOWSHIPS AND AWARDS**

2020	Incentivo Una Tantum 2018 University of Brescia
2017	Incentivo Una Tantum 2013 University of Brescia
2015	Incentivo Una Tantum 2011 University of Brescia
2017	FABR, ANVUR prot. 20/2017.
2001 – 2004	Assegno di ricerca, University of Brescia (IT)
1997 – 2001	EPSRC grant covering tuition fees for doctoral studies
1997 – 2001	INDAM Scholarship for doctoral studies abroad

● **ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

2022	International Conference "Combinatorics 2022"/170 participants/Mantova (IT)
2018	International Conference "Combinatorics 2018"/150 participants/Arco (IT)
2017	International Conference "Fq13"/200 participants/Gaeta (IT)
2008	International Conference "Combinatorics 2008"/230 participants/Costermano (IT)

● **REVIEWING ACTIVITIES (if applicable)**

2015 –	Reviewer for VQR 2015-2019.
2023 –	Expert evaluator for the European Research Executive Agency (REA)
2023 –	Expert reviewer for the "Fonds de la Recherche Scientifique – FNRS" Belgium

● **MAJOR COLLABORATIONS (if applicable)**

- Ilaria Cardinali, Polar Spaces and their applications, Dipartimento di Ingegneria dell'Informazione e Scienze Matematiche/University of Siena/IT
- Angela Aguglia, Algebraic varieties over finite fields and applications, Dipartimento di Meccanica, Matematica e Management/Politecnico di Bari/IT
- H. Cuypers, Polar spaces, Department of Mathematics and Computer Science/Eindhoven University of Technology/NL
- F. Zullo, MRD codes, Dipartimento di Matematica e Fisica/Universita' degli Studi della Campania Luigi Vanvitelli/IT

Curriculum vitae FEDERICO CERUTTI [UNIBS]

● **PERSONAL INFORMATION**

Cerutti, Federico

Researcher unique identifier(s): https://orcid.org/0000-0003-0755-0358

URL for web site: https://federico-cerutti.unibs.it/

● **EDUCATION**

29/03/2012	PhD Degree in Ingegneria Informatica ed Automatica, U. Brescia, Brescia, Italy. PhD Advisor: Prof. Giovanni Guida

2008   Master of Science Degree in Ingegneria Informatica, U. Brescia, Brescia, Italy (Final Grade 110/110L).

● **CURRENT POSITION(S)**

2022—   Associate Professor, U. Brescia, Brescia, Italy
2022—   Visiting Fellow, University of Southampton, Southampton, UK
2019—   Honorary Senior Lecturer, Cardiff University, Cardiff, UK

● **PREVIOUS POSITIONS**

2020—22   Panel member for the Italian National Evaluation of the Quality of Research (ANVUR), analogous to the UK REF (GEV member for VQR2014-2019) ANVUR, Italy
2019—22   Rita Levi-Montalcini Research Fellow, Fully-funded RTD-B, U. Brescia, Brescia, Italy
2018—19   Senior Lecturer, Cardiff University, Cardiff, UK
2015—18   Lecturer, Cardiff University, Cardiff, UK
2014—15   Post-Doc Research fellow grade 7, University of Aberdeen, Aberdeen, UK
2012—14   Post-Doc Research fellow grade 6, University of Aberdeen, Aberdeen, UK
2011—12   Researcher (Assegnista di Ricerca), U. Brescia, Brescia, Italy

● **FELLOWSHIPS AND AWARDS**

2023   Senior IEEE member
2023   Recipient of the Jean-Pierre Le Cadre Best Paper Award 2023
2021—   Distinguished ACM Speaker
2019   Winner of the Rita Levi-Montalcini Fellowship Award

● **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)**

2018—   First Advisor:
                1 student in the Italian National PhD Programme on AI (L. Lavazza, from 2023)
                1 student in the Information Engineering DRII PhD Programme, Università di Brescia (L. Nodari, from 2023)
                1 student at Cardiff University (M. Roig Vilamala — until when I worked for Cardiff University, then co-advisor, awarded in 2023)
2016—   Co-Advisor:
                1 student in the Italian National PhD Programme on AI (A. Barbin, from 2021)
                1 student at the Università di Brescia (S. Morzenti, from 2022),
                3 students at the University of Southampton (J. Birkbeck e K. Varys from 2022, O. Lipinski from 2021),
                1 student at Politecnico di Torino (R. Viera Valentim from 2020),
                2 students at the Cardiff University (R. A. A. Alshaikh, until I worked for Cardiff University: awarded in 2021; G. Parlak, awarded in 2021)

2015—   First Advisor:
                9 MSc, Università di Brescia (G. Dall'Oglio Risso, ongoing; M. Ferruggia, ongoing; A. Merici, ongoing; L. Lavazza, awarded in 2023; L. Nodari, awarded in 2023; G. Andreoli, awarded in 2022; F. Bozzoni, awarded in 2021; L. Festoni, awarded in 2021; L. Bertoni, awarded in 2020)
                5 MSc Students, Cardiff University (I. Cox, awarded in 2018; M. Abaho, awarded in 2017; A. Al-Shobaki, awarded in 2017; I. Katrimpouzas , awarded in 2017; A. Polonkai, awarded in 2017)
2009—   Co-Advisor di:
                3 MSc, Politecnico di Milano (M. Ferrero, with F. Amigoni and L. Tanca, ongoing; F. M. De Luca, with F. Amigoni and L. Tanca, awarded in 2023; R. Zanelli, with C. Cappiello and C. Sancricca, awarded in 2023),
                3 MSc Thesis, University College London (with S. Julier: H. Sarosh, awarded in 2021; S. Jiang, awarded in 2022; G. Thayaparan, awarded in 2022)

2 MSc Thesis, Cardiff University (R. Ferro-Kirby, awarded in 2017; V. Gkatzionis, awarded in 2017)

4 MSc, Università di Brescia (A. Cherubini, awarded in 2019; T. Zanetti, awarded in 2017; A. Schena, awarded in 2011; A. Zigliani, awarded in 2010; C. Gandelli, awarded in 2009)

● **ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

2024	Program co-Chair: 27th International Conference on Information Fusion
2023	Co-Chair: "Artificial Intelligence for Intelligence Analysis" special session, 2023 IEEE International Workshop on Technologies for Defense and Security
	Track Co-Chair: AI for Urban Traffic Control and Mobility, 36th International Conference: Florida Artificial Intelligence Research Society — FLAIRS-36
2022	Co-Chair, 2nd International AIxIA Workshop on Causality (Causal-ITALY)
2021	Co-Chair, International AIxIA Workshop on Causality (Causal-ITALY)
2020	Co-Chair: Computerized evidence-based decision making workshop
2018	Co-Chair: Digital Economy Crucible Workshop on Judicial Proofs and Artificial Intelligence, Cardiff
	Co-Chair: Second International Workshop on Systems and Algorithms for Formal Argumentation — SAFA 2018
2017	Track Co-Chair: IEA/AIE 2017 Special Track on Applications of Argumentation
	Local Chair, 17th Annual UK Workshop on Computational Intelligence
2016	Co-Chair: First International Workshop on Systems and Algorithms for Formal Argumentation — SAFA 2016
	Co-Chair: Cardiff Argumentation Forum — CAF 2016
2014	Co-Chair Demonstrations Track: Fifth International Conference on Computational Models of Argument — COMMA 2014
2010	Local Organisation Co-Chair: Third International Conference on Computational Models of Argument

● **INSTITUTIONAL RESPONSIBILITIES**

2020—	Chair of the U. Brescia node of the Italian National Cybersecurity Laboratory
2021—	Member of the PhD Board for the Italian National PhD Program in AI
2022—	Member of the PhD Board for the Dottorato di Ricerca in Ingegneria dell'Informazione (DRII), University of Brescia
2021—	External PhD advisor, Centre for Doctoral Training MINDS, U. of Southampton (UK)
2023—	Departmental Erasmus Mobility coordinator (Computer Science area)
2022—	University representative in UNINFO, the UNI — Italian Standard Body — for the areas associated with ISO / IEC Joint Technical Committee and the CEN
2019—	Member of the External Advisory Board of the Cardiff University Data Science Academy
2018—19	Academic Director of the Cardiff University Data Science Academy
2018—19	Programme Director of the Cardiff University MSc in Artificial Intelligence
2017—18	Chair of the Ethics Committee, School of Computer Science and Informatics, Cardiff U.

● **REVIEWING ACTIVITIES (if applicable)**

2022—	Associate Editor, Computer Science Review COSREV
2021—	Associate Editor, Frontiers in Computer Science - Theoretical Computer Science
2016—	Associate Editor, Argument and Computation
2024	Senior PC Member: European Conference on Artificial Intelligence ECAI 2024
2021	Senior PC Member: International Joint Conference on Artificial Intelligence IJCAI 2021
2020	Senior PC Member: International Joint Conference on Artificial Intelligence IJCAI 2020
2019—2020	Expert Reviewer, UK Royal Academy of Engineering
2020	Expert Reviewer, Estonian Research Council
2019	Senior PC Member: International Conference on Autonomous Agents and Multiagent Systems AAMAS 2019
	Co-editor, special issue in Argument and Computation
2016	Guest editor, special issue in Argument and Computation

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

2023—   Senior IEEE Member
2023—   Chair, IFIP WG12.1 "Knowledge Representation and Reasoning"
2023—   Member of the International Conference on Computational Models of Argumentation
                 Steering Committee
2022—   ACM Lifetime Professional Membership
2021—2023   IEEE Member
2013—2022   ACM Member
2021—2023   Member of CLUSIT — Italian Association for Cybersecurity
2016—2023   Vice-Chair, IFIP WG12.1 "Knowledge Representation and Reasoning"
2014—2021   Funder, former Vice-President and Secretary, International Competition on Computational
                 Models of Argumentation Steering Committee

- **MAJOR COLLABORATIONS (if applicable)**

Alun Preece, Cardiff University, complex event processing
Tim Norman, University of Southampton, reinforcement learning
Lance Kaplan, US Army Research Laboratory, uncertainty-aware reasoning
Mani Srivastava, UCLA, neuro-symbolic learning
Alessandra Russo, Imperial College London, neurosymbolic reinforcement learning
Francesco Amigoni, Maristella Matera, Letizia Tanca, Politecnico Milano, causal and argumentative
reasoning
Marco Mellia, Politecnico Torino, cyber threat detection and prevention

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Curriculum vitae ILENIA TINNIRELLO [UNIPA]

- **PERSONAL INFORMATION**

Tinnirello Ilenia
ORCID number 0000-0002-1305-0248

URL for web site: https://www.unipa.it/persone/docenti/t/ilenia.tinnirello

- **EDUCATION**

2004   PhD in Electronic Engineering, Computer Science and Telecommunications, with a thesis
                titled "Resource Management in Wireless Packet Networks", tutor Prof. Giuseppe Bianchi.
                University of Palermo

2000   Master's degree in Electronic Engineering, grade 110/110 cum laude, thesis: "Handover and
                Admission Control in cellular packet networks", supervisor Prof. Giuseppe Bianchi
                University of Palermo.

- **CURRENT POSITIONS**

Since 2020   Full professor, sector 09/F2, ING-INF03, Telecommunications University of Palermo

Since 2017   Coordinator of the International PhD Program in ICT University of Palermo

- **PREVIOUS POSITIONS**

2015 - 2020	Associate professor, sector 09/F2, ING-INF03, Telecommunications engineering, University of Palermo
2004 – 2015	Assistant professor, sector 09/F2, ING-INF03, Telecommunications engineering, University of Palermo
2015 – 2023	Technical Coordinator and founding member of the academic start-up In.sight, specialized in systems for supporting the autonomous navigation of visually impaired people In.sight srl, Palermo

● FELLOWSHIPS AND AWARDS

2014	Best demo award at the ACM Wintech 2014 international workshop (workshop organized as part of the main MOBICOM conference), with the demo 'DEMO: Unconventional WiFi-ZigBee communications without gateways'.
2013	Best Paper Award in FUNEMS 2013 - G. Bianchi, P. Gallo, D. Garlisi, F. Giuliano, F. Gringoli, I. Tinnirello, "A Control Architecture for Wireless MAC Processor Networking", Future Network and Mobile Summit 2013, Lisbon, Portugal, July 3-5, 2013.
2011	Best Paper Award in WiNTECH 2011 - D. Garlisi, F. Gringoli, P. Gallo, F. Giuliano, S. Mangione, I. Tinnirello, "MAC-Engine: a new architecture for executing MAC algorithms on commodity WiFi hardware", WiNTECH 2011 Workshop, Las Vegas (NV), USA, Sept. 19, 2011.
2007	Visiting Researcher Seoul National University, Seoul, South Korea
2006	Visiting Researcher Nanyang Technological University in Singapore
2004	Visiting Researcher, "Multimedia and Wireless Network Lab", invited by Prof. Sunghyun Choi. Seoul National University, Seoul, South Korea

● TECHNOLOGY TRANSFER

2013	Tinnirello I, Bianchi G, Gallo P, Garlisi D, Giuliano F, Gringoli F: US Patent Application No. 13/907,546 for METHOD OF CHANGING THE OPERATION OF WIRELESS NETWORK NODES, about novel architectures for wireless cards;
2017	Croce D, Garlisi D, Giarré L, Tinnirello I, : Italian Patent No. 0001427023. Title : NAVIGATION SYSTEM FOR THE BLIND. Application number 54 of 4/12/2014.
2018	'Real-time training trajectory guidance system based on deep learning', issue 17(専)A109, Taiwan

● SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

Since 2020	She has supervised more than 50 BS and MSc thesis at the University of Palermo.
Since 2020	She has supervised 10 PhD students.

● ORGANISATION OF SCIENTIFIC MEETINGS

2023	Demo chair for the ACM Mobicom 2023, September 2023
2019	Finance chair for the workshop ACM Mobile Ad Hoc Networking and Computing (Mobihoc 2019), Catania.

2019	Edas chair for the workshop IEEE SMILING 2019: Sustainable networking through MachIne 2019 Learning and Internet of thINGs, co-locato con INFOCOM 2019.
2019	Publicity co-chair for the conference IEEE BlackSeaCom 2019.
2018	Workshop co-chair for IEEE European Wireless, Catania, 2018.
2018	rack co-chair for the conference IEEE Research and Technologies for Society and Industry (RTSI) 2018, Palermo
2018	Technical program co-chair for the workshop Computer and Networking Experimental Research using Testbeds – Committee (CNERT), 2018, co-locato con INFOCOM 2018
2017	General co-chair for the workshop ACM Wireless Network Testbeds, Experimental Evaluation and Characterization (Wintech) 2017, Snowbird, USA.
2014	Local Organizer at Mediterranean Conference on Control and Automation (Med 2014), Palermo, Italy, June 2014
2013	Demo chair for the ACM Workshop on Wireless Network Testbeds, Experimental Evaluation and Characterization (Wintech) 2013, September 2013, Mobicom 2013
2013	Demo chair at the ACM Workshop on Wireless Network Testbeds, Experimental Evaluation and Characterization (Wintech) 2013, September 2013
2012	General chair at Privacy in Statistical Databases (PSD 2012), September 2012, Palermo, Italy. http://unescoprivacychair.urv.cat/psd2012/index.php?m=organization
2012	Tutorial Organizer (and speaker) on "Programmability of Wireless Networks" at ACM SIGCOM 2012, Augusto 2012, Helsinki, Finland http://conferences.sigcomm.org/sigcomm/2012/pwn.php

● INSTITUTIONAL RESPONSIBILITIES

Since 2021	Delegate to the Research activities of the Engineering Department at the University of Palermo
2018 - 2023	Data Protection Officer of the University of Palermo
2022	Coordinator of the Erasmus program with the University of Pireous (Greece)
2017	Coordinator of the International PhD Program in ICT from 2017
2010 – 2013	Scientific coordinator of the Palermo Research Unit of CNIT (National Inter-University Consortium for Telecommunications), from 2010 to 2013. Coordinator of the telecommunications networks group

● REVIEWING ACTIVITIES

Since 2016	TPC member of WoWMoM (World of Wireless, Mobile and Multimedia Networks)
2013 - 2021	TPC member of IEEE INFOCOM (International Conference on Computer Communications)
2005 - 2018	TPC member of IEEE WCNC (Wireless and Communication Networking Conference)

2016 - 2017   Member of the editorial board of the Journal of Communications and Networks.

2014 - 2015   Member of the editorial board of the Elsevier Computer Communication journal.

2010 - 2014   TPC member of IEEE ICC (International Conference on Communication)

2010 - 2013   TPC member of IIEEE GLOBECOM (Global Communication Conference)

● **MAJOR COLLABORATIONS**

Since 2005   Collaboration with the University of Roma Tor Vergata

Since 2005   Collaboration with the University of Roma La Sapienza

Since 2015   Collaboration with the IMDEA Networks (Spain)

2014 - 2022   Collaboration with Arizona State University.

2010 - 2020   Collaboration with the European research center IMEC

Curriculum vitae GIOVANNI GARBO [UNIPA]

● **PERSONAL INFORMATION**

Garbo, Giovanni
ORCID number: 0000-0001-8837-0214

URL for web site: https://www.unipa.it/persone/docenti/g/giovanni.garbo/

● **EDUCATION**

1990   PhD in electronic engineering, computer science and Tsince elecommunications, tutor Prof. Mario Sannino University of Palermo

1985   master's degree in electronic engineering, grade 110/110 cum laude, supervisor Prof. Giuseppe Capponi University of Palermo.

● **CURRENT POSITION**

Since 2006 –   Full professor, sector 09/F2, ING-INF03, Telecommunications University of Palermo

● **PREVIOUS POSITIONS**

2002 – 2006   Associate professor, sector 09/F2, ING-INF03, Telecommunications engineering, University of Palermo

1992 – 2002   Assistant professor, sector 09/F2, ING-INF03, Telecommunications engineering, University of Palermo

1989 – 1992   Siemens S.p.a

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

Since 1992   He has supervised several BS and MSc thesis and PhD students at the University of Palermo

- **INSTITUTIONAL RESPONSIBILITIES**

1992 – 2024   Faculty member, Engineering Faculty, University of Palermo, Italy
1992 – 2024   Member of the Faculty Committee, Engineering Faculty, University of Palermo Italy
2000 – 2002   Member of the board of directors (Consiglio di Amministrazione) of Università di Palermo, Italy
2008 – 2016   President of the Class Council of the Telecommunications Engineering Course of Studies of University of Palermo / Italy
2006 – 2009   Scientific coordinator of the Palermo Research Unit of CNIT (National Inter-University Consortium for Telecommunications.

