Raffaele Bolla

Full professor

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Education and training

1994

Philosophiae Doctor in Telecommunications

University of Genoa - Genoa - IT

1989

Master Degree in Electronic Engineering

University of Genoa - Genoa - IT

Academic experience

2004 - 2012
Associated Professor

University of Genoa - Genoa - IT

1996 - 2004
Researcher

University of Genoa - Genoa - IT

Language skills

English
Proficient

French
Basic

Research interests

My current general research interests are about Internet Technologies, Mobile Cellular Networks, Cyber Security, ICT Virtualization and Internet Privacy.

I am the founder and head of a laboratory and a research group called Telecommunications Networks and Telematics (TNT, www.tnt-lab.unige.it), supported jointly by DITEN and CNIT, and composed of two university professors (Prof. Davoli and Prof. Bolla), two CNIT researchers and an average of ten collaborators, including post-doc fellows, fixed-term researchers, technicians and doctoral students.

I have been and I am responsible for the University and the CNIT of numerous research projects and contracts both with public institutions (Italian Ministries, Regional Authorities, European Union, ...) and with private companies operating in the Telecommunications sector (Telecom Italia , Selex Communications, Alcatel Lucent, Ericsson, Intel, ...). Among the

most important projects we can mention: ECONET (Low Energy COnsumption NETworks), an Integrated Project of the FP7 of 10 million Euros of cost, of which he was the coordinator in the UdR CNIT area of Genoa; the European Network of Excellence (NoE) TRENDs (Towards Real energy-efficient Network Design), four H2020 projects: INPUT (In-Network Programmability for Next-Generation Personal Clout Service SupporT), ARCADIA (A Novel Reconfigurable By Design Highly Distributed Applications Development Paradigm Over Programmable Infrastructure), MATILDA (A flexible network applications' development, verification and orchestration framework) and ASTRID (AddreSing ThReats for virtualIseD services), the project "Future Internet Energy Efficiency" (FINE2) "among the projects" of great importance " of the Ministry of Economic Development (MISE), the Intermediate NoE (Interactive Media with Personal Networked Devices), the PRIN SORPASSO (flexible SOftware Router PlAtform for Secure Service-specific Overlay networks) of which he was the national coordinator.

I have carried out and I am carrying out a significantly number of activities in the field of standardization: I was the principal and author of the study entitled "Benchmarking on the current branded solutions for mobile chargers" for the GeSi (Global e-Sustainability Initiative) presented to the ITU-T Study Group 5 during the "Universal Charger standardization process"; the ETSI selected me as a member of three Specialist Task Force: 439 and 516 on Global KPIs for energy and 515 efficiency; I am part of the "Guidelines for Environmental Sustainability Standard for the ICT Sector" project within the ITU-T Study Group 5; I am a co-founding member of the IEEE ComSoc Green Communications relevant subcommittee; I am part of the CEN-CLC-ETSI JCG M462 "Joint coordination group on energy efficiency use in fixed and mobile information and communication networks".

I also carry out an intensive review activity for international journals (IEEE / ACM Transaction of Networking, IEEE Transaction on Vehicular Technology, Computer Networks, ...), projects and congresses and I have been part of several international congress technical committees (ITC, SPECTS, QoS-IP, Globecom, ...).

I am the co-author of more than 200 scientific publications in international journals, books and congresses (with two works awarded the best paper awards) and I have been a keynote speaker in various events and conferences.

My main past research skills are in the modeling and control of multi-service IP networks (with a specific focus on bandwidth allocation/resources, dynamic routing, admission control of calls, classification at the application level of IP traffic and monitoring and measures), in the context of the use of cellular networks for the estimation of vehicular traffic and finally in the study, project and analysis of performance of high-performance Software Routers.

My current interests and research activities are mainly focused on: i) mechanisms and techniques for the reduction of energy consumption in telecommunications networks using virtualized paradigms (Network Function Virtualization), ii) The approaches of "Softwarization" of networks through NFV and Software Defined Networking (SDN) with a particular focus on the 5G context, iii) Integration among Fog, Edge Computing and

telecommunications networks, including orchestration issues, iv) the use of blockchain in virtualized environments, v)
cyber security in virtualized environments and, finally, vi) the management of Internet Privacy.