Curriculum vitae GIUSEPPE COSTANTINO GIACONIA [UNIPA]

- **PERSONAL INFORMATION**

Giaconia Giuseppe Costantino
ORCID number 0000-0003-2457-0772

URL for web site: https://www.unipa.it/persone/docenti/g/costantino.giaconia

- **EDUCATION**

1994   PhD in Electronics Engineering Laser Lab at University of Palermo (IT) - Laser direct writing microlithography: evolution and emerging applications

1989   Master's degree in Electronics Engineering University of Palermo (IT) - Development and characterization of a laser direct writing microlithographic process

- **CURRENT POSITIONS**

Since 2020   Associate professor University of Palermo, Engineering Department

- **PREVIOUS POSITIONS**

2000 – 2005   Assistant professor, University of Palermo.

- **FELLOWSHIPS AND AWARDS**

2014   Best demo award at the ACM Wintech 2014 international workshop (workshop organized as part of the main MOBICOM conference), with the demo 'DEMO: Unconventional WiFi-ZigBee communications without gateways'.

1996 - 1999   Marie Curie Fellow (cat. 30 and cat. R - V° European Framework) Nanoelectronics Centre of Glasgow University (UK).

1994 – 1996   CNR (italian National Research Council) fellowship carried out at the University of

● **INSTITUTIONAL RESPONSIBILITIES**

Since 2017   Responsible of B.Eng. on Cybernetics Engineering

2013 – 2016   Responsible of B.Eng. And M.Eng. on Electronics Engineering

● **RELEVANT COORDINATION AND MANAGEMENT**

2016 – 2019   ASTONISH project (http://www.astonish-project.eu/): Advancing Smart Optical Imaging and Sensing for Health (on going European Project financed by ECSEL within the H2020 framework)

2010 – 2013   BEYWATCH project: Bulding EnergY WATCHer (awarded as the best ICT for energy efficiency project by EU Commission);

2007 – 2013   RETI SMART (Linea di intervento 4.1.1.1 of POR FESR Sicilia)

● **RELEVANT INDUSTRIAL EXPERIENCES ACQUIRED**
  Founder of three start-up companies directly related to the electronic skills acquired from the applied research and aiming to create job opportunities for young, vibrant and talented electronic engineers coming out from the university degrees:
  ● MICROTECH s.r.l. High-tech company, born in 1992, mainly devoted to the design and realization of Direct Laser Writing systems, suitable for pattern generators at micron and sub-micron line-width scale and laser diagnostic systems.
  ● RCMS s.r.l., ReConfigurable MicroSystems whose main mission is to design and implement high performances embedded systems, based on microprocessor, FPGA or hybrid solutions, for very fast and/or very high precision data acquisition and signal processing. Generation of patented solutions based on new ideas are also among the pursued goals.
  ● PRYSMIAN ELECTRONICS s.r.l. devoted to the generation of innovative electronics devices and systems toward the main goal to enrich electric power distribution networks with novel solutions and a full implementation of real smart energy networks.

● **MAJOR COLLABORATIONS**

STMicroelectronics (Palermo's Design Center and Catania site)
Alelco (Palermo premises)
Alenia-Marconi (Rome premises)

Curriculum vitae GIOVANNI FALCONE [UNIPA]

● **PERSONAL INFORMATION**
Family name, First name: Falcone, Giovanni
Researcher unique identifier: ORCID 0000-0002-5210-5416

URL for web site: https://www.unipa.it/persone/docenti/f/giovanni.falcone/

● **EDUCATION**

1998   PhD Mathematics Mathematisches Institut, Friedrich Alexander Universitaet Erlangen, Germany Name of PhD Supervisor Karl Strambach

1994   Master Mathematics, Dipartimento di Matematica e Applicazioni, Università di Palermo, Italy

● **CURRENT POSITION**

2019 –   Associate professor Dipartimento di Matematica e Informatica, Università di Palermo, Italy

● **PREVIOUS POSITIONS**

1999 – 2019   Position held Assistant professor, Dipartimento di Matematica e Informatica, Università di Palermo, Italy
1998 – 1999   Position held Assistant professor, Dipartimento di Matematica e Informatica, Università di Udine, Italy

● **FELLOWSHIPS AND AWARDS**

2003 – 2005   Scholarship, Wissenschaftlich Mitarbeiter Deutsche Forschungsgemeinschaft DFG STR97/9-1 Mathematisches Institut, Friedrich Alexander Universitaet Erlangen, Germany

● **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)**

2020 – 2024   Number of PhD Students 3 Dipartimento di Matematica e Informatica, Università di Palermo, Italy

● **ORGANISATION OF SCIENTIFIC MEETINGS**

2016 June   Scientific and organizing board of the 4th International Conference on Lie Groups, Differential Equations and Geometry, Modica (FP7 IRSES 317721).
2014 July   Scientific and organizing board of the 2nd International Conference on Lie Groups, Differential Equations and Geometry, Palermo (FP7 IRSES 317721).

● **INSTITUTIONAL RESPONSIBILITIES**

2018 –   Organizer of the Internal Seminar, Dipartimento di Matematica e Informatica, Università di Palermo, Italy
2023 –   Member of Department research Committee; coordinator, Dipartimento di Matematica e Informatica, Università di Palermo, Italy

● **REVIEWING ACTIVITIES (if applicable)**

2020 –   Editorial Board, Дифференциальная геометрия многообразий фигур, Kantiana University, Kaliningrad, Russia
1998–   Reviewer, Zentralblatt MATH
2021 –   Evaluator, PhD thesis, Debrecen University, Hungary
2019 –   Evaluator, PhD thesis, Cape Town University, South Africa
2015 –   Evaluator, PhD thesis, Rhodes University, South Africa

● **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

1998 –   Associated Member, Unione Matematica Italiana

Curriculum vitae STEFANO MANGIONE [UNIPA]

● **PERSONAL INFORMATION**

Family name, First name: Mangione, Stefano

Researcher unique identifier(s): ORCID 0000-0003-0926-4902

URL for web site: https://www.unipa.it/persone/docenti/m/stefano.mangione.tlc

● **EDUCATION**

2000   Master Degree in Electronics Engineering, Telecommunications major
              Faculty of Engineering, Università degli Studi di Palermo, Italy

● **CURRENT POSITION**

2001 –   Assistant Professor in Telecommunications Engineering
              Engineering Department, Università degli Studi di Palermo, Italy

● **FELLOWSHIPS AND AWARDS**

2023   Best Poster Award ACM Mobicom 2023. A Novel Intelligent Management System
              Architecture for Hybrid VLC/RF Systems in Smart Retail Environment - Best Poster Award
              Kien Trung Ngo, Stefano Mangione, Ilenia Tinnirello (University of Palermo)

2011   Best Paper Award in WiNTECH 2011 - D. Garlisi, F. Gringoli, P. Gallo, F. Giuliano, S.
              Mangione, I. Tinnirello, "MAC-Engine: a new architecture for executing MAC algorithms
              on commodity WiFi hardware", WiNTECH 2011 Workshop, Las Vegas (NV), USA, Sept.
              19, 2011.

● **INSTITUTIONAL RESPONSIBILITIES**

2023 –   Quality assurance committee for the M.Sc. course in Electronics and Telecomunications
              Engineering
2023 –   Scientific coordinator of the Palermo Research Unit of CNIT (National Inter-University
              Consortium for Telecommunications), from 2010 to 2013.
2014 – 2022   Joint faculty-student committee for the M.Sc. course in Telecommunications Engineering and
              the M.Sc. course in Electronics Engineering
2001 –   Faculty member, Engineering Department, Università degli Studi di Palermo, Italy

● **MAJOR COLLABORATIONS**

2023 –   F.Restuccia, "Federated Learning", North Eastern University
2022 –   WSENSE srl, "Signal processing for underwater acoustical communications"
2013 – 2016   Paramed s.r.l., "Methods for correction of geometric distortion in MRI"

Curriculum vitae STEFANO TOMASIN [UNIPD]

- **PERSONAL INFORMATION**

TOMASIN, Stefano:

ORCID number: 0000-0003-3253-6793:

URL for web site: http://www.dei.unipd.it/~tomasin

- **EDUCATION**

2003   PhD
      Doctoral degree obtained from University of Padova, Italy. Thesis title: "Frequency domain equalization and channel estimation for broadband wireless communications". Supervisor: Prof. Nevio Benvenuto.

1999   Master
      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.

- **CURRENT POSITION**

since 2022   Full Professor at the Department of Information Engineering (DEI), University of Padova.

- **PREVIOUS POSITIONS**

2016 – 2022   Associate Professor at the Department of Information Engineering (DEI), University of Padova.

2005 – 2016   Assistant Professor at the Department of Information Engineering (DEI) of University of Padova.

- **FELLOWSHIPS AND AWARDS**

2023   Best paper award at the EEE Wireless Communications and Networking Conference (WCNC), Glasgow, Scotland, UK, 2023.

2023   Best paper award at the International Conference on Ubiquitous and Future Networks (ICUFN 2023), Paris, France, July 2023.

2018   Best paper award at the International Conference on Ubiquitous and Future Networks (ICUFN 2018), Prague, Czech Republic, July 2018.

2018   Co-author of the best student paper award at the IEEE/ION Position Location and Navigation Symposium, Monterey, California, April 2018.

2009   Co-author of the best student paper award at the Int. Symp. Bioelectronics and Bioinformatics (ISBB2009), Melbourne, Australia, Dec. 2009.

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

since 2006   Supervising both BS and MSc thesis activity since 2006. In particular, he has supervised more than 150 thesis since 2008 at the University of Padova

2023-	Mr. Yaser Dorrazehi, started in 2023 at University of Padova, Italy, working on reflective intelligent surfaces for next generation cellular networks.
2019-2023	Mr. Alberto Rech, started in 2019 at University of Padova, Italy, working on resource allocation techniques using machine learning.
2018-2021	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".
2018-2021	Dr. Alessandro Brighente, Ph.D. in 2021 at University of Padova, Italy, with a thesis entitled "Physical Layer Techniques for mm-Wave Communications".
208-2010	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".
2005-2009	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".
Since 2010	Supervisor of 10 post-doc fellows

● **ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

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

● **INSTITUTIONAL RESPONSIBILITIES (if applicable)**

since 2019	Representative of the University Padova within the Shareholder's Assembly of the National Inter-University Consortium for Telecommunications (CNIT), since Sept. 2019.
2016-2019	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.
since 2013	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.
since 2013	Representative of the Department of Information Engineering within the Commission for Relation with the Social Partners since 2013.
2009-2011	Member of the executive board of the School of Engineering (U. of Padova), from 2009 to 2011.

| since 2013 | 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 since 2017 until now. |

● **REVIEWING ACTIVITIES (if applicable)**

since 2022	Scientific Evaluation Committee (SEC) member for the selection fo Early-Stage Researchers for PhD program within the Horizon 2020 - Marie Sk lodowska-Curie Action COFUND "UNIPhD - Eight century legacy of multidisciplinary research and training for the next-generation talents" (2022-2023).
2021	Examiner of PhD Thesis at Queen Mary University of London, UK (2021).
2021	Opponent in the PhD Defense at KTH, Stockholm (Sweeden) (2021).
2015-2019	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).
2019-2023	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.
2021	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).
2021	Guest Editor of the Special issue on Intelligent Surfaces for 6G Cellular Networks: A Holistic View, Applied Science, 2021.
2017	Guest Editor of the Special issue on Information-Theoretic Security, Entropy, 2017.
2019	Guest Editor of the Special issue on Information-Theoretic Security II, Entropy, 2019.
2019	Guest Editor of the Special issue on Physical Layer Security Solutions for 5G-and-Beyond, EURASIP Journal on Wireless Communications and Networking, 2019.
2015	Guest Editor of the Special issue on Physical Layer Security and its Applications, Proceedings of IEEE, Oct. 2015.
since 2023	Deputy Editor in Chief of IEEE Transactions on Information Forensics and Security, since Jan. 2023.
since 2020	Associate Editor of IEEE Transactions on Information Forensics and Security, since Mar. 2020.
2017-2021	Associate Editor of IEEE Transactions on Signal Processing, from Jan. 2017 to Jan. 2021.
since 2011	Associate Editor of EURASIP Journal of Wireless Communications and Networking, since 2011.

● **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

| since 2011 | Senior Member of the Institute of Electrical and Electronics Engineers (IEEE) since 2011 and member of IEEE since 1999. |

● **MAJOR COLLABORATIONS**

Qualcomm, San Diego (CA), the Polytechnic University in Brooklyn (NY), the Mathematical and Algorithmic Sciences Laboratory of Huawei in Paris (France), Huawei (Milan, Italy)

Curriculum vitae ANDREA ZANELLA [UNIPD]

● **PERSONAL INFORMATION**

Family name, First name: Zanella, Andrea

Researcher unique identifier(s) (such as ORCID, Research ID, etc. ...): orcid.org/0000-0003-3671-5190

URL for web site: www.dei.unipd.it/~zanella

● **EDUCATION**

2002	PhD in Electronic and Telecommunications Engineering
	Faculty of Engineering, Department of Information Engineering, University of Padova, IT
	PhD Supervisor: Prof. G. Pierobon
1998	Master degree in Computer Engineering
	Faculty of Engineering, Department of Information Engineering, University of Padova, IT

● **CURRENT POSITION(S)**

2019 – today	Full Professor
	Faculty of Engineering, Department of Information Engineering, University of Padova, IT

● **PREVIOUS POSITIONS**

2014 – 2019	Associate Professor
	Faculty of Engineering, Department of Information Engineering, University of Padova, IT
2003 – 2014	Assistant Professor
	Faculty of Engineering, Department of Information Engineering, University of Padova, IT
2000 – 2001	Visiting Scholar
	Department of Computer Science, University of California - Los Angels, USA

● **FELLOWSHIPS AND AWARDS**

2019	Best Paper Award, A. De Biasio, F. Chiariotti, M. Polese, A. Zanella and M. Zorzi, "A QUIC Implementation for ns-3," Workshop on Next-Generation Wireless with ns-3 (WNS3), 21 June 2019, Florence, Italy
2018	Outstanding paper award, G. Cisotto, A. V. Guglielmi, L. Badia and A. Zanella, "Classification of grasping tasks based on EEG-EMG coherence", the IEEE 20th International Conference on e-Health Networking, Applications and Services (Healthcom) 17-20 Sep. 2018, Ostrava, Czech Republic.
2017	Best student paper award, Marco Giordani, Andrea Zanella and Michele Zorzi, "Millimeter Wave Communication in Vehicular Networks: Challenges and Opportunities " International Conference on Circuits and Systems Technologies (MOCAST) Thessaloniki, Greece, 4 - 6 May 2017.
2014	Best student paper award in 2014, Francesco Guidolin, Irene Pappalardo, Andrea Zanella, Michele Zorzi, "Context-Aware Handover in HetNets," European Conference on Networks and Communications 2014, June 23/26, 2014, Bologna, Italy.
2010	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 2010

Workshop on Towards SmArt COmmunications and Network technologies applied on Autonomous Systems, 6 december 2010, Miami, Florida, USA

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)**

Doctorate candidates

2024-today	Muhammad Sohail
2023-today	Pietro Talli
2021-2024	Ahmed Lahmer
2020-2023	Andrea Bedin
2019-2022	Salman Mohebi (co-supevisor)
2019-2022	Anay Desphande
2019-2022	Federico Mason
2018-2021	Martina Capuzzo
2016-2019	Federico Chiariotti
2016-2019	Daniel Zucchetto
2014-2016	Andrea Biral
2007-2009	Francesco Zorzi
2005-2007	Elena Fasolo

Postdoctoral Fellows: more than 12

- **ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

2022	General Co-Chair of the 3rd Workshop on ICT, Sensing, and Mobility in Smart cities (ISMS)
2021	General Co-Chair of the 2nd Workshop on ICT, Sensing, and Mobility in Smart cities (ISMS), WoWMoM. [Website: http://wowmom2021.iit.cnr.it/workshops/isms-2021/]
2020	General Co-Chair of the 1st Workshop on ICT, Sensing, and Mobility in Smart cities (ISMS)
2019	TPC Chair of the International Conference on Computing, Networking and Communications (ICNC)
2018	TPC Co-Chair of the International Conference on Computing, Networking and Communications (ICNC)
2019	Publicity Co-Chair of the IEEE International conference on Modern Circuits and Systems Technologies (IEEE MOCAST)
2018	TPC Co-Chair of the IEEE International conference on Modern Circuits and Systems Technologies (IEEE MOCAST)
2017	TPC Co-Chair of the IEEE International conference on Modern Circuits and Systems Technologies (IEEE MOCAST)
2011	General co-Chair of the ISCC Workshop on multiMedia Applications over Wireless Networks (MediaWin)
2008	TPC co-Chair of the ISCC Workshop on multiMedia Applications over Wireless Networks (MediaWin)
2007	TPC co-Chair of the ISCC Workshop on multiMedia Applications over Wireless Networks (MediaWin)
2006	TPC co-Chair of the ISCC Workshop on multiMedia Applications over Wireless Networks (MediaWin)
2005	Publicity co-Chair of Wireless Personal Mobile Communications (WPMC)

- **REVIEWING ACTIVITIES**

2016 – 2020	Technical Area Editor for IEEE Internet of Things Journal
2013 – 2016	Associate Editor for IEEE Internet of Things Journal
2015 – 2024	Associate Editor for IEEE Transactions on Cognitive Communications and Networking
2016 – 2024	Associate Editor for IEEE Communications Surveys and Tutorials (JIF 20.4)
2015 – 2024	Associate Editor for Digital Communications and Networks, Elsevier
2017	Guest Editor of the S.I. "Advances in Low Power Wide Area Networks" in Wireless Communications and Mobile Computing, Hindawi
2017	Guest Editor of the S.I. "Imaging in Internet of Things" in Journal of Imaging, MDPI, ISSN 2313-433X

2016   Guest Editor of the S.I. "Smart Cities: vision and reality" in Sensor Journal, MDPI, ISSN
               1424-8220
2018 – 2024   Member of the Editorial Board of the journal Sensor, MDPI
2008 – 2014   Member of the Editorial Board of the ISRN Communications and Networking Journal

● **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**
2013 –today   Senior Member, IEEE

● **MAJOR COLLABORATIONS (if applicable)**

- Dr. Stephan Kucera, Nokia-Bell Labs
- Prof. Toktam Mahmoodi, King's College of London (UK)
- Prof. Sergio Zubelzu, Polytechnic University of Madrid (SP)
- Prof. Mehdi Bennis, Oulu University (FI)

Curriculum vitae SIMONE MULANI [UNIPD]

● **PERSONAL INFORMATION**

Family name, First name: Milani, Simone

Researcher unique identifier(s) (such as ORCID, Research ID, etc. ...): ORCID 0000-0001-8266-5839

URL for web site: https://medialab.dei.unipd.it/members/simone-milani/

● **EDUCATION**

2007   PhD in Electronics and Telecommunication Engineering
               Dept. of Information Engineering, University of Padova, Italy
               Supervisor: prof. G.A. Mian
2002   Master Degree in Telecommunication Engineering
               Dept. of Information Engineering, University of Padova, Italy

● **CURRENT POSITION(S)**

2020 – now   Associate Professor
               Dept. of Information Engineering, University of Padova, Italy

PREVIOUS POSITIONS

2017 – 2020   Assistant Professor
               Dept. of Information Engineering, University of Padova, Italy
2014 – 2020   Assistant Professor
               Dept. of Information Engineering, University of Padova, Italy
2011 – 2014   Research Associate
               Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano, Italy
2011 – 2013   Research Consulting
               Dipartimento di Ingegneria Elettrica, Gestionale e Meccanica, University of Udine, Italy
2008 – 2011   Research Associate

2007 – 2007   Research Associate
Dipartimento di Ingegneria Elettrica, Gestionale e Meccanica, University of Udine, Italy
2003 – 2005   Technical Consultant
STMicroelectronics, Agrate Brianza, Italy

- **FELLOWSHIPS AND AWARDS**

2014   Best Paper Award" at the conference EUVIP 2014
2013   "Top 10% Paper Award" at the conference MMSP 2013
2012   "Top 10% Paper Award" at the conference MMSP 2013
2011   "Carlo Offelli 2011" Award, Dept. of Information Engineering, University of Padova, Italy
2008   Francesco Carassa" Best Paper Award, GTTI 2008 Annual Meeting

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL**

2014 – 2023   PhD: 3 MS Students: 24 BS Students: 9
Dept. of Information Engineering, University of Padova, Italy

- **ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

2023   TPC for the meeting GTTI MMSP 2023 / Bressanone (BZ), Italy
2022   Organizing committee for GTTI Annual Meeting 2022 / Padova, Italy
2015   TPC for the meeting GTTI MMSP 2015 / Alleghe (BL), Italy

- **INSTITUTIONAL RESPONSIBILITIES (if applicable)**

2023 –   Member of Phd Board, Dept. of Information Engineering, University of Padova, Italy
2019 –   Member of Ethical Committee for Human Inspired Technology Center, University of Padova, Italy
2018 – 2020   Member of the IEEE SPS Regional Committee – Representative for Region 8
2018 – 2021   Member of Information Forensics and Security Technical Committee (IFS-TC) in the IEEE Signal Processing Society
2019 – 2023   Member of EURASIP Technical Area Committee on Visual Information Processing (TAC-VIP)
2017 – 2022   Member of Study Plan Commission within the Master Degree in ICT for Internet and Multimedia, Dept. of Information Engineering, University of Padova, Italy

- **REVIEWING ACTIVITIES (if applicable)**

2018 – now   Associate Editor for IEEE Transactions on Multimedia
2018 – now   Associate Editor for IEEE Transactions on Image Processing
2016 - now   Area Chair for the IEEE International Conference on Image Processing (ICIP)
2016 - now   Area Chair for the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)
2019 - now   Area Chair for the EURASIP European Signal Processing Conference (EUSIPCO)
2021 - now   Reviewer on IEEE Computer Vision and Pattern Recognition (CVPR) conference
2021 - now   Reviewer on IEEE International Conference on Computer Vision (ICCV)
2022   Member of Ph.D. Final Defense commission for University of Tampere, Finland
2021   Member of Ph.D. Final Defense commission for Politecnico di Torino, Italy
2020   Member of Ph.D. Final Defense commission for Politecnico di Milano, Italy
2020   Member of Ph.D. Final Defense commission for University of Trento, Italy
2019   Member of Ph.D. Final Defense commission for Politecnico di Milano, Italy

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

2003 - now   Member of IEEE Signal Processing Society
2003 - 2021   Member of IEEE Information Theory Society
2003 - 2021   Member of Association for the Computing Machinery
2003 - now   Member of National Inter-University Consortium for Telecommunications
(Consorzio Nazionale Interuniversitario per le Telecomunicazioni -CNIT)

- **MAJOR COLLABORATIONS (if applicable)**

Prof. Anderson Rocha, Multimedia Forensics, Universidade Estadual de Campinas, Campinas Brazil
Prof. Kannan Ramchandran, Distributed Source Coding, University fo California – Berkeley, Berkeley, Califorina, USA
Prof. Stefano Tubaro, Multimedia Forensics, Politecnico di Milano, Milano, Italy
Prof. Fernando Pereira, Point cloud compression, Istituto Superior Tecnico de Lisboa (IST Lisboa), Lisbon, Portugal
Prof. Soren Forchhammer, video coding, Danish Technical University (DTU), Copenhagen, Denmark
Prof. Marco Marcon, AR/VR, Politecnico di Milano, Milano, Italy
Prof. Roberto Rinaldo, image and video processing, University of Udine, Udine, Italy
Prof. Stjepan Picek, Digital and Multimedia Security, Radboud University, Nederland

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Curriculum vitae FEDERICA BATTISTI [UNIPD]

- **PERSONAL INFORMATION**

BATTISTI, Federica:
ORCID: 0000-0002-0846-5879

URL for web site: https://sites.google.com/view/federica-battisti/home

- **EDUCATION**

2009   PhD, thesis entitled 'Multimedia data hiding based on human perception characteristics'
              Università degli Studi Roma Tre, Rome, Italy

2006   Master in Electronic Engineering
              Università degli Studi Roma Tre, Rome, Italy

- **CURRENT POSITION**

2020 –now   Associate Professor
              University of Padova, Italy

- **PREVIOUS POSITIONS**

2005 – 2006   Research Assistant
              Tampere University of Technology (TUT), Finland
2010 – 2020   Assistant Professor
              Università degli Studi Roma Tre, Rome, Italy

2010 – now   Tutor for bachelor and master students and she has supervised 8 Ph.D. students.

● ORGANISATION OF SCIENTIFIC MEETINGS

2022	Proceeding Chair ACM International Conference on Interactive Media Experiences, ACM IMX 2022
2022	Organizer Workshop "Hyper-Realistic Multimedia for Enhanced Quality of Experience" IEEE International Conference on Multimedia and Expo, ICME 2022
2022	Grand Challenge Chair IEEE International Conference on Image Processing, ICIP2022
2023	Organiser GTTI Thematic Meeting on Multimedia Signal Processing, GTTI MMSP 2023
2023	Doctoral Consortium Chair ACM International Conference on Interactive Media Experiences, ACM IMX 2023
2023	Tutorial Chair IEEE International Conference on Multimedia and Expo, ICME 2023
2023	Plenary Chair per il 11th European Workshop on Visual Information Processing, EUVIP 2023
2023	General Chair per il 13th International Symposium on Image and Signal Processing and Analysis, ISPA 2023
2023	Technical Program Chair dell l'IEEE 25th International Workshop on Multimedia Signal Processing, MMSP2023

● REVIEWING ACTIVITIES

2022-2023	Chair of the IEEE YP Affinity Group Italy section
2020-now	Associate Editor of Frontiers in Signal Processing
2019-now	Associate Editor of IEEE Transactions on Multimedia
2018-now	Associate Editor of ELSEVIER Signal Processing: Image Communication
2017-now	Associate Editor of EURASIP Journal on Image and Video Processing

● MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2015 –now   Senior member of IEEE

● RESEARCH PROJECTS

VOLIERA - Video Odometry with Lidar and EGNSS for ERTMS Applications funded by the European Space Agency in the NAVISP-EL2-009 program (December 2019-November 2022).

ImmerSAFE - Immersive Visual Technologies for Safety-Critical Applications funded by theEuropean Union's Horizon 2020 research and innovation programme under the Marie Sklodowska-Curie grant agreement No 764951 (January 2018-July 2020).

RESISTO - Resilience enhancement and risk control platform for communication infrastructure operators funded under the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No786409 (May 2018-July 2020).

FITOPTIVIS - From the cloud to the edge - smart IntegraTion and OPtimisation Technologies for highly efficient Image and VIdeo processing Systems funded under the ECSEL Joint Undertaking programme (June 2018-June 2019).

ATENA - Advanced tools to assess and mitigate the criticality of ICT components and their dependencies over critical infrastuctures funded under the H2020 Programme (May 2016-May 2019).

ISITEP - Inter system interoperability for TETRA-TETRAPOL networks is an FP7 EU funded iniative that aims at developing procedures, technology and legal agreements to achieve a cost effective global solution for PPDR interoperability. (October 2013-October 2016).

SANDRA - Seamless Aeronautical Networking through integration of Data links Radios and Antennas, funded under the Seventh Framework Programme (2009-2013).

MINERVAA - Mid-Term Networking Technologies In-Flight and Rig Validation for Avionic Applications, funded under the Sixth Framework Programme (2007-2010).

Curriculum vitae NICOLA LAURENTI [UNIPD]

● **PERSONAL INFORMATION**

Family name, First name: **Laurenti, Nicola**

Researcher unique identifiers: ORCID **0000-0001-7592-1929**, ResearcherID **Q-6624-2019**

Date of birth:

Nationality:

URL for web site: **https://www.dei.unipd.it/~nil**

● **EDUCATION**

1999	PhD in Electrical and Telecommunication Engineering
	Department of Information Engineering, University of Padova, Italy
	PhD Supervisor: Prof. Gianfranco Cariolaro
1995	Master in Electrical Engineering
	Faculty of Engineering, University of Padova, Italy

● **CURRENT POSITION(S)**

2020 –	Associate Professor
	Department of Information Engineering, University of Padova, Italy

● **PREVIOUS POSITIONS**

2001 – 2020	Assistant Professor
	Department of Information Engineering, University of Padova, Italy
2008 – 2009	Visiting Scholar
	Coordinated Science Laboratory, Universty of Illinois at Urbana-Champaign, United States

● **FELLOWSHIPS AND AWARDS**

1999 – 2001	Research fellowship, Department of Information Engineering, University of Padova, Italy
2023	Best Paper Award at the IEEE International Balkan Conference on Communications and Networking, BalkanCom2023
2019	Best Paper Award at 14th International Conference on Underwater Networks & Systems, WUWNET'19
2018	Best Paper Award at IEEE/ION Position Location and Navigation Symposium, PLANS 2018 for Track D: "Applications to Automated, Semi-Autonomous, and Fully-Autonomous System

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)**

2006 –   3 Postdocs/ 9 PhD/ 40 Master Students
                 Department of Information Engineering, University of Padova, Italy

- **ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

2013   TPC member, IEEE LANMAN workshop
2015   TPC member IEEE ICC Workshop on Physical layer security
2015   TPC member IEEE ICC Wireless Communications Symposium
2015   TPC member IEEE GLOBECOM Workshop on Trusted Communications with Physical Layer Security
2017   TPC member ACM WiSec conference
2018   TPC member ACM WiSec conference
2019   TPC member ACM WiSec conference
2020   TPC member ACM WiSec conference

- **INSTITUTIONAL RESPONSIBILITIES (if applicable)**

2022 –   Lead of Program Design Committee for the Joint International Master Program in International Cybersecurity and Cyberintelligence, University of Padova

- **RESEARCH PROJECTS AND GRANTS (if applicable)**

2024 – 2026   Principal investigator for *NUMEROSO: Navigation using machine learning on signals of opportunity*, funded by the European Space Agency (Invitation to Tender)
2016 – 2019   Principal investigator for *MORE GOSSIP, A PLAY: More robust and enhanced GNSS Open Service Signal Integrity Protection and Authentication at the Physical Layer*, funded by the European Space Agency (Express procurement)
2014 – 2016   Principal investigator for *A GOSSIP, A PLAY: Advanced GNSS Open Service Signal Integrity Protection and Authentication at the Physical Layer*, funded by the European Space Agency (Express procurement)

2017 – 2019   Leader of research unit for *ENSPACE: Enhanced navigaztion in space*, funded by the European Commission (Horizon 2020 — Applications in Satellite Navigation — Galileo — 2017 call)
2016 – 2017   Leader of research unit for *EAST: EGNOS authentication security testbed*, funded by the European GNSS authority (Call for Tender)
2006 – 2008   Leader of research unit for *Enabling blocks for the CMOS integration of a Multi-band OFDM UWB transceiver*, funded by the Italian Ministry of Education and Research (PRIN, Nationally relevant research projects)

- **REVIEWING ACTIVITIES (if applicable)**

2020 –   Topic Editor Board, Entropy, MDPI publisher
2013 – 2014   Reviewer for Nature Communications, Nature Publisdhing Group
2001 –   Reviewer for IEEE Transactions on Communicatons, IEEE Communications Magazine, IEEE Communication Letters, IEEE Transactions on Information Forensics and Security, IEEE Transactions on Vehicular Technology, IEEE Transactions on Wireless Communicatons, IEEE Transactions on Signal Processing, IEEE Access

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

2014 –   Member, Association for Computing Machinery (ACM)
2023 –   Founding Member, De Componendis Cifris, National cryptography association, Italy

- **MAJOR COLLABORATIONS (if applicable)**

H. Vincent Poor, Physical layer security, Department of Electrical and Computer Engineering, Princeton University, United States

Yih-Chun Hu, Wireless network security, Department of Electrical and Computer Engineering, University of Illinois, United States

Mathieu Bloch, Information theoretic security, Department of Electrical and Computer Engineering, Georgia Institute of Technology, United States

Francesco Renna, Physical layer security, Faculty of Sciences, University of Oporto, Portugal

Andrea M. Tonello, Multicarrier modulation systems, University of Alpen-Adria, Klagenfurt, Austria

Marco Baldi, Information theoretic security, Dipartimento di Ingegneria dell'Informazione, Università Politecnica delle Marche, Italy

Franco Chiaraluce, Information theoretic security, Dipartimento di Ingegneria dell'Informazione, Università Politecnica delle Marche, Italy

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Curriculum vitae ROBERTO CORVAJA [UNIPD]

- **PERSONAL INFORMATION**

Family name, First name: **Corvaja, Roberto**

Researcher unique identifier(s) (such as ORCID, Research ID, etc. ...): ORCID 0000-0002-4554-9107

URL for web site: https://www.dei.unipd.it/en/telecommunications/optical-quantum-communications
https://www.dei.unipd.it/en/persona/F24EF4B59E4A7E2D3C19D4F049A3EBE0

- **EDUCATION**

1994   PhD in Electronic Engineering and Telecommunications
              Faculty of Engineering/ Department of Information Engineering/ University of Padova, Italy
              Supervisor: Prof. Gianfranco Pierobon
1990   Master degree (Laurea) in Electronics Engineering
              Faculty of Engineering/ Department of Information Engineering/ University of Padova, Italy

- **CURRENT POSITION(S)**

1994 –   Current Position
              Researcher (assistant professor) in Telecommunications
              Department of Information Engineering, University of Padova/ Italy

- **PREVIOUS POSITIONS**

2006 – 2011   Visiting Professor

Faculty of Engineering/ Department of Signal Theory and Communications, University Carlos III of Madrid/ Spain

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

1994 –   50 Master Students supervision of Final Thesis work
                Department of Information Engineering, University of Padova/ Italy

- **INSTITUTIONAL RESPONSIBILITIES (if applicable)**

1994 –   Researcher (Assistant Professor), Name of University/ Institution/ Country

- **REVIEWING ACTIVITIES (if applicable)**

2024 –   Editorial Board, Associate Editor, IET Quantum Communication
2021 – 2023   Editorial Board, Associate Editor, IEEE Open Journal on Communications
2000 –   Reviewer, IEEE

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

2017 –   Senior Member, IEEE
2000 – 2017   Member, IEEE

- **MAJOR COLLABORATIONS**

2006 –   Research collaboration / Prof. Ana García Armada, Department of Signal Theory and Communications, University Carlos III of Madrid/ Spain
2018   Sub-contractor Project ``LASERCUBE: an optical communication system for miniature satellites", Stellar Project Srl, Padova, Italy, funded by the European Spatial Agency (ESA).

Curriculum vitae LEONARDO BADIA UNIPD]

- **PERSONAL INFORMATION**
First name: **Leonardo** Family name: **Badia**
ORCID: 0000-0001-5770-1199
Date of birth: Nationality:
URL for web site: **dei.unipd.it/~badia**

- **EDUCATION**
2000   MS in Electrical Engineering, Dept of Engineering, University of Ferrara, Italy. Supervisor: prof. Michele Zorzi
2004   PhD in Information Engineering, Dept of Engineering, University of Ferrara, Italy. Supervisor: prof.Michele Zorzi

- **CURRENT POSITION**
2015-present   Associate Professor, University of Padova, Dept. of Information Engineering, Italy 2024-present Visiting Professor, IMT Lucca Institute for Advanced studies, Italy.

- **PREVIOUS POSITIONS**

2001-04	PhD student and Assistant Lecturer, University of Ferrara, Dept. of Engineering (ENDIF)
	2002-03 Visiting researcher, Royal Institute of Technology (KTH), Sweden
2004-12	Lecturer, University of Ferrara, Dept. of Engineering
2005-11	Research fellow, University of Padova, Dept. of Information Engineering (DEI) 2006-11 Assistant Professor, IMT Advanced Study Institute in Lucca
2011-15	Assistant Professor, University of Padova, Dept. of Information Engineering (DEI)

- **FELLOWSHIPS AND AWARDS**

"Abilitazione scientifica nazionale" to Full Professor in the sectors of 01/B1 (Computer science) and 09/F2 (Telecommunications)

MobiWac 2005 conference, Best Paper Award CAMAD 2006 conference, Best Paper Award IEEE Globecom 2007, Wireless Networks Symposium, Best Paper Award IEEE CAMAD 2015, Best Paper Award

IEEE Healthcom 2018, Best Paper Award

IEEE UEMCON 2020, Best Paper Award in the Network Security and Robotics category IEEE COMNETSAT 2022, Best Paper Award

IEEE WCNC 2023, Best Workshop Paper Award IEEE BalkanCom 2023, Best Paper Award IEEE CSR 2023, Best Student Paper Award

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2004 –	Supervised 10 PhD students and more than 50 MSc. Students. in the Universities of Ferrara, Pisa, IMT Lucca, and the University of Padova

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2009 -	TPC chair: European Wireless 2009, Aalborg, Denmark; IEEE Broadband Wireless Access 2011, Houston, TX; IEEE CAMAD 2013, Berlin, Germany, European Wireless 2015, Budapest, Hungary; European Wireless 2016, Oulu, Finland; European Wireless 2017, Dresden, Germany.

- **INSTITUTIONAL RESPONSIBILITIES**

2006 –2010	Faculty member, IMT Lucca Institute for Advanced studies, ItalyFaculty member, University of Padova, Italy

- **REVIEWING ACTIVITIES**

Active reviewer/TPC member for major conferences in the area of Communications and networking (Infocom, Globecom, ICC, Mobicom…)Editor for Wireless Communications and Mobile ComputingEditor for IEEE Transactions on CommunicationsEditor for IEEE Wireless Communications Letters

- **• MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

2004 –	IEEE Member, (senior member since 2012) and Communications Society
2004 –	Association for Computing Machinery

- **MAJOR COLLABORATIONS**

Prof. Marco Levorato at University of California Irvine, United States. Official collaboration and visiting periods. Research about mathematical models of domain adaptation in edge computing.

Prof. Frank Fitzek at Technical University of Dresden, Germany. Official appointment as visiting professor and multiple visiting periods. Research about quantum communications, security aspects via game theory.

Dr. Andrea Munari at German Aerospace Center (DLR), Munich. Official appointment as visiting professor and multiple visiting periods. Research on mathematical models for age of information and edge computing.

Dr. Paolo Dini at Centre Technology for Telecommunications of Catalunya. Official appointment as visiting researcher. Analysis of energy consumption in federated learning via game theory.
Prof. Massimo Riccaboni at IMT Lucca for Advanced Studies, Italy. Official appointment as visiting professor. Research about game theory and mathematical models.
Dr. Vincenzo Mancuso at IMDEA Networks, Spain. Multiple visiting periods about game theoretic models for edge computing.

Curriculum vitae CESARE ROSETI [UNIRM2]

● **PERSONAL INFORMATION**

Family name, First name: Roseti Cesare
Researcher unique identifier: ORCID ID 0000-0003-0232-487X

URL for web site: http: www.tlcsat.uniroma2.it

● **EDUCATION**

2009	Master in Homeland Security Alma Mater Studiorum University of Bologna
2007	PhD in "Sistemi e Tecnologie per lo Spazio" University of Rome Tor Vergata Topics: Enhancing Transport Layer in Satellite Systems: Design and Development of an Emulation Platform
2003	M. Sc. In Telecommunications Engineering cum laude University of Rome Tor Vergata Topics: "Prestazioni di protocolli TCP su sistemi via satellite"

● **CURRENT POSITIONS**

2022 – current Associate Professor (ING-INF/05) Electronic Engineering, University of Rome "Tor Vergata"
2020 – current University Spin-Off Co-Founder and R&D Head Manager   RomARS Srl, via Urbino 31, Rome, Italy

● **PREVIOUS POSITIONS**

2012 – 2022 Assistant Professor Electronic Engineering, University of Rome "Tor Vergata"
2012 – 2023 Researcher Consorzio Interuniversitario NITEL

● **FELLOWSHIPS AND AWARDS**

2003	Trainee (Supervisor: Prof. Mario Gerla). Computer Science Department , University of California "Los Angeles" (UCLA) - Network Research Laboratory
2006	Stagier (Supervisor: Mr. Erling Kristiansen) European Space Agency (ESA). European Space Research and Technology Centre European Space Agency Keplerlaan 1 - P.O.Box 299, NL-2200 AG Noordwijk, The Netherlands.On-board Software Section in the Software System Division.
2008	Research Fellowship (ING-INF/03) University of Rome "Tor Vergata". Research topic: "Design of a Telecommunication Infrastructure for Telemedicine applications"

2009 – 2011	Research Fellowship (ING-INF/03) University of Rome "Tor Vergata". Research topic: "Setup of heterogeneous networks for safety applications in public transportations"
2011 – 2012	Research Fellowship (ING-INF/03) University of Rome "Tor Vergata". Research topic: "Development of Applications and Services for heterogeneous telecommunications networks and performance optimization"
2007	Best Paper Awards for PhD category at the "International Workshop on Satellite and Space Communication" 2007
2010	Awarded with "Premio Innovazione Aziendale 2009 Telespazio-Finmeccanica" with the proposal "Local key synchronization and generation for security in satellite Communications".
2017	Best Paper Award at the "8th International Conference on Data Communication Networking (DCNET/ICETE)", 2017, with the paper "Feasibility of 5G Services Over Ka-Band AthenaFidus Satellite - A Study on Ka-band Frequency Use for 5G based Applications Over Satellite"
2018	Best Paper Award at the "2018 International Symposium on Networks, Computers and Communications", with the paper "TCP Wave estimation of the optimal operating point using ACK trains"

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2019 – 2022	Supervisor of 1 PhD student, 35° cycle of the "PhD in Electronics Engineering" University of Rome "Tor Vergata".
2021 – current	Tutor of 2 "progetti formativi e di orientamento", ART.4, COMMA 2 DEL D.M. N°142 DEL 25 MARZO 1998, University of Rome "Tor Vergata".
2021 – 2022	Supervisor of 1 Research Fellow programme (Art. 22 della legge 30 Dicembre 2010 N.240) In the frame of the project Sistemi per il Monitoraggio dei Terremoti (Lazio Innova - CUP: E84G2000013000), University of Rome "Tor Vergata".

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2012	2012 IEEE First AESS European Conference on Satellite Telecommunications (ESTEL), Roma, Italia - Chair della Sessione #13 "Advanced Circuits and Devi- ces, Antenna Technologies"
2014	TSP 2014 : 37th International Conference on Telecommunications and Signal Processing, Berlin, Germany - Chair of P01: Telecommunication Systems
2015	3rd International Black Sea Conference on Communications and Networking, CONSTANTA, ROMANIA - Session Chair of S12 "Wireless Access and Net- working"
2016	DCNET2016,InternationalConferenceonDataCommunicationNetworking- Lisbona (Portogallo) - Session Chair della ICETE Session 8 "Mobile & Ubiqui- tous Communication Networks"
2017	TPC CHAIR of IWUAS 2017: 1st International Workshop on Unmanned Ae- rial Systems, Workshop of the 9th International Conference on Wireless and Satellite Systems (WiSATS 2017, formerly PSATS), July 24-25, 2017 | OXFORD, GREAT BRITAIN. http://www.psats.eu/2017/show/IWUAS
2018	Local CHAIR of the International Symposium on Networks, Computers and Communications, 19-21 June 2018 -Rome - Italy.

2018	The 2018 International Symposium on Networks, Computers and Communications, Rome, Italy, June 19-21, Session Chair "Satellite Communications and Networking II"
2019	Track Chair - "Satellite Communications Networks" Track of the 2019 Interna- tional Symposium on Networks, Computers and Communications, Istanbul , Turchia, 18-20 June.
2019	Participant at the Technical Program Committee of the "International Symposium on Networks, Computers and Communications 2019", Istanbul - Turkey dal 18-06-2019
2019	ORGANISATION COMMITTEE CHAIR at the "IEEE International Symposium on Advanced Electrical and Communication technologies" ISAECT 2019, Rome
2019	Participant at the Technical Program Committee of the "International Symposium on Networks, Computers and Communications 2020", Montreal - Canada
2020	"Advances in Communications and Networking" SESSION CHAIR at "International Symposium on Networks, Computers and Communications 2020", Montreal - Canada
2020	Satellite Communication Networks TRACK CHAIR at "International Symposium on Networks, Computers and Communications 2020", Montreal - Canada
2021	Satellite Communication Networks TRACK CHAIR at "International Sympo- sium on Networks, Computers and Communications 2021", Dubai - UAE
2021	Editor of Frontiers in Space Technologies, Electronic ISSN: 2673 - 5075
2022	Satellite Communications and Space Internet TRACK CHAIR at "Internatio- nal Symposium on Networks, Computers and Communications 2022", Shenz- hen - China dal 19-07-2022 al 22-07-2022

• **INSTITUTIONAL RESPONSIBILITIES**

2012 – current	Graduate Student Advisor of more than 50 thesis, University of Rome Tor Vergata, Italy
2016	Member of 1 Committee for the final PhD exam; Dipartimento di Ingegneria dell'Informazione e Scienze Matematiche dell'Università degli Studi di Siena.
2013	Internal Expert for the Esami di Stato per Ingegneri, University of Rome Tor vergata. Participation to the committee of the PhD programme in Electronic Engineering, University of Rome Tor Vergata, A.A. 2013 - Cycle: XXIX.
2014 – 2015	Member of the professor committee Master di II° livello in "System Engineering", University of Rome Tor Vergata, Italy 2020– 2023 External Reviewer of 4 PhD thesis.

• **REVIEWING ACTIVITIES**

Reviewer of some ICT conferences and journals, among which: IEEE Transactions on Vehicular Technology International Symposium on Communication Systems, Networks & Digital Signal Processing (CSNDSP 2008), IEEE Communication Magazine, IEEE Globecom, Computer Networks, Wireless Networks book (Ed. Springer), Personal Satellite Services (PSAT), IEEE Wireless Communications Magazine, IEEE Access

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Curriculum vitae GIUSEPPE BIANCHI [UNIRM2]

● **PERSONAL INFORMATION**

Bianchi, Giuseppe:

Researcher unique identifier(s) (such as ORCID, Research ID, etc. ...): https://orcid.org/0000-0001-7277-7423

URL for web site: http://netgroup.uniroma2.it/faculties/giuseppebianchi/

- **EDUCATION**

1991	Post-Laurea specialization degree in Information Technology, CEFRIEL
1990	Laurea degree, Electronic Engineering (math/physics track), Politecnico di Milano

- **CURRENT POSITION(S)**

2007-today	Full professor, Faculty of Engineering, Univ. Roma Tor Vergata
2020+	Technical/Scientific Committee Chair for security assessment in two CNIT initiatives
2016+:	Honorary Chair Professor, National Taiwan University of Science & Technology
2008-2013:	Scientific director of CNIT research Unit Roma Tor Vergata
2016-today:	Scientific director of CNIT research Unit Roma Tor Vergata

- **PREVIOUS POSITIONS**

2004-2006: Associate Professor, Faculty of Engineering, Univ. Roma Tor Vergata

1998-2003: Associate Professor, Faculty of Engineering, Univ. Palermo

1993-1998 Assistant Professor, Politecnico di Milano

1991-1993 Researcher, CEFRIEL Milano

- **FELLOWSHIPS AND AWARDS**

Large (>2M€) international project as PI/coordinator	2015-2017: General Coordinator, EU project H2020-BEBA (on software defined networking), EU Obj. ICT-05 (Future Networks), 6 partners, total grant ~2.6M€, own unit grant ~700K€. 2015-2017: Technical Coordinator, EU project H2020-SCISSOR (on security in SCADA / smart grids), Obj. ICT-32 (ICT security), 9 partners, total grant ~4M€, own unit grant ~550K€. 2010-2013: General Coordinator, EU STREP project FP7-FLAVIA (on programmable wireless); Obj. 1.1 (network of the Future), 11 partners, total grant ~3.9M€, own unit grant ~800K€ 2010-2013: Scientific Coordinator, EU IP project FP7-DEMONS (on distributed and cooperative network monitoring for security, EU objective 1.4 (Trustworthy Internet), 13 partners, total grant ~5.6M€, own unit grant ~700K€ 2008-2010: Technical Coordinator, EU STREP project FP7-PRISM (on privacy-preserving network monitoring), EU objective 1.4 (Trustworthy Internet), 9 partners, total grant ~2.3M€, own unit grant ~600K€ 2006-2008: General Coordinator, EU STREP Project FP6-DISCREET (privacy in smart environments), EU objective 1.4 (Trustworthy Internet), 10 partners, total grant ~2.4M$, own unit grant ~450K€

| **Other Grants & Projects** | **International smaller scale coordinated projects** |

International smaller scale coordinated projects
- 2014-2016: EU CIPS CI2C, (on cloud in critical infrastructures) , CO-PI with M.C. Brugnoli ICT4PEOPLE CNIT unit, 5 partners, total grant ~450K€, own unit grant ~200K€

International projects (as proponent/research unit coordinator)
- 2019-2022: EU H2020 project SPARTA (on ICT security), unit leader, own unit grant ~250K€
- 2018-2020: EU H2020 DS-8 project BPR4GDPR (on GDPR compliance and data protection), unit leader, own unit grant ~400K€
- 2017-2019: EU H2020 5G-call project 5G-PICTURE (on programmable data planes for 5G), unit leader, own unit grant ~450K€
- 2015-2017: EU H2020 DS-2 project RECRED (on access control and digital identities), unit leader, own unit grant ~450K€
- 2015-2017: EU H2020 5G-call project FLEX5GWARE (on reconfigurable wireless interfaces), unit leader, own unit grant ~270K€
- 2016-2018: EU H2020 IoT-call project SYMBIOTE (on interoperability of IoT platforms), unit leader, own unit grant ~500K€
- 2008-2011: EU STREP project FP7-PERIMETER (on user centric networking, EU objective 1.6 (experimentally driven research on future internet)
- 2004: ESA QoS-DVB-RCS (QoS in satellite systems DVB-RCS)
- 2001-2003: EU ITEA project POLLENS (on Open, Light, Legible & Efficient Network Services)

Participant to projects as research collaborator (list restricted to recent and related to call)
- 2020-2022: collaborator, EU H2020 5G-LOCUS project (leading 5G localization security and privacy activities); 2015-2017: collaborator, EU H2020 FIRE project WISHFUL (on wireless reconfigurable testbeds); 2015-2017: support to the coordinator, EU H2020 5G-call project SUPERFLUIDITY (on reconfigurable virtualized 5G core network)

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

Group leadership
- **5Gsec @ Tor vergata** – 5G security team merging competences from classical VAPT (with personnel certified offensive security - OSCP and OSCE) with the competences required for wireless/5G security, including expertise on Air Interface assessment via software radio
- **Netprog @ Tor Vergata** - Network programmability group focusing on programmable HW, SW acceleration, smart NICs, programmable switches;

Thesis advisor:
- More than **200 master thesis** since 1991
- **19 PhD students** graduated so far
- Currently advising/co-advising **8 PhD students**, on topics including network monitoring, HW security, 5G air interface security, security assessment, plusother networking-oriented topics (i.e., not security specific)

- **ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

Conference/Workshop General/Technical Chairing (only major/recent ones)

2021	IEEE Int. Conf. on Sensing, Communication and Networking (SECON), General Chair
2019	IEEE Int. Conf. on Sensing, Communication and Networking (SECON), tech. program chair
2018	IEEE High Performance Switching and Routing, Bucharest, technical program chair
2018	IEEE International Teletraffic Conference (ITC 30), Wien, technical program chair
2018	IEEE IEEE Wireless Communications and Networking Conference, track chair, barcelona
2016-2017:	1st and 2nd int. INFOCOM Workshop on Software-Driven Flexible and Agile Networking, workshop co-founder and general co-Chair
2015, 11th	ACM CoNext, General co-Chair
2014, 33rd	IEEE Infocom, Technical Program Chair

- **INSTITUTIONAL RESPONSIBILITIES**

2020+ Technical/Scientific Committee Chair for security assessment in two CNIT initiatives

2016+: Honorary Chair Professor, National Taiwan University of Science & Technology

2008-2013 and 2016-today: Scientific director of CNIT research Unit Roma Tor Vergata

2012-2017: Member of GTTI Board

2014-2016: Member of CNIT executive committee (Consiglio di amministrazione)

2010-2016: Chair of the Bachelor/Master Programme in Internet engineering (formerly Telecommunications engineering) Univ. Roma Tor Vergata

2008-2013: Member of CNIT Scientific Board

2008-2010: Chair of the PhD Programme in Telecommunications and microelectronics, Univ. Roma Tor Vergata

Research project evaluation

For Italy: MIUR (Ministry of Research), multiple individual universities
For Singapore: A-STAR, NRF; for France: ANR (French National Agency for Research); for Holland (NOW); for Ireland: Science Foundation Ireland; for Austria: Austria Science Fund

- **REVIEWING ACTIVITIES**

Area/Associate Journal Editor

2016-today: IEEE Transactions on Network and Service Management

2011-2016: IEEE Transactions on Wireless Communications (area editor)

2010-2014: IEEE Transactions on Networking

2008-today: Elsevier Computer Communications

Technical Program Committee Member for more than 50 conferences in the last 10 years
Including ACM SIGMETRICS, IEEE INFOCOM, IEEE Comp. Network Security, IEEE ICC, IEEE GLOBECOM, ACM MOBICOM, ACM CONEXT CYCON, IEEE DYSPAN, IFIP PERFORMANCE, IEEE WoWMoM, etc

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Curriculum vitae GIACOMO VERTICALE [POLIMI]

- **PERSONAL INFORMATION**

Family name, First name: Verticale Giacomo

Researcher unique identifier(s) (such as ORCID, Research ID, etc. ...): ORCID 0000-0001-7508-9706, Scopus Author ID 6507322481, ResearcherID F-6536-2010

URL for web site: https://verticale.faculty.polimi.it/

● EDUCATION

2003   PhD in Electronics and Communications Engineering
              Politecnico di Milano, Italy
              Advisor prof. Maurizio Decina
1998   Master in Telecommunications Engineering
              Politecnico di Milano, Italy

● CURRENT POSITION(S)

2019 –   Associate Professor
              Dept. of Electronics, Information and Bioengineering, Politecnico di Milano, Italy

● PREVIOUS POSITIONS

2005 – 2019   Assistant Professor
              Dept. of Electronics, Information and Bioengineering, Politecnico di Milano, Italy
2003 – 2004   Research assistant
              Dept. of Electronics, Information and Bioengineering, Politecnico di Milano, Italy
1998 – 2001   Junior Researcher
              CEFRIEL Research Center, Italy

● FELLOWSHIPS AND AWARDS

2009-2017   3 Best Paper Award, 1 Best Runner-up Paper Award

● SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)

2005 – 2024   2 Postdocs, 5 PhD students, 50+ Master students
              Dept. of Electronics, Information and Bioengineering, Politecnico di Milano, Italy

● ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)

2021   TPC Co-chair IEEE DRCN (Design of Reliable Communication Networks), Italy, 100
              participants
2018   TPC Chair of IEEE Globecom, Symposium on Smart Grid and Powerline Communications,
              UAE 600 participants

● INSTITUTIONAL RESPONSIBILITIES (if applicable)

2023   Member of PhD Committee; Scuola Superiore Sant'Anna, Italy
2023   Member of PhD Committee; Warsaw University Of Technology, Poland

● REVIEWING ACTIVITIES (if applicable)

2017 – 2021   Associate editor, IEEE Access, guest editor of two special issues
2020   Grant Proposal Reviewer, Swiss National Science Foundation.
2017   Grant proposal reviewer, National Science Center, Poland.
2014   Member of the evaluation committee. Autorità per l'energia elettrica il gas ed il sistema

idrico (AEEGSI).

Reviewer and TPC Member for many flagship conferences in the area of computer networks, like IEEE Globecom, ICC; and regular reviewer for Class A Journals like Transactions on Network and Service Management, Elsevier Computer Networks

● **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

2023 –   Founding Member, De Componendis Cifris, Italy
2002 –   Member, ACM
1999 –   Member, IEEE

● **MAJOR COLLABORATIONS (if applicable)**

2010 – 2013 Visiting Professor, Tongji University, Shanghai

Curriculum vitae GUIDO MAIER [POLIMI]

● **PERSONAL INFORMATION**

Maier, Guido Alberto

Researcher unique identifier: ORCID 0000-0001-6103-435X, Scopus Author ID 7201409097:

URL for web site: http://maier.faculty.polimi.it/

● **EDUCATION**

2000   PhD: Telecommunication Engineering
        Politecnico di Milano (Italy)
        <u>Name of PhD Supervisor: Achille Pattavina</u>
1995   Master: Ingegneria Elettronica e delle Comunicazioni
        Politecnico di Milano (Italy)

● **CURRENT POSITION(S)**

2015 –   Current Position
        Associate Professor
        Department of Electronics, Information and Bioengineering (DEIB), Politecnico di Milano, Milan, Italy
2016 –   Current Position
        Co-Founder, CEO
        SWAN networks, Spin-off of Politecnico di Milano, Italy

● **PREVIOUS POSITIONS**

2006 – 2014   Assistant Professor
        Department of Electronics, Information and Bioengineering (DEIB), Politecnico di Milano, Milan, Italy

2005 – 2006	Head of the Optical Networking Laboratory
	CoreCom (research consortium supported by Pirelli and Politecnico di Milano), Milan, Italy
1995 – 2004	Researcher
	CoreCom (research consortium supported by Pirelli and Politecnico di Milano), Milan, Italy

● FELLOWSHIPS AND AWARDS

| 2021 | National Scientific Qualification to Function as Full Professor In Italian Universities ("Abilitazione Scientifica Nazionale - Prof. Ordinario") |
| 2008 | Elevated to IEEE Senior Member |

● SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)

2012 – current 6 PhD Students in Information Technologies, Department of Electronics, Information and Bioengineering (DEIB), Politecnico di Milano, Milan, Italy

1999 – current (estimated) 60 Master Students, Master in Telecommunications Engineering, Politcnico di Milano, Italy

● ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)

2014	TPC chair of NOC 201, Milan, Italy
2019	TPC chair of IEEE HPSR 2019, Xi'An, China
2020	General Chair DRCN 2020, Milan, Italy
2021	General Chair DRCN 2020, Milan, Italy
2022	General Chair IEEE NetSoft 2022, Milan, Italy

● INSTITUTIONAL RESPONSIBILITIES (if applicable)

2018 – current	Member of the Scientific Council of CoRiTeL (Ericsson Research Consortium on Telecommunications).
2017 – 2023	Member of the Department Board of DEIB, representing the Telecommunication Section.
2018 – 2019	The Agency for Science and Higher Education of Croatia has appointed him as a member of the expert panel for the re-accreditation of the Faculty of Electrical Engineering and Computing, University of Zagreb

● REVIEWING ACTIVITIES (if applicable)

2015 – current Member of the editorial board of Optical Switching and Networking (Elsevier, i.f. 1.9)

● MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)

1998 – current Member, IEEE Communications Society

● MAJOR COLLABORATIONS (if applicable)

Sebastian Troia, Assistant Professor, Department of Electronics, Information and Bioengineering (DEIB), Politecnico di Milano, Milan, Italy
Achille Pattavina, Full Professor, Department of Electronics, Information and Bioengineering (DEIB), Politecnico di Milano, Milan, Italy

Curriculum vitae DANILO ARDAGNA [POLIMI]

- **PERSONAL INFORMATION**

Danilo, Ardagna

ORCID: https://orcid.org/0000-0003-4224-927X

URL for web site: https://ardagna.faculty.polimi.it

- **EDUCATION**

2004	PhD
	Computer Engineering, Politecnico di Milano, Italy
	Prof. Chiara Francalanci
2000	Master
	Computer Engineering, Politecnico di Milano, Italy

- **CURRENT POSITION(S)**

2014 –	Associate Professor
	Dipartimento di Elettronica e Informazione, Politecnico di Milano, Italy

- **PREVIOUS POSITIONS**

2006 – 2014	Assistant Professor
	Dipartimento di Elettronica e Informazione, Politecnico di Milano, Italy
2004 – 2006	Assistant Professor
	Dipartimento di Elettronica e Informazione, Politecnico di Milano, Italy
2004 – 2006	Post-Doc Researcher
	Dipartimento di Elettronica e Informazione, Politecnico di Milano, Italy

- **FELLOWSHIPS AND AWARDS**

2022 – 2023   Included in the World's Top 2% Scientist ranking (according to "Updated science-wide author databases of standardized citation indicators)

2016   *D. Ardagna*, S. Bernardi, E. Gianniti, S. Karimian Aliabadi, D. Perez-Palacin, J. I. Requeno. Modeling Performance of Hadoop Applications: A Journey from Queueing Networks to Stochastic Well Formed Nets. 16th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP 2016) Proceedings. 614-629. Granada, Spain. 2016. **Best paper award**

2015   A. Evangelinou, M. Ciavotta, G. Kousiouris, *D. Ardagna*. A Joint Benchmark-Analytic Approach For Design-Time Assessment of Multi-Cloud Applications. In Cloud Forward (CF2015) Proceedings. 67- 77. Pisa, Italy. 2015. **Best collaboration paper award** (European projects track)

2022   **Google Cloud for Education** May 2022

2013   **Windows Azure Research Pass** October 2013.

2014   **AWS in Education research grant** March 2014.

2016   **IBM SUR Grant** October 2016. Joint work with Prof. Cristina Silvano and Prof. Letizia Tanca. P8 based cluster for Big Data research

2010   **IBM Faculty Award**

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)**

2010 –   7 Postdocs, 9 PhD students, 70+ Master Students
             Computer Engineering, Politecnico di Milano, Italy

- **FUNDED PROJECTS**

2021 –   **Coordinator of** the AI-SPRINT H2020 project for the development of a design and runtime framework to support the design and operation of AI applications in computing continua with performance, security and privacy guarantees (**5mln euros** over 3 years, **1.1mln euros** allocated to my research unit).

2021 –   Participation to the LIGATE EURO-HPC research project at Politecnico di Milano. Develop performance models and Bayesian optimization methods for drug discovery application optimization in HPC clusters.

2020 – 2021 **Coordinator for Politecnico di Milano research unit** for the TETRAMAX ANDREAS project involved in the design of GPU scheduling policies for deep learning applications (**75k euros** over 10 months, **25k euros** allocated to my research unit)

2017 – 2019   **Coordinator for Politecnico di Milano research unit** for the ATMOSPHERE H2020 project involved in the performance modelling and prediction of container based and GPU based applications (**1.5mln euros** over 2 years, **180k euros** allocated to my research unit)

2016 – 2018 Participated to DOSSIER-Cloud Twinning project, providing expertise on Cloud services, resource and energy management for large scale data centres and big data systems. **Proposal co-editor** (**520k euros** over 3 years, **140k euros** allocated to my research unit)

2016 – 2017 **Coordinator for Politecnico di Milano research unit** for the EUBRA-BIGSEA H2020 project involved in the performance analysis and definition of run time management policies of Big Data and computing intensive applications (**1.5mln euros** over 2 years, **240k euros** allocated to my research unit)

2015 – 2018   **Coordinator for Politecnico di Milano research unit** for the DICE H2020 project on model driven design, quality assessment, and optimization of Data-Intensive applications. Standardization leader and Ethics issue manager for data privacy (**4mln euros** over 3 years, **530k euros** allocated to my research unit)

2016 – 2017   **Coordinator for Politecnico di Milano research unit** for the UrbanMob LISA Cineca project on development of urban mobility applications with data and performance quality

2012 – 2015 Participated to MODAClouds IP research project at Politecnico di Milano on design and run-time management of applications targeting multiple Clouds. Developing design-time exploration with performance and availability guarantees. **WP Leader, proposal co-editor** (**9mln euros** over 3 years, **780k euros** allocated to my research unit)

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2023   **Tutorials Co-chair**, ACM SIGMETRICS 2023 Orlando, Florida, USA. 150 participants
2021   **General Chair**, IFIP WG 7.3 Performance 2021, Milan, Italy. 150+ partipants (online)
2020   **General Chair**, IFIP WG 7.3 Performance 2020, Milan, Italy. 200+ participants (online)
2015   **General Chair**, ICGreen 2015, Milan, Italy. 30 participants

- **INSTITUTIONAL RESPONSIBILITIES**

2023 –   Member of the PhD Board for the Computer Science and Engineering Program at Politecnico di Milano
2022 –   Member of the European Open Ecosystem for Research and Innovation (EGI) Working Group on Artificial Intelligence for the Department of Electronics, Information and Bioengineering of Politecnico di Milano
2022 –   Executive Board member of the Italian Computing and Data Infrastructure (ICDI) Working

Group for the Department of Electronics, Information and Bioengineering of Politecnico di Milano

- **REVIEWING ACTIVITIES (if applicable)**

2022 – 2023	Member of the PhD Applications Evaluation Committee for the Computer Science and Engineering Research Area at Politecnico di Milano
2021 – 2022	Member of the evaluation committee for the assessment of RTD-B candidates to Associate Professor role Promotion at Politecnico di Milano
2015 – 2018	Member of IBM/POLIMI Collaborative Innovation Center on Big Data Analytics
2024	Expert Reviewer, European Commission, EuroHPC project OPTIMA (Optimizing Industrial Applications for Heterogeneous HPC systems)
2022	Expert Reviewer, European Commission, EuroHPC project OPTIMA (Optimizing Industrial Applications for Heterogeneous HPC systems)
2022	Expert Reviewer, European Commission, H2020 Center of Excellence project POP2 (Performance Optimisation and Productivity 2)
2019	Expert Reviewer, SPEC 2019 Award program committee
2019	Expert Reviewer, Barcelona Computing Center Stars program evaluator and chair of the evaluators group, Spain
2017	Expert Reviewer, European Commission, ERC Consolidator grants
2016	Expert Reviewer, Netherlands Research Council for the Engineering and Applied Sciences Executive Board
2015	Expert Reviewer, Netherlands Research Council for the Engineering and Applied Sciences Executive Board

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

2023 –	IEEE Senior Member

- **MAJOR COLLABORATIONS (if applicable)**

2017 – 2020	Postdoctoral research advisor for Dr. Marco Lattuada (R&D STMicroelectronics)
2018 – 2019	Postdoctoral research advisor for Dr. Eugenio Gianniti (R&D Free2move eSolutions)
2017 – 2018	Postdoctoral research advisor for Dr. Enrico Barbierato (RTD-A, Università Cattolica)
2016 – 2017	Postdoctoral research advisor for Dr. Athanasia Evangelinou (European Commission Officer, HPC research unit)
2012 – 2016	Postdoctoral research advisor for Dr. Michele Ciavotta (Associate Professor, Università Milano Bicocca)

Curriculum vitae SEBASTIAN TROIA [POLIMI]

- **PERSONAL INFORMATION**

Family name, First name: TROIA, SEBASTIAN

Researcher unique identifier(s) (such as ORCID, Research ID, etc. ...): ORCID (https://orcid.org/0000-0002-4712-3767), SCOPUS (57194432326)

URL for web site: http://troia.faculty.polimi.it/

- **EDUCATION**

2020   PhD
        Telecommunication Engineering/ Dipartimento di Elettronica, Informazione e Bioingegneria/
        Politecnico di Milano, Italy
        Name of PhD Supervisor: Guido Maier
2017   Master
        Telecommunication Engineering/ Dipartimento di Elettronica, Informazione e Bioingegneria/
        Politecnico di Milano, Italy

- **CURRENT POSITION(S)**

2022 – present   Assistant Professor
        Telecommunication Engineering/ Dipartimento di Elettronica, Informazione e Bioingegneria/
        Politecnico di Milano, Italy

- **PREVIOUS POSITIONS**

2020 – 2021   Post-Doc Researcher
        Telecommunication Engineering/ Dipartimento di Elettronica, Informazione e Bioingegneria/
        Politecnico di Milano, Italy

- **FELLOWSHIPS AND AWARDS**

2022 – 2023   Fulbright Scholarship/ Fulbright association U.S.-Italy/ Italy
2020   Best doctoral thesis in Information Technology "Springer Award"/ Politecnico di Milano/
              Italy

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2022 – present   2 PhD Students
        Telecommunication Engineering/ Dipartimento di Elettronica, Informazione e Bioingegneria/
        Politecnico di Milano, Italy
2017 – present   20 Master Students
        Telecommunication Engineering/ Dipartimento di Elettronica, Informazione e Bioingegneria/
        Politecnico di Milano, Italy

- **REVIEWING ACTIVITIES**

2022 – present   Editorial Board, ELSEVIER Computer Networks
2018 – present   Reviewer, IEEE Transactions on Communications, IEEE Transactions
                 on Networking, IEEE Journal on Selected Areas in Communications
                 (JSAC), International Journal of Distributed Sensor Networks, IEEE
                 Internet of Things Journal, IEEE Transactions on Network Science and
                 Engineering, IEEE Transactions on Network and Service Management,
                 IEEE Intelligent Transportation Systems Transactions, IEEE Open
                 Journal of the Communications Society, IEEE Access, Elsevier Optical
                 Fiber Technology, Elsevier Computer Networks, Elsevier Optical
                 Switching and Networking, Springer Photonic Network
                 Communications, MDPI Machine Learning and Knowledge Extraction,
                 IEEE INFOCOM workshops, IEEE ICC, IEEE HPSR, DRCN, Nana,
                 ONDM, CNSM, GLOBECOM
2022 – present   Evaluator, Fulbright association U.S.-Poland/ Poland

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

2018 – present   Member of the Institute of Electrical and Electronics Engineers (IEEE), IEEE Communications Society (ComSoc), Software Defined Networks Community, and IEEE Young Professionals. Member of the CNIT (National Inter-University Consortium for Telecommunications), Politecnico di Milano section. Member of Coritel (Research Consortium on Telecommunications), Politecnico di Milano section.

- **MAJOR COLLABORATIONS**

   Prof. Andrea Fumagalli, Tianliang Zhang, Nathan Ellsworth, Study of monitoring techniques on telecommunications networks, The University of Texas at Dallas, Dallas, USA

   Prof. Marco Ru-ni, Dr. Frank Slyne, Study of techniques and algorithms in the field of: "Optical Spectrum as a Service (OSaaS)", Trinity College Dublin, Dublin, Ireland

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Curriculum vitae WALTER TIBERTI [UNIVAQ]

- **PERSONAL INFORMATION**
  Family name, First name: **Tiberti, Walter**
  Researcher unique identifier(s) (such as ORCID, Research ID, etc. ...): **ORCID: 0000-0002-4890-5031**

   URL for web site: **https://www.disim.univaq.it/WalterTiberti**

- **EDUCATION**

2020   PhD – Thesis title: "*A Security Framework for Wireless Sensor Networks*"
              Dipartimento di Ingegneria Scienze dell'Informazione e Matematica, Università degli studi dell'Aquila, Italia
              Supervisor: Luigi Pomante
2016   Master Degree in Computer Engineering - Thesis title: "*Schemi di crittografia per WSN: Sviluppo di approcci innovativi*" (obtained with summa cum laude).
              Dipartimento di Ingegneria Scienze dell'Informazione e Matematica, Università degli studi dell'Aquila, Italia
              Supervisor: Luigi Pomante

- **CURRENT POSITION(S)**

2022 –   Assistant Professor / RTD-A
              Dipartimento di Ingegneria Scienze dell'Informazione e Matematica, Università degli studi dell'Aquila, Italia

- **PREVIOUS POSITIONS**

2020 – 2022   Post Doc researcher
              Dipartimento di Ingegneria Scienze dell'Informazione e Matematica, Università degli studi

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2017 – 2023   Supervision of 1 PhD and 15+ students.
Dipartimento di Ingegneria Scienze dell'Informazione e Matematica, Università degli studi dell'Aquila, Italia

- **INSTITUTIONAL RESPONSIBILITIES (if applicable)**

2020 – (current)   Responsible for the UNIVAQ node within the CyberChallenge.IT project (CINI)

- **REVIEWING ACTIVITIES (if applicable)**

2023 –   Reviewer for the Deutsche Forschungsgemeinschaft (German Research Foundation)

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

2022 – (current) Member, Institute of Electrical and Electronics Engineers (IEEE) and of the IEEE Communication Society (IEEE ComSoc)

- **MAJOR COLLABORATIONS (if applicable)**

    CISTER, Porto (Portugal), Radiolabs – L'Aquila (Italy)

Curriculum vitae DAJANA CASSIOLI [UNIVAQ]

- **PERSONAL INFORMATION**

    Family name, First name: Cassioli, Dajana
    Researcher unique identifier(s) (such as ORCID, Research ID, etc. ...): ORCID https://orcid.org/0000-0001-7574-5099, Scopus Author ID: 6603090317

    URL for web site: https://www.disim.univaq.it/DajanaCassioli

- **EDUCATION**

2003   PhD in Telecommunications Engineering and Microelectronics
Name of Faculty/ Department, Name of University/ Institution, Country
Electronic Engineering, University of Rome Tor Vergata, ITALY
Name of PhD Supervisor: Prof. Francesco Vatalaro, University of Rome Tor Vergata
Co-Supervisor: Prof. Moe Win, MIT, USA

1999   Master in Electronic Engineering
Name of Faculty/ Department, Name of University/ Institution, Country
 Electronic Engineering, University of Rome Tor Vergata, ITALY

- **CURRENT POSITION(S)**

2015 – Today   Associate Professor of Telecommunications Engineering
Name of Faculty/ Department, Name of University/ Institution/ Country
Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, ITALY

2015 – Today   Director
Name of Faculty/ Department, Name of University/ Institution/ Country
Unit of the University of L'Aquila of the CINI National Laboratory on Cyber-Security, ITALY

- **PREVIOUS POSITIONS**

2011 – 2015   Assistant Professor of Computer Science
Name of Faculty/ Department, Name of University/ Institution/ Country
Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, ITALY

2005 – 2012   Director
Associated Laboratory of "Consorzio Università Industria - Laboratori di Radiocomunicazioni", RADIOLABS (Roma, Italy; www.radiolabs.it) at the University of L'Aquila, ITALY

2014 – 2018   President (CEO)
SMARTLY: natives of smart living s.r.l., c/o Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, ITALY. Website: http://www.smartlysrl.it

- **FELLOWSHIPS AND AWARDS**

2016-2017   ERC Proof-of-Concept Grant 2015 iCARE - MobIle health-Care system for monitoring toxicity and symptoms in cAncer patients Receiving diseasE-oriented therapy, of the European Research Council
2010- 2015   ERC Starting Grant 2009 VISION - Video-oriented UWB-based Intelligent Ubiquitous Sensing

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)**

2015 – Today   4 PhD candidates
Doctoral Programme in ICT of the University of L'Aquila, Italy.
2012-2014   1 PhD candidate, Joint PhD dissertation with Ss. Cyril and Methodius University in Skopje, Republic of Macedonia and University of L'Aquila, Italy, 2014.
2003-2009   2 PhD candidates, Department of electronics engineering, University of Rome Tor Vergata, Rome, Italy.
2011-Today   12 Master Students, 18 Bachelor Students

- **ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

201?   Please specify your role and the name of event / Country
200?   Please specify type of event / number of participants / Country

- **INSTITUTIONAL RESPONSIBILITIES (if applicable)**

2021 - Today   Head of the Study Program in Telecommunications Engineering at the University of L'Aquila

(elected)
2024   Co-Chair of the MWN Symposium, ICC 2024
2023   Co-Chair of the CISS Symposium, ICC 2023

● **REVIEWING ACTIVITIES (if applicable)**

2024	Member of the evaluation panel of NSERC Discovery Grants, Canada
2009 – Today	Evaluator of IST Fp7 European Projects for the Objective "The network of the future" and, currently, for Horizon 2020 for ICT calls, including MSCA-DN, European Commission, Bruxelles, Belgium.
2014, 2020, 2021, 2024	Expert for Evaluations for the Academy of Finland project review panel, Helsinki, Finland
2012	Expert for Evaluations of Grant proposals at the Swiss National Science Foundation (SNSF) - Div. Mathematics, Physical and Engineering Sciences
2011	External Evaluator for Greek National Projects for the programs: Greek Research Program "Archimedes III," Greek Research Program "Thalis," Greek National Action "Cooperation 2011"
2009 - Today	Technical Expert for the Periodic Review of IST Fp7 European Projects and Networks of Excellence, H2020 European Projects and H2020 5G-PPP European Projects
2018 – Today	Associate Editor of the IET ELECTRONIC LETTERS, © IET
2018 –2022	Associate Editor of the IEEE COMMUNICATIONS LETTERS, © IEEE
2017 – Today	Executive Editor of the INTERNET TECHNOLOGY LETTERS, © JOHN WILEY & SONS Ltd
2016 – Today	Executive Editor of the TRANSACTIONS ON EMERGING TELECOMMUNICATIONS TECHNOLOGIES, © JOHN WILEY & SONS Ltd
2016 – Today	Editorial Board Member of the WIRELESS COMMUNICATIONS AND MOBILE COMPUTING, A PARTNERSHIP BETWEEN WILEY AND HINDAWI.
2010 - 2015	Editorial Board Member of ISRN COMMUNICATIONS AND NETWORKING OF HINDAWI PUBLISHING CORPORATION.

● **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

2023 – Today	Diversity, Equity and Inclusion (DEI) Activities Coordinator of IEEE Italy Section
2016 – 2022	Founder and Chair of the WIE Affinity Group of the IEEE Italy Section
2011 – 2017	Chair of the IEEE Joint Italy Chapter VT06/COM16 (Vehicular Technology and Communication Society)
2009- Today	Senior Member IEEE
2002- Today	Member of IEEE Communication Society, IEEE Vehicular Technology Society, IEEE Computer Society and IEEE WIE

● **MAJOR COLLABORATIONS**

In Summer 2022, she was a short-term visiting scholar at the University of Southern California (USC), Los Angeles, CA, USA, hosted by Prof. Andy Molisch.
In 2012, she visited Prof. Moe Win at MIT, USA
She participated in the definition of the standard channel model for the IEEE 802.15.4 standard (2005).
In 2000 she was Summer Manager at the Wireless Systems Research Dep. - AT&T Labs-Research, NJ, USA.

● **CAREER BREAKS**

Curriculum vitae FORTUNATO SANTUCCI [UNIVAQ]

● **PERSONAL INFORMATION**

Family name, First name: **Santucci, Fortunato**

Researcher unique identifier(s) (such as ORCID, Research ID, etc. ...): **ORCID - 0000-0002-0229-6277**

Date of birth: /   /

Nationality:

URL for web site: **https://www.disim.univaq.it/home2.php?users_username=fortunato.santucci**

● **EDUCATION**

1994	Ph.D in Electronic Engineering Faculty of Engineering, University of L'Aquila, Italy Supervisor: Prof. Pasquale Carelli
1989	Laurea (five years) degree in Electronic Engineering Department of Electrical Engineering, University of L'Aquila, Italy Supervisor: Prof. Francesco Valdoni

● **CURRENT POSITION(S)**

2016 –	Full Professor in Telecommunications DISIM, University of L'Aquila, Italy
2019 -	Founder and Director of the Centre of Excellence Ex-EMERGE on connected, geo-localized and cyber-secure vehicles at the University of L'Aquila

● **PREVIOUS POSITIONS**

2002 – 2016	Associate professor in Telecommunications Faculty of Engineering, University of L'Aquila, Italy
1994 – 2002	Assistant professor in Telecommunications Faculty of Engineering, University of L'Aquila, Italy
1991 - 1992	Research Fellow at Istituto di Elettronica dello Stato Solido (IESS) - National Research Council (CNR) -Rome, from Feb. 1991 to Sept. 1992
1989 – 1990	Lieutenant Engineer in the Technical Corp of Aviation Army, Division of Telecommunications and Air Traffic Control
1989	Junior Engineer at Selenia Spazio Spa, Ground Systems Division in Rome

● **FELLOWSHIPS AND AWARDS**

2019	Co-author of the paper "Systematic Derivation of Accurate Analytic Markov Channel Models for Industrial Control", (with A Alrish, YZ Lun, and A. D'Innocenzo) Best Work in Progress Paper Award in15th IEEE International Workshop on Factory Communication

Systems (WFCS), Sundsvall, Sweden, May 27th 2019

2014	Co-author of the paper that received the Best Student Conference Paper Award from the IEEE Sweden Joint VT-COM-IT Chapter in 2014;
2005	Co-recipient of the Best Application Paper Award at IEEE MASS'05;
1996-1997	Visiting researcher at University of Victoria, BC, Canada - Research Lab. on Wireless Communications lead by Prof. V.K. Bhargava, June 1996 - November 1996 and August 1997;
1996	Awarded a fellowship by Fondazione F. Filauro

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)**

1994 –	Supervision of a 200+ Bachelor/Master students and several Ph.D studentsUniversity of L'Aquila, Italy and KTH Stockholm. Some of them have progressed in academic/research career in first class international institutions.

- **ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

1994 -	Co-organizer of workshops and conferences within european projects;
1994 -	Session chair in major conferences;
1994 -	Regular member of the Technical Program Committee in major IEEE conferences and reviewer for major IEEE technical journals;
2015	Organizer of the Annual National Meeting of Telecommunications (GTTI) in 2004 and 2015;
2006	Co-organizer of MTNS'06 Mini-symposium on "Distributed decision-making over ad-hoc networks" and special sessions in various conferences;

- **INSTITUTIONAL RESPONSIBILITIES (if applicable)**

2020 -	Member of the National Technical Committee on Intelligent Transport Systems of World Road Association
2006 -	Member of the Executive Committee of Radiolabs Consortium
2005 -	Co-founder and member of the board of directors of WEST Aquila srl, a spin-off company of the University of L'Aquila that has been operating in the field of wireless networked embedded systems since 2005
2006 - 2015	Chair of the Program Committee in Telecommunications Engineering at the University of L'Aquila (2006 - 2015): among others, he has promoted an i) international Path-of-Excellence and ii) definition and implementation of the international Master program in Telecommunications Engineering (2015);
2021-2023	Member of Committee for National Scientific Qualification (ASN) for Telecommunications
2001-2019	Member of the Executive Committee (2001-) and Vice Director (2012-) of DEWS, Centre of Excellence at University of L'Aquila
2000 -	Coordinator of agreements for students mobility (some with multiple degree), e.g. with KTH Stockholm, TUB Berlin, UPC Barcellona, IST Lisbon, AGH Krakow, ABB, Ericsson, etc;
2015 – 2018	Member of the Academic Senate, University of L'Aquila
2020 – 2028	Member of the International Advisory Board of NIIT (Next Generation Industrial IoT), Mid Sweden University, Sundsvall

- **REVIEWING ACTIVITIES (if applicable)**

2000 – 2013	Editor for IEEE Trans. on Communications
2012 – 2015	Hindawi International Journal of Vehicular Technology

2006 -   Editor for Kluwer Telecommunications Systems
2008 – 2009 Editor for International Journal of Robust and Nonlinear Control, Special Issue "Industrial Control over Wireless Networks"

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

1993 - Member of the IEEE (Comm. Society, Inf. Theory Society and Veh. Tech. Society), with Senior membership from 2000
2016 - Nominated by CNR President to represent Italy in the Commission C of URSI (International Union of Radio Science)
2020 - Senior URSI Member

- **MAJOR COLLABORATIONS (if applicable)**

    University of Roma Tre, Prof. Alessandro Neri
    Politecnico di Torino, Prof. Carla Fabiana Chiasserini
    University of California, Irvine, Prof. Marco Levorato
    Radiolabs, Dr. F. Valentini, E. Cinque, F. Rispoli
    KTH Stockholm, Prof. C. Fischione, K.-H. Johansson
    Mid Sweden University, Prof. M. Gidlund
    Leonardo spa, Dr. A. Crescenzi
    Thales Alenia Space, Dr. L. Simone, D. Giancristofaro
    Stellantis, Dr. L. Andreone, M. Giordanino

Curriculum vitae FABIO GRAZIOSI [UNIVAQ]

- **PERSONAL INFORMATION**

Family name, First name: **Graziosi, Fabio**
Researcher unique identifier(s) (such as ORCID, Research ID, etc. ...): **ORCID - 0000-0001-7808-0707**
Date of birth:
Nationality: **a**
URL for web site: **https://www.disim.univaq.it/FabioGraziosi**

- **EDUCATION**

1997 Ph.D, in data 14 Luglio 1997, discutendo una tesi dal titolo "Sviluppo di modelli per l'analisi delle prestazioni nei sistemi radiomobili terrestri"
       Università degli Studi dell'Aquila, Italia
1993 Laurea (5 anni) n Ingegneria Elettronica in data 22 Luglio 1993 presso l'Università degli Studi dell'Aquila con voti 110/110 e lode, discutendo una tesi dal titolo "Analisi, modellizzazione e verifica numerica di procedure di gestione dell'utenza nelle comunicazioni personali";
       Università degli Studi dell'Aquila, Italia

- **CURRENT POSITION(S)**

2005 – Professore Ordinario di Telecomunicazioni
        Università degli Studi dell'Aquila, Italia

- **PREVIOUS POSITIONS**

1993-1997	Ricercatore per il raggruppamento Telecomunicazioni presso il Dipartimento di Ingegneria Elettrica e dell'Informazione dell'Università degli Studi dell'Aquila.
1997-2000	Ricercatore confermato per il raggruppamento Telecomunicazioni presso il Dipartimento di Ingegneria Elettrica e dell'Informazione dell'Università degli Studi dell'Aquila.
2000-2005	Professore associato per il raggruppamento Telecomunicazioni presso il Dipartimento di Ingegneria Elettrica e dell'Informazione dell'Università degli Studi dell'Aquila.

- **FELLOWSHIPS AND AWARDS**

1993	premio in memoria del Prof. Albino Antinori, assegnato dall'Associazione Italiana Ingegneri delle Telecomunicazioni per il miglior laureato in Ingegneria Elettronica dell'Università degli Studi dell'Aquila nell'anno 1993 con tesi nel campo delle telecomunicazioni;
1993	uno dei quindici premi di laurea assegnati dalla Fondazione Ugo Bordoni, in occasione del suo quarantennale, a laureati in Ingegneria (elettronica, telecomunicazioni, informatica), Fisica, Economia e Commercio nel corso del 1993 con tesi inerenti argomenti di primario interesse nell'ambito delle telecomunicazioni moderne (Bando del Dicembre 1992);

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)**

2000 -	Relatore di numerose tesi di laurea in Telecomunicazioni ed supervisor/co-supervisor di numerosi studenti di dottorato; Università degli Studi dell'Aquila, Italia

- **ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

2000 -	ha ricoperto il ruolo di session chairman in numerosi congressi internazionali
2004	co-organizzatore della Riunione Annuale del Gruppo Ricerca di Telecomunicazioni e Teoria dell'Informazione (GTTI) e Assemblea Annuale del Consorzio Interuniversitario per le Telecomunicazioni (CNIT), L'Aquila, 14-16 Giugno 2004

- **INSTITUTIONAL RESPONSIBILITIES (if applicable)**

2000 -	Membro del Consiglio Direttivo del Centro di Eccellenza per la Ricerca DEWS (Design methodologies for Embedded controllers Wireless interconnect and System on chip) dell'Università degli Studi dell'Aquila e responsabile del work package Wireless Sensor Networks Application; per lo stesso Centro ricopre il ruolo di vice direttore (2000-);
2004 – 2005	Responsabile di work package (System Design) nell'ambito della collaborazione tra il Dipartimento di Ingegneria Elettrica e dell'Informazione dell'Università degli Studi dell'Aquila e Selenia Communications (già Marconi Selenia Communications) su Tecniche e tecnologie per la sorveglianza del traffico aereo
2004	Socio fondatore, legale rappresentante e Presidente del Consiglio di Amministrazione della società di spin-off universitario WEST Aquila Srl (Wireless Embedded Systems Technologies L'Aquila), dell'Università degli Studi dell'Aquila, fondata nel Dicembre del 2004; tale iniziativa è orientata ad attività di trasferimento tecnologico nel campo dei wireless embedded systems ed è stata selezionata nell'ambito del Progetto Colombo promosso dalla Regione Abruzzo.
2010 -	Membro del Consiglio di Amministrazione del Centro di Ricerca e Formazione in Ingegneria Sismica (CERFIS) presso l'Università degli Studi dell'Aquila
2008 -	Membro dei Consigli di Corso di Studio in Ingegneria Informatica-Automatica e in Ing. delle Telecomunicazioni;

- **REVIEWING ACTIVITIES (if applicable)**

2000 – Attività di revisore per riviste internazionali (IEEE Trans. on Communications, IEEE Communications Letters, IEEE Trans. on Vehicular Technology, IEEE Journal on Selected Areas in Communications, IEEE Trans. on Wireless Communications, Kluwer Wireless Personal Communications, IEEE Multimedia) e numerosi congressi nel campo delle telecomunicazioni

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

1997 – IEEE (Institute of Electrical and Electronics Engineers) Senior Member
2000 - Rappresentante di unità di ricerca del GTTI
2008 - Rappresentante di unità di ricerca del CNIT e membro del Consiglio Direttivo del CNIT (2008/2010-2010/2012)

Curriculum vitae NOBERTO GAVIOLI [UNIVAQ]

- **PERSONAL INFORMATION**

Family name, First name: **Gavioli, Norberto**

Researcher unique identifier(s) (such as ORCID, Research ID, etc. ...): **ORCID - 0000-0001-9500-0860**

Date of birth:

Nationality:

URL for web site: **https://www.disim.univaq.it/NorbertoGavioli**

- **EDUCATION**

1994 PhD in Mathematics
   Università degli Studi di Trento, Italy
1988 Degree in Mathematics
   Università degli Studi di Milano, Italy

- **CURRENT POSITION(S)**

2000 – Associate professor of algebra
   DISIM, University of L'Aquila, Italy

- **PREVIOUS POSITIONS**

1993 – 2000 Research Assistant
   DISIM, University of L'Aquila, Italy

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)**

2000 – Several Bachelor and Master degree student advisor (University of L'Aquila)

- **ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

2021 -   Chair of the scientific board of the cryptography and codes conference 2021
          https://sites.google.com/view/crittografiaecodici/convegno-annuale
2019   Organization of workshop "Algebra4Cryptography 2019" – Università dell'Aquila, 10-11
          ottobre 2019. https://www.disim.univaq.it/didattica/getres.php?resid=4868&lid=it&did=4

- **INSTITUTIONAL RESPONSIBILITIES (if applicable)**

2007- 2010   Member of steering committee og the project IDEM (GARR) for an Italian infrastructure
             of federated authentication http://progetto-idem.idem.garr.it/chisiamo.php
2007 – 2012 pro-rector for quality assurance policies (University of L'Aquila)
2012 – 2015 member of the academic senate (University of L'Aquila)
2016 -   Math Olympiads Department activity coordinator (University of L'Aquila)
2016 -   Coordinator of the laboratories of the Department of Engineering and Information Sciences
             and Mathematics
2019 -   Member of the board of directors of the ExMERGE Center of Excellence (University of
             L'Aquila)

- **REVIEWING ACTIVITIES (if applicable)**

2008 -   Referee for several international journals

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

2010 -   Member of GARR task force for the ICT4 University initiative.
2018 -   Member of the national De Componendis Cifris initiative - MathCifris section manager
          https://www.decifris.it/attivita
2020 –   Head of the Cryptography and Codes group of the Italian Mathematical Union.
          https://umi.dm.unibo.it/gruppi-umi-2/gruppo-umi-crittografia-e-codici/ e
          https://sites.google.com/view/crittografiaecodici/home

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Curriculum vitae GENNARO BOGGIA [POLIBA]

- **PERSONAL INFORMATION**
  BOGGIA, Gennaro
  ORCID number: https://orcid.org/0000-0002-0883-3045

  URL for web site: https://telematics.poliba.it/boggia

- **EDUCATION**

2001   PhD
          Doctoral degree obtained from Polytechnic University of Bari, Italy.
1997   Degree in Electronic Engineering
          Degree in Electronic Engineering (cum laude) from Polytechnic University of Bari.

- **CURRENT POSITIONS**

since 2021   Head of Department of Electrical and Information Engineering (DEI) at Polytechnic
              University of Bari.

since 2018	<u>Full Professor</u> in Telecommunication (SSD: ING-INF/03 DEI POLIBA) Polytechnic University of Bari, Italy
since 2008	Responsibilities in different national and international projects. Scientific Director, CNIT Research Unit of the Polytechnic of Bari, Pre-commercial trials of 5G technology using spectrum in the 3.6 GHz-3.8 GHz range - Milan Area project. MISE call. (2017-2021). Scientific Director, CNIT Research Unit of the Polytechnic of Bari "Symbiosis of smart objects across IoT environments, symBIoTe", European Project, Horizon 2020 Program, (2016-2018). Scientific Head, Polytechnic of Bari unit, "RENDEZ VOUS: high energy efficiency distributed network for industrial and avionic monitoring operating in ultra-wide band with pulse radio", P.O. PUGLIA ERDF 2007-2013 (2012-2014). MC Substitute Member and Scientific Head of the unit of the Polytechnic of Bari, "European Network on Quality of Experience in Multimedia Systems and Services (QUALINET)". European Union - COST Action IC1003 (2010-2014). Scientific Director, Research Unit of the Polytechnic of Bari for the project: European Union - COST Action IC0703: "Data Traffic Monitoring and Analysis: theory, techniques, tools and applications for the future networks" (2008-2012). Scientific Head "Easy Link" Project within the "WiFi SUD" initiative, "ICT4University" Program - Presidency of the Council of Ministers - Department for Innovation and Technologies.: (2009-2010). Head of the "Completion and enhancement of internet coverage" activity of the "K-Student" Project, "R.U.P. Network of the Apulian Universities", Digital University "initiative, ICT4University (2009-2012).

● PREVIOUS POSITIONS

2012 – 2018	<u>Associate Professor</u> in Telecommunication (SSD: ING-INF/03 DEI POLIBA) Polytechnic University of Bari, Italy
2002 – 2012	<u>Assistant Professor</u> in Telecommunication (SSD: ING-INF/03 DEI POLIBA) Polytechnic University of Bari, Italy
2007 nov-dic	Visiting Researcher at FTW, Vienna (Austria)
2001-2002	Network Engineer at Getronics Solutions Italia S.p.A.
1999 may-dic	Visiting Researcher with the TILab, TelecomItalia Lab Torino

● FELLOWSHIPS AND AWARDS

2018	Best Ph. Thesis 2018, ERCIM (European Research Consortium for Information and mathematics) Security and Trust Management Working Group, for PhD thesis with title "From Security to Localization: Advanced Services for Large-Scale IoT Networks"; PhD student: Savio Sciancalepore; Tutor: Gennaro Boggia.
2015	Best paper Award [C.79] all'IEEE ICUMT Conf
2014	AICA (Italian Association for IT and Automatic Calculation) Award with special mention for the innovation and originality of the doctoral thesis "Advanced services and performance evaluation in information-centered networks"; PhD student: Ilaria Cianci; Tutor: Gennaro Boggia.
2013	Most viewed article in 2013 [J.26] Journal on Wireless Commun. and Networking.

● SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

since 2002	Supervising hundreds of both BS and MSc thesis activity.
2020-2024	Dr. Antonio Petrosino, PhD in Sustainable and Smart Industry. Research topic: Secure IoT
2018-2021	Dr. Sergio Martiradonna, PhD in Electrical and Information Engineering (DRIEI). Research topic: "Study and development of innovative strategies for the implementation and optimisation of network architectures communication protocols and transmission techniques for 5G".
2018-2021	Dr. Arcangela Rago, PhD in Electrical and Information Engineering (DRIEI). Research topic: "Study and synthesis of innovative methodologies for the management and optimisation of mobile networks based on SDN/NFV by means of machine learning

techniques".

2018-2021   Dr. Awais Shah, PhD in Electrical and Information Engineering (DRIEI). Research topic: Softwarized optical network architectures.

2016-2019   Dr. Alessandro Grassi, PhD in Electrical and Information Engineering (DRIEI). thesis title "Design and evaluation of technical components building the flexible 5G radio interface supporting heterogeneous use cases".

2016-2019   Dr. Savio Sciancalepore, PhD in Electrical and Information Engineering (DRIEI). thesis title "From Security to Localization: Advanced Services for Large-Scale IoT Networks".

2011-2014   Dr. Ilaria Cianci, PhD in Electrical and Information Engineering (DRIEI). Thesis title "Advanced Services and Performance Assessment in Information Centric Networks".

2010-2014   Dr. Rosa Vilardi, PhD in Electronic Engineering (DRIEI). Thesis title "Traffic Monitoring and Measurement in high-speed Networks".

2008-2011   Dr. Antonio Barbuzzi, PhD in Electronic Engineering (DRIEI). Thesis title "Active and passive measurements in large networks".

● **ORGANISATION OF SCIENTIFIC MEETINGS**

2020   Conference and Program <u>Chair</u> Int. Conf. On Ad Hoc Networks and Wireless, AdHoc-Now, Bari.

2016   Special Session <u>co-Chair</u> International Conference on Telecommunications, ICT, Thessaloniki, Greece.

2012   Demo-<u>co-chair</u> 15th ACM Conf. On Modeling, Analysis and Simulation of Wireless and Mobile Systems, MSWiM 12, Cyprus.

2011   <u>Co-chair</u> Green Wireless Networks: opportunities and new challenges, IEEE Int. Workshop on Computer-Aided Modeling Analysis and Design of Communication Links and Networks, CAMAD, Kyoto, Japan.

2010   <u>Co-chair</u> track Factory Automation & Industrial Informatics, IEEE Int. Symposium on Industrial Electronics, ISIE 2010, Bari.

2010   Member of the Organizing Committee, IEEE Int. Symposium on Industrial Electronics, ISIE 2010, Bari.

● **INSTITUTIONAL RESPONSIBILITIES**

2018-2021   Coordinator of the Master's Degree Course in Telecommunications Engineering.

2015-2018   Coordinator of the Master's Degree Course in Telecommunications Engineering.

2013-2015   Vice Coordinator of the Master's Degree Course in Telecommunications Engineering.

2006; 2011   Aggregate member of the Commission for the State Examination for the profession of Engineer.

● **REVIEWING ACTIVITIES**

since 2016   <u>Executive Editor</u> "Transactions on Emerging Telecommunications Technologies, ETT".

since 2013   <u>Associate Editor</u> "Wireless Networks, WINET", Ed. Springer.

2017-2020   <u>Associate Technical Editor</u> "IEEE Communication Magazine".

2014-2020   <u>Associate Editor</u> "International Journal of Distributed Sensor Networks", London, UK.

2015-2020   <u>Associate Editor</u> "Journal of Computer Networks and Communications", Hindawi Publishing, USA.

since 2010   <u>Chair and co-chair</u> for several international conferences, such as "Int. Conf. on Ad Hoc Networks and Wireless, AdHoc-Now 2020", 19-21 Ott 2020, Bari, Italy; "International Conference on Telecommunications, ICT", 16-18 Mag. 2016, Salonicco, Grecia; "15th ACM Conf. on Modeling, Analysis and Simulation of Wireless and Mobile Systems, MSWiM 12", 21-25 Ott. 2012, Cipro; and others.

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

since 2009	Senior Member of the Institute of Electrical and Electronics Engineers (IEEE).
2013-2015	Member of the IETF 6tisch WG.
2014-2016	Member of the IRTF INCNRG Working Group, "Information-Centric Networking Research Group".

- **MAJOR COLLABORATIONS**

Boggia participated to research activities characterized by national and international collaborations, with: Alexander Technological Educational Institute of Thessaloniki, ATEITHE, Salonicco (Grecia), Berkely University (USA), CTTC, Barcellona (Spagna), EICT, Berlino (Germania), EURECOM, Sophia Antipolis (Francia), Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute, HHI (Germania), FTW, Vienna (Austria), Hamad Bin Khalifa University (Qatar), INRIA, Parigi (Francia), INRIA, Sophia Antipolis (Francia), Kazan National Research Technical University, Kazan (Russia), King's College of London, Londra (Gran Bretagna), Nanonetworking Center in Catalunia, N3CAT, Barcellona (Spagna), Orange Lab, Parigi (Francia), PSNC, Poznan (Polonia), Queen Mary University, Londra (Gran Bretagna), Telecom Paristech, Parigi (Francia), University of Ljubljan, Lubiana (Slovenia), University of Luxembourg (Lussemburgo), UPC, Barcellona (Spagna), VTT, Oulu (Finlandia).

Curriculum vitae LUIGI ALFREDO GRIECO [POLIBA]

- **PERSONAL INFORMATION**
  GRIECO, Luigi Alfredo
  ORCID number: https://orcid.org/0000-0002-3443-6924

  URL for web site: http://telematics.poliba.it/grieco/

- **EDUCATION**

2003	PhD
	Doctoral degree in Information Engineering obtained from University of Lecce, Italy. Thesis title: "Algoritmi Innovativi per il Trattamento di Contenuti Video: Compressione in Tempo Reale e Trasmissione su Reti a Commutazione di Pacchetto". Supervisor: Prof. G. Grassi.
1999	Degree in Telecommunication Engineering
	Degree (cum laude) in Electronic Engineering obtained from Polytechnic University of Bari, Italy.

- **CURRENT POSITION**

since 2018	Full Professor in Telecommunication (SSD: ING-INF/03) at the Department of Information Engineering (DEI), Polytechnic University of Bari.
	Responsibilities in different national and international projects, such as PRIN project no. 2022BEXMXN_01 (Principal Investigator), PRIN project no. 2017NS9FEY (local Principal Investigator), SATIABLE ESA project (scientific supervisor of the CNIT research unit), NB-IoT ESA project (scientific supervisor of the CNIT research unit), ITA NTN structural project in the PE14 RESTART program (task leader), COHERENT structural project in the PE14

RESTART program (WP leader).

● **PREVIOUS POSITIONS**

2016 – 2018   <u>Associate professor in Telecommunication</u> (RTD-B) (SSD: ING-INF/03) at the Department of Information Engineering (DEI), Polytechnic University of Bari.

2005 – 2014   <u>Assistant professor in Telecommunication</u> (RTD-A) (SSD: ING-INF/03) at the Department of Information Engineering (DEI), Polytechnic University of Bari.

● **FELLOWSHIPS AND AWARDS**

2021   <u>Computer Networks Timeless Impact Paper Award</u> for the contribution "Security, privacy and trust in Internet of Things: The road ahead".

2021   counted in the list of researchers who over their career have produced the best 2% (https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/3).

2020   <u>Top Editor Recognition for IEEE Transactions on Vehicular Technology.</u>

2017   <u>Top Editor Recognition for IEEE Transactions on Vehicular Technology.</u>

2017   listed as <u>Top Italian Scientist</u> by the Via Academy association.

2016   <u>IEEE Vehicular Technology Society Distinguished Lecturer</u>

2015   <u>Best Paper Award [J.43],</u> Journal of Software and Systems Modeling Presented at MODELS 2015

2013   <u>Highly accesses paper</u> in [J.65] in the EURASIP Journal on Wireless Communications and Networking.

● **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

since 2003   Supervising both BS and MSc thesis activity since 2009. In particular, he has supervised more than 200 thesis since 2009 at the Polytechnic University of Bari

2021-   Dr. Giovanni Grieco, PhD in Electrical and Information Engineering (DRIEI). Research topic: Internet of Drones Architectures.

2020-   Dr. Framcesco Vista, PhD in Electrical and Information Engineering (DRIEI). Research topic: Quantum Communications Technologies.

2020-   Dr. Antonio Petrosino, PhD in Sustainable and Smart Industry. Research topic: Secure IoT technologies in Transport Management Systems.

2019-2022   Dr. Giovanni Iacovelli, PhD in Electrical and Information Engineering (DRIEI). Research topic: Learning enabled Industrial Internet of Things.

2018-2021   Dr. Paolo Benedetti, PhD in Electrical and Information Engineering (DRIEI). Research topic: Softwarized approaches to Information Centric enabled publish-subscribe systems for the Internet of Mobile Things.

2018-2021   Dr. Awais Shah, PhD in Electrical and Information Engineering (DRIEI). Research topic: Softwarized optical network architectures.

201-2017   Tutor for several PhD students in Electrical and Information Engineering (DRIEI).

● **ORGANISATION OF SCIENTIFIC MEETINGS**

since 2020   <u>General Co-Chair</u> for the "The Second International Workshop on Intelligent Cloud Computing and Networking (ICCN), IEEE INFOCOM 2020 and next editions.

2020   <u>General Co-Chair</u> for the congress AdHocNow 2020. Bari 2020.

2019   <u>General Co-Chair</u> for the First International Workshop on Intelligent Cloud Computing and Networking (ICCN), IEEE INFOCOM 2019.

2019   <u>General Co-Chair</u> for Fourth IEEE International Conference on Fog and Mobile Edge Computing (FMEC 2019) . Roma 2019.

2016   <u>Track Chair</u> for the International Conference 83rd IEEE VTC 2016 Fall, track: Future Trends and Emerging Technologies.

2015   <u>Program Chair</u> for the 1st International Workshop on IoT challenges in Mobile and Industrial Systems (IoT-Sys 2015).

2015   <u>Track Chair</u>, 29th International Conference on Advanced Information Networking and

Applications (AINA-2015).

2011	<u>Chair</u>, special session Networking Technologies for the Third Millennium Automation - IEEE International Conference on Mechatronics (ICM 2011).
2010	<u>Organization Committee Member</u> del IEEE International Symposium on Industrial Electronics (ISIE 2010)
2010	<u>Chair</u>, special session Advances in Industrial Automation Networks - IEEE International Symposium on Industrial Electronics (ISIE 2010).

● **INSTITUTIONAL RESPONSIBILITIES**

since 2023	<u>Director of the doctoral school</u> Degree at Polytechnic University of Bari.
since 2013	Scientific co-co-coordinator of the Telematics Laboratory at Department of Electrical and Information Engineering (DEI) at Polytechnic University of Bari.
2018-2019	<u>Member of the working group</u> for the adjustment of the regulations on faculty recruitment, upon designation by the Academic Senate of the Polytechnic University of Bari.
2018-2019	<u>Member of the Scientific Committee</u> in support of the University Digital Library at Polytechnic University of Bari.
2017-2018	<u>Contact person</u> to the Department of Electrical and Information Engineering (DEI) at Polytechnic University of Bari.
2016-2017	<u>Member of the Research Committee</u> to the Department of Electrical and Information Engineering (DEI) at Polytechnic University of Bari.
2016-2017	<u>Member of the Scientific Committee</u> in support of the University Digital Library at Polytechnic University of Bari.
2016-2017	<u>Member</u> of the Scientific Council of the Inter-University Center of Industry 4.0 Research at Polytechnic University of Bari.
2011-2014	Single university contact person for VQR 2011-14 at Polytechnic University of Bari.
2013-2019	<u>Delegate</u> to Research and Technology Transfer from the Magnificent Rector of the Polytechnic of Bari,
2013-2014	<u>Member</u> of the Statute Review Commission of the Academic Senate.
2011-2014	Representative of researchers in the Board of the Department of Electrical and Information Engineering (DEI) at Polytechnic University of Bari.

● **REVIEWING ACTIVITIES**

since 2017	<u>Founder Editor in Chief</u> of the Internet Technology Letters, (ITL) - Wiley - ISSN: 2476-1508.
since 2016	<u>Editor in Chief</u> for the Transactions on Emerging Telecommunications Technologies (ETT) journal - Wiley - ISSN: 2161-3915.
since 2012	<u>Associate Editor</u> for the IEEE Transactions on Vehicular Technology journal - ISSN 0018-9545.
2012-2016	<u>Executive Editor</u> for the Transactions on Emerging Telecommunications Technologies journal, (ETT) - Wiley - ISSN: 2161-3915.
2011-2015	<u>Associate Editor</u> for the ISRN Communications and Networking Journal - Hindawi - ISSN 20904355.
2011-2013	<u>Associate Editor</u> for the Journal of Electrical and Computer Engineering - Hindawi - ISSN 20900147.

● **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

since 2012	<u>Senior Member of the Institute of Electrical and Electronics Engineers (IEEE).</u>
2013-2015	<u>Member of the IETF 6tisch WG</u>, and author of the Internet Draft entitled "Layer-2 security aspects for the IEEE 802.15.4e MAC", draft-piro-6tisch-security-issues-03
2014-2016	<u>Member of the IRTF INCNRG Working Group,</u> "Information-Centric Networking Research Group".

● **MAJOR COLLABORATIONS**

<u>University of Luxembourg (Luxembourg).</u> Research topics developed in the collaboration: resource allocation in Industrial IoT scenarios and ICN architectures. <u>Beijing University of Posts and Telecommunications (Cina).</u> Research topic developed in the collaboration: ICN architectures in vehicular scenarios. <u>CNRS-LAAS</u>

(France). Research topics developed in the collaboration: interoperability in M2M systems, resource allocation in Industrial IoT scenarios and random graphs. <u>CTTC, Barcellona (Spain)</u>. Research topics developed in the collaboration: analysis and synthesis of MAC layer protocols in Industrial IoT scenarios, heterogeneous networks based on renewable energy sources. <u>KCL, London (UK)</u>. Research topics developed in the collaboration: resource allocation in Industrial IoT and 5G-IoT scenarios. INRIA, Sophia Antipolis (France). Research topics developed in the collaboration: frequency analysis of packet sampling techniques in Internet traffic measurement systems, study of congestion control algorithms in architectures ICN.

Curriculum vitae GIUSEPPE PIRO [POLIBA]

- **PERSONAL INFORMATION**

  PIRO, Giuseppe

  ORCID number: https://orcid.org/0000-0003-3783-5565

  URL for web site: http://telematics.poliba.it/piro/

- **EDUCATION**

2012	<u>PhD</u> Doctoral degree obtained from Polytechnic University of Bari, Italy. Thesis title: ” Research on radio resource management in wireless and mobile networks”. Supervisor: Prof. Pietro Camarda.
2008	<u>Second Level Degree in Telecommunication Engineering</u> Second Level Degree in Telecommunication Engineering degree (cum laude) from Polytechnic University of Bari. Thesis title: “Servizi a ritardo garantito in WLAN”. Supervisor: Prof. Pietro Camarda.
2006	<u>First Level Degree in Telecommunication Engineering</u> First Level Degree in Telecommunication Engineering degree (cum laude) from Polytechnic University of Bari. Thesis title: “Prestazioni di algoritmi cross-layer in reti WiFi multihop in presenza di flussi multimediali”. Supervisor: Proff. Gennaro Boggia and Luigi Alfredo Grieco.

- **CURRENT POSITION**

since 2022	<u>Associate Professor</u> in Telecommunication (SSD ING-INF/03) at the Department of Information Engineering (DEI), Polytechnic University of Bari.
since 2020	Responsibilities in different national and international projects, such as PRIN project no. 2022BEXMXN_01 (Principal Investigator), PRIN project no. 2017NS9FEY (local Principal Investigator), SATIABLE ESA project (scientific supervisor of the CNIT research unit), NB-IoT ESA project (scientific supervisor of the CNIT research unit), ITA NTN structural project in the PE14 RESTART program (task leader), COHERENT structural project in the PE14 RESTART program (WP leader).

- **PREVIOUS POSITIONS**

2018 – 2022	<u>Assistant Professor</u> (Ricercatore a tempo determinato L.240/10 tipo B) at the Department of Information Engineering (DEI) of University of Padova, Polytechnic University of Bari.
2015 – 2018	<u>Assistant Professor</u> (Ricercatore a tempo determinato L.240/10 tipo A) at the Department of Information Engineering (DEI) of University of Padova, Polytechnic University of Bari.

- **FELLOWSHIPS AND AWARDS**

2009	<u>Short-Term Scientific Mission (STSM)</u> at the Planete Project at INRIA Sophia Antipolis –

2010	<u>Best Student Paper Award</u>, for the contribution "An improved IEEE 802.16 WiMAX module for the ns-3 simulator" presented SIMUTools 2010
2010	<u>First classified at Working Capital Tour 2010</u>, for the research project idea "Any media for any people".
2012	<u>Top Reviewer Award</u> - IEEE Transactions on Vehicular Technology for the 2012
2012	<u>Best Paper Award Francesco Carassa 2012</u>, for the contribution "QoS provisioning in LTE-A networks with relay nodes" presented at GTTI 2012
2013	<u>Highly accesses EURASIP paper</u> entitled "On accurate simulations of LTE femtocells using an open source simulator".
2014	<u>Best of IEEE Student Application Paper 2014</u>, for the contribution "Application of IEEE 802.15.4 security procedures in OpenWSN protocol stack", published on IEEE Standards Education e-Magazine
2015	<u>Best Paper Award in</u> Telecommunications - ICUMT 2015, for the contribution "D2D in lte vehicular networking: system model and upper bound performance" presented at ICUMT 2015
2019	<u>Best Paper Award - SDS 2019</u>, for the contribution "An SDN-aided Information Centric Networking Approach to Publish-Subscribe with Mobile Consumers", presented SDS 2019.
2022	<u>Top 2% scientist</u>, according to the ranking presented in "Ioannidis, John P.A., "October 2023 data-update for "Updated science-wide author databases of standardized citation indicators"", Elsevier Data Repository"".

● SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

since 2009	Supervising both BS and MSc thesis activity since 2009. In particular, he has supervised more than 200 thesis since 2009 at the Polytechnic University of Bari
2023-	Dr. Enrico Boffetti, PhD in Electrical and Information Engineering (DRIEI). Research topic: Study of advanced methodologies for the dynamic monitoring and configuration of future telecommunication networks.
2023-	Dr. Federica de Trizio, PhD in Electrical and Information Engineering (DRIEI). Research topic: Design and analysis of innovative methodologies for the optimized and secure management of 6G networks and services through Network Digital Twin.
2022-	Dr. Hingrid Huso, PhD in Sustainable and Smart Industry. Research topic: Design and evaluation of novel network architectures and innovative communication protocols supporting cybersecurity services in industry 4.0.
2021-2023	Dr. Giancarlo Sciddurlo, PhD in Electrical and Information Engineering (DRIEI). Title of the doctoral thesis: Architecting Advanced IoT Services: from Communication to Social Perspective.
2018-2021	Dr. Vittoria Musa, PhD in Electrical and Information Engineering (DRIEI). Title of the doctoral thesis: Long-Lasting Nanoscale Wireless Communications with Energy-Harvesting.

● ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)

2023	<u>Co-Chair</u> for the "Workshop on Integrated Terrestrial and Non-Terrestrial Networks," organized as part of the international conference "European Wireless (EW)", Rome, 2023
2021	<u>Co-Chair</u> for the session "Innovative Control and Communication Approaches for Smart City and Industry 4.0", organized within the international conference "Mediterranean Conference on Control and Automation (MED)", Bari, 2021
2020	<u>TPC Chair</u> for the international conference "Ad Hoc Networks and Wireless (AdHoc-Now)", Bari, 2020
2020	<u>Co-Chair</u> for the workshop "SDN-NFV: challenges, solutions, and future research trends" organized within the international conference ICTON 2020, Bari, 2020
2019	<u>TPC Chair</u> for the International Conference on Fog and Mobile Edge Computing (FMEC), Rome, 2019
2018	<u>Demo Chair</u> for the IEEE International Symposium on Local and Metropolitan Area Networks (LANMAN), Washington, DC, 2018.

- **INSTITUTIONAL RESPONSIBILITIES (if applicable)**

since 2021	<u>Vice-Coordinator</u> of the Telecommunications Engineering Master's Degree at Polytechnic University of Bari.
since 2021	<u>Member of the Review Group</u> of the Medical Systems Engineering Master's Degree at Polytechnic University of Bari.
since 2022	Member of PNRR Task Force at Polytechnic University of Bari, "Cybersecurity, new technologies, and protection of rights" topic.
since 2023	<u>Expert Aggregated Member</u> of the State Exams Committee for Engineer and Engineer Junior for the Information Sector (ELECTRONICS-TELECOMMUNICATIONS and SECURITY branch), at Polytechnic University of Bari.
since 2022	<u>Reference teacher for the PNRR orientation course</u> on "Theoretical-Practical Introduction to Internet Technologies", offered at Polytechnic University of Bari.
since 2020	<u>Member of the teaching committee</u> of the Ph.D. program in Electrical and Information Engineering (DRIEI)
since 2022	<u>Member of the teaching committee</u> of the National Ph.D. in Autonomous Systems (DAUSY)
2018-2022	<u>Member of the "Giunta di Dipartimento"</u>, of the Department of Electrical and Information Engineering (DEI) at Polytechnic University of Bari.
2021-2022	<u>Member of the Scientific Committee for the short master</u> in "Cybersecurity" at Polytechnic University of Bari.
2020	<u>Member of the local organization for the 2020 edition of CyberChallenge.IT</u> at Polytechnic University of Bari.

- **REVIEWING ACTIVITIES (if applicable)**

since 2016	<u>Associate Editor</u> for the Wireless Communications and Mobile Computing journal, Hindawi (ISSN: 1530-8669)
since 2017	<u>Associate Editor</u> for the Internet Technology Letters journal, Wiley (ISSN: 2476-1508)
since 2016	<u>Associate Editor</u> for the Sensors journal, MDPI (ISSN 1424-8220)
since 2019	<u>Guest Editor</u> for the following special issues: (1) special issue "Next Generation of Security and Privacy in IoT, Industry 4.0, 5G Systems and Beyond," jointly managed by the following international MDPI journals: Journal of Cybersecurity and Privacy, Sensors, Future Internet, Algorithms, and Cryptography, (2) special issue of the international journal Computer Networks (Elsevier), titled "Federated Learning and Blockchain Supported Smart Networking in Beyond 5G (B5G) Wireless Communication", (3) special issue of the international journal Sensors (MDPI), titled "Emerging Methodologies and Practical Solutions for M2M and D2D Communications in the Internet of Things Era", (4) special issue of the international journal Applied Science (MDPI), titled "Terahertz Communications: Present and Future"
since 2009	<u>Member of the Technical Program Committee</u> for several international conferences.Piro performed an intense reviewing activity for many international journals (IEEE Trans. on Wireless Networks, IEEE Trans. on Vehicular Technology, IEEE Trans. on Multimedia, IEEE JSAC, Springer Wireless Networks, Wiley Trans. on Emerging Telecommunications Technologies, Elsevier Digital Signal Processing, Wiley Internet Technology Letter, IEEE Trans. on Network and Service management, Elsevier Computer Networks, and IEEE IoT Journal).
Since 2019	<u>Ph.D. thesis evaluator</u> for the following Ph.D. students: Dr. Giacomo Genovese (Universita' Mediterranea), Dr. Mattia Quadrini (University of Rome "Tor Vergata"), Dr. Giovanni Perin (University of Padua), Dr. Fernandez Gambin (University of Padua), Dr. Thembelihle Lihle Dlamin (University of Padua), Dr. Stanislav Abaimov (University of Rome "Tor Vergata"), Dr. Pietro Russo (University of Rome "Tor Vergata").

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

since 2012	<u>Member of the Institute of Electrical and Electronics Engineers (IEEE).</u>
2013-2015	<u>Member of the IETF 6tisch WG</u>, and author of the Internet Draft entitled "Layer-2 security aspects for the IEEE 802.15.4e MAC", draft-piro-6tisch-security-issues-03
2014-2016	<u>Member of the IEEE P1906.1 WG</u>, and contributor of the IEEE Std 1906.1-2015 entitled "Recommended Practice for Nanoscale and Molecular Communication Framework", 2016

Eindhoven University of Technology, TU/e (NL) and Hamad bin Khalifa University (Qatar). Research topics developed in collaboration: cybersecurity and the study of Adversarial Machine Learning techniques applied to Physical Layer Fingerprinting (detection and/or impersonation of radio devices).

CTTC, Barcelona (ES). Research topics developed in collaboration: design of heterogeneous cellular networks powered by alternative energy sources, design and performance analysis of Machine Learning and Multi-Task Machine Learning architectures to support traffic classification and prediction in mobile radio networks and optimization of services assisted by the Multi-Access Edge Computing paradigm.

Curriculum vitae DOMENICO STRICCOLI [POLIBA]

● **PERSONAL INFORMATION**

STRICCOLI, Domenico

ORCID number: https://orcid.org/0000-0003-2904-6961

URL for web site: http://telematics.poliba.it/striccoli

● **EDUCATION**

2004	PhD Doctoral degree obtained from Polytechnic University of Bari, Italy. Title thesis: "Bandwidth estimation algorithms in video distribution system". Supervisor: Prof. Pietro Camarda
2000	Degree in Electronic Engineering Degree in Electronic Engineering degree (cum laude) from Polytechnic University of Bari. Thesis title: "Aggregate bandwidth estimation in video distribution systems.". Supervisor: Prof. Pietro Camarda.

● **CURRENT POSITION**

2005   Assistant Professor in Telecommunications (SSD ING-INF/03) at the Department of Information Engineering (DEI), Polytechnic University of Bari.

Responsibilities in different national and international projects, such as H2020 GUARD (2019-ongoing), "3GPP Narrow-Band Internet-of-Things (NB-IoT) User Sensor Integration into Satellite" funded by ESA (2020 – ongoing); PICO&PRO, FURTHER, RAFAEL and AGREED funded by Italian MIUR (2018 – ongoing), PON RES NOVAE (2012-2015), PON DSS (2011-2014); INTENTO (2019 – 2021), ESHELF (2019-2020), PS PS025 (2009-2012), PS121 (2006-2009), PS DIPIS (2006-2009).

● **PREVIOUS POSITIONS**

2000 may-dec.   HW / SW programmer and technician at Lucana Sistemi s.r.l., Matera, Italy

● **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2021 – 2024   Dr. Giancarlo Sciddurlo, PhD in Electrical and Information Engineering (DRIEI). Title of the doctoral thesis: Architecting Advanced IoT Services: from Communication to Social

Perspective.

since 2005   Supervising both BS and MSc thesis activity at the Polytechnic University of Bari.

● INSTITUTIONAL RESPONSIBILITIES

2021 – 2024   Deputy Coordinator for the course of Biomedical System Engineering - Bachelor Degree

2021 – 2024   Lecturer guarantor for the Master's degree in Information Engineering at the II Faculty of Engineering in Taranto.

2005   Member of the "Student Practices" commission of the C.U.C. in Information Engineering Information Engineering at the 2nd Faculty of Engineering in Taranto.

● REVIEWING ACTIVITIES

since 2005   Reviewer for the international journals, such as Springer Mobile Networks and Applications (MONET), Springer Wireless Personal Communications, Canadian Journal of Communication, IEEE Transactions on Vehicular Technology, Transactions on Emerging Telecommunications Technologies, Wireless Networks Journal. Striccoli is reviewer for the following international conferences: International Conference on Intelligent Computing (ICIC 2007), IEEE International Conference on Computational Intelligence for Measurement Systems and Applications (CIMSA 2007), 2013 International Conference of Computer as a Tool (EUROCON 2013), 2013 IEEE 77th Vehicular Technology Conference (VTC2013).

● CERTIFICATIONS

2017   Huawei Certified Network Associate - Huawei Networking Technology and Device (HCNA-HNTD)

Curriculum vitae ALESSIO FASCISTA [POLIBA]

● PERSONAL INFORMATION

ALESSIO, FASCISTA

ORCID number: https://orcid.org/0000-0001-6645-6391

URL for web site: https://telematics.poliba.it/fascista/

● EDUCATION

2019   PhD

Doctoral degree (cum laude) obtained from University of Salento, Italy. Thesis title: "Cooperative Positioning based on Array Processing and Information Fusion". Supervisor: Prof. Angelo Coluccia.

2015   Second Level Degree in Computer Engineering

Second Level Degree in Computer Engineering (cum laude) from University of Salento. Thesis title: "Algorithms for the detection of road-side unit crossing times in vehicular networks ". Supervisors: Prof. Angelo Coluccia and Giovanni Ciccarese.

2013   First Level Degree in Information Engineering

First Level Degree in Information Engineering from University of Salento. Thesis title: "Progettazione e realizzazione di un server di autenticazione per l'accesso ad un impianto di home automation basato sullo standard KNX". Supervisor: Prof. Luigi Patrono.

- **CURRENT POSITION**

since 2023   <u>Tenure Track Assistant Professor</u> in Telecommunication (SSD ING-INF/03) at the Department of Information Engineering (DEI), Polytechnic University of Bari.

- **PREVIOUS POSITIONS**

2020 – 2023   <u>Assistant Professor</u> (Ricercatore a tempo determinato L.240/10 tipo A) at the Department of Innovation Engineering (DII) of University of Salento.

2019 – 2020   <u>Research Fellow</u> (Assegnista di Ricerca) at the Department of Innovation Engineering (DII) of University of Salento.

- **FELLOWSHIPS AND AWARDS**

2019   <u>Top cited paper</u> with the contribution "Hybrid TOA/RSS range-based localization with self-calibration in asynchronous wireless networks" published in the Journal of Sensor and Actuator Networks 2019.

2021   <u>Best Ph.D. Dissertation Award</u> for the PhD Thesis: "Cooperative Positioning based on Array Processing and Information Fusion", IEEE Intelligent Transportation Systems Society (ITSS), September 2021.

2022   <u>"Francesco Carassa Award"</u> for the presentation "Advanced Detection and Estimation Techniques for Emerging Location-Aware Applications" and for the contributions in the Signal Processing area, Consorzio Nazionale Interuniversitario per le Telecomunicazioni (CNIT), Sept. 2022.

2022   <u>Top 2% scientist</u>, according to the ranking presented in "Ioannidis, John P.A., "October 2023 data-update for "Updated science-wide author databases of standardized citation indicators"", Elsevier Data Repository"".

2023   <u>Best Paper Award</u> for the contribution "Energy Threshold Setting With Bounded Performance for Sensing and Communications Under the η-μ Model", from the IEEE Aerospace & Electronic Systems Society (AES) at IEEE TechDefense 2023.

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

since 2015   Supervising both BS and MSc thesis activity since 2015. In particular, he has supervised about 20 thesis since 2015 at the University of Salento.

- **ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

2023   <u>Co-Chair</u> for the "6th International Workshop on Small-Drone Surveillance, Detection and Counteraction Techniques (WOSDETC)" and for the challenge "Drone-vs-Bird Detection Challenge" organized as part of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Greece, June 2023.

2022   <u>Co-Chair</u> for the "5th International Workshop on Small-Drone Surveillance, Detection and Counteraction Techniques (WOSDETC)" and for the challenge "Drone-vs-Bird Detection Challenge" organized as part of the International Conference on Image Analysis and Processing (ICIAP), Lecce, May 2022.

2021   <u>Co-Chair</u> for the "4th International Workshop on Small-Drone Surveillance, Detection and Counteraction Techniques (WOSDETC)" and for the challenge "Drone-vs-Bird Detection Challenge" organized as part of the IEEE International Conference on Advanced Video and Signal based Surveillance (IEEE AVSS), virtual due to COVID-19 pandemics.

2020   <u>Co-Chair</u> for the "3rd International Workshop on Small-Drone Surveillance, Detection and Counteraction Techniques (WOSDETC)" and for the challenge "Drone-vs-Bird Detection Challenge" organized as part of the IEEE International Conference on Advanced Video and Signal based Surveillance (IEEE AVSS), Washington (USA).

2019   <u>Co-Chair</u> for the "2nd International Workshop on Small-Drone Surveillance, Detection and Counteraction Techniques (WOSDETC)" and for the challenge "Drone-vs-Bird Detection Challenge" organized as part of the IEEE International Conference on Advanced Video and Signal based Surveillance (IEEE AVSS), Taipei (Taiwan).

2017 Member of the Technical Program Committee (TPC) for the "1st International Workshop on Small-Drone Surveillance, Detection and Counteraction Techniques (WOSDETC)" and for the challenge "Drone-vs-Bird Detection Challenge" organized as part of the IEEE International Conference on Advanced Video and Signal based Surveillance (IEEE AVSS), Lecce (Italy).

● **INSTITUTIONAL RESPONSIBILITIES (if applicable)**

2021 Member of the local organization for the 2021 annual meeting of the "Gruppo Telecomunicazioni e Tecnologie dell'Informazione (GTTI)" from University of Salento.

● **REVIEWING ACTIVITIES (if applicable)**

since 2024 Ph.D. thesis evaluator for the following Ph.D. students: Dr. Alda Xhafa, Universitat Autonoma de Barcelona (UAB), Spain.

since 2022 Guest Associate Editor for the collections "Signal Processing and Machine Learning for Autonomous Systems", "Distributed Fusion Approaches on Sensor Control and Navigation", and "Rising Stars in Radar Signal Processing 2022", edited by Frontiers in Signal Processing.

since 2021 Associate Editor for the IEEE Open Journal of the Communications Society (OJCOMS), Wireless Communications Area.

since 2021 Guest Associate Editor for the Special Issue "UAV Detection, Classification, and Tracking", Sensors (MDPI).

since 2015 Member of the Technical Program Committee for several international conferences. Intense reviewing activity for many international journals (IEEE Transactions on Wireless Communications, IEEE Transactions on Signal Processing, IEEE Transactions on Signal and Information Processing over Networks, IEEE Signal Processing Letters, IEEE Transactions on Intelligent Transportation Systems, IEEE Transactions on Vehicular Technology, IEEE Transactions on Aerospace and Electronic Systems, IEEE Transactions on Mobile Computing, IEEE Sensors, IEEE Internet of Things Journal, IEEE Access, IEEE Communications Letters, Signal Processing (Elsevier), IET Radar Sonar and Navigation, IEEE Transactions on Cognitive Communications & Networking, IEEE Open Journal of the Communications Society, IEEE Wireless Comm. Letters, IEEE Trans. on Communications).

● **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

since 2023 Member of the Technical Area Committee (TAC) in Signal Processing for Multisensor Systems of the European Association for Signal Processing (EURASIP).

since 2015 Member of the Institute of Electrical and Electronics Engineers (IEEE), IEEE Signal Processing Society and IEEE Communications Society.

● **MAJOR COLLABORATIONS**

Universitat Autonoma de Barcelona (UAB) and Chalmers University of Technology: Research topics developed in collaboration: design of localization, synchronization, channel estimation, and sensing techniques for fixed and mobile nodes in millimeter-wave (mmWave) 5G and beyond 5G wireless systems.

Centre for Research & Technology Hellas (CERTH), Greece and Fraunhofer Institute of Optronics, System Technologies and Image Exploitation (IOSB), Germany. Research topics developed in collaboration: study of advanced signal processing techniques for the identification and automatic tracking of aerial nodes such as UAVs.