PERSONAL INFORMATION   Franco Davoli

Professor Emeritus
Adjunct Professor

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Sex M | Date of birth 28/03/1949 | Nationality Italian

WORK EXPERIENCE

2020 - present   **Professor Emeritus**
University of Genoa
• Professor of Telecommunication Networks

Business or sector University

1990 - 2019   **Full Professor**
University of Genoa
• Professor of Telecommunication Networks

Business or sector University

1985 -1990   **Associate Professor**
University of Genoa
• Associate Professor of Telecommunication Networks
Business or sector University

1989 -1991   **Adjunct Professor**
University of Parma
• Professor of Telecommunication Networks

Business or sector University

1979 -1985   **Assistant Professor**
University of Genoa
• Assistant Professor of Control Theory and of Telecommunication Networks

Business or sector University

1976 - 1978   **Research Assistant**
National Research Council (CNR)
• Research activity in estimation theory and decentralized control.

Business or sector Research

EDUCATION AND TRAINING

1969 - 1975   *Laurea* degree in Electronic Engineering
University of Genoa
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PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
Polish	B2	B1	B2	B2	A2
German	B1	A2	A2	A2	A2
French	B1	C1	A2	A2	A2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Independent user	Basic user	Independent user

Levels: Basic user - Independent user - Proficient user
Digital competences - Self-assessment grid

ADDITIONAL INFORMATION

Publications
Presentations
Projects
Conferences
Seminars
Honours and awards
Memberships
References
Citations
Courses
Certifications

Prof. Davoli has been the **PI in a number of research projects** funded by the Italian National Research Council (CNR), by the Italian Ministry of University and Research (MUR), by the Italian Space Agency (ASI), and by the European Commission (EC), among others, as well as in contracts with private companies and public administrations. With CNR, he participated in the Special Programs in Telecommunications and in Transportation in the 1990s.

He participated in numerous **committees for the evaluation of research**. He acted as a member of the review panel of experts for the EC project ST-1999-20033 QOSIPS ("Quality of Service and pricing Differentiation for IP Services") in the period 2001-2002; he was evaluator of a European Research Council (ERC) Starting Grant Proposal - ERC 2012; in 2013 he was a member of the panel of experts for the evaluation of national projects funded by FCT (*Fundação para a Ciência e a Tecnologia*), Lisbon, Portugal (re-joined in 2015, 2016, 2018, 2019, 2020, 2021, 2022 and 2024), and evaluator for the Polish Ministry of Science and Higher Education of research infrastructure projects to be included in the Polish Roadmap for Research Infrastructures. He has evaluated other research and education proposals for institutions in Italy, Spain, Poland, Latvia, Austria, Canada, Kuwait and Hong Kong.

He **contributed to the foundation (in 1995) of the National Inter-University Consortium for Telecommunications (CNIT)**, a research organization that currently joins 42 Italian Universities; he was Vice-President of the CNIT Management Board for the term 2005-2007. On behalf of CNIT, he was the PI of the methodological part of the LABNET-1 project in Naples, Italy (2000-2003), which received overall funding of about 3.5 million Euros for CNIT alone from MUR. He has been a co-founder and the Head of the CNIT National Multimedia Communications Laboratory in Naples for the term 2003-2004, the founder and **Head of the CNIT National Laboratory of Smart and Secure Networks (S2N), based in Genoa, and a member of the CNIT Scientific Board, for the term 2016-2022**. He has served in the Management Board of the International Institute of Communications (IIC), a non-profit organization based in Genoa, Italy, for over ten years.

Prof. Davoli's **teaching activity** started in 1979 with courses in Control Theory; since 1985 he has been constantly teaching classes in Telecommunication Networks and Performance Evaluation. He supervised 18 PhD candidates and took part in 24 PhD evaluation committees (in Italy, France, Germany, Spain, Sweden, Norway, Australia and New Zealand). Over the academic years from 2012/13 to 2018/19 he was the **Coordinator of the Study Council in Telecommunications Engineering** at the University of Genoa. He retired from the University of

Genoa in Nov. 2019 and in 2020 **he has been nominated Professor Emeritus.** Since then, he has continued teaching every year a class in Network Performance Evaluation for the MSc Program in Internet and Multimedia Engineering and a class in Random Processes for Information Representation and decision Support (jointly with Prof. Raffaele Bolla) for the MSc Program in Engineering for Natural Risk Management. Since 2022 he has also been teaching a class in Queueing Theory and Teletraffic Engineering for the PhD Program in Science and Technology for Electronic and Telecommunication Engineering (STIET) and for the Joint Doctorate on Interactive and Cognitive Environments (ICE). He has been appointed Affiliate Professor of the University of Malta for the academic year 2023/2024.

Regarding **scientific editorial activity**, he has been for many years and currently is a member of the Editorial Board of the international journals *International Journal of Communication Systems* (Wiley), *Studies in Informatics and Control*, *Simulation: Transactions of The Society for Modeling and Simulation International (SCS)*. He was in the Editorial Board of *Infocommunications Journal* for the term 2011-2014. Since 2020 he is also in the Editorial Board of the *ITU Journal on Future and Evolving Technologies (ITU J-FET)* and of the MDPI journal *Future Internet*. In 1994, he was Guest Co-Editor (with Erich Lutz, DLR, Germany) of a Focus on "Multiple Access in Radio Communications Networks" in the international journal *European Transactions on Telecommunications* (*ETT*), and in 2000 he was Guest Co-Editor (with Hussein Mouftah, Queen's University, Canada, and Davide Grillo, FUB, Italy) of a Special Issue of the same journal on "Service Quality Control in Multimedia Wireless Networks". He was Guest Co-Editor in 2002 (with Erina Ferro, ISTI-CNR, Italy, and Hussein Mouftah, University of Ottawa, Canada) of a Special Issue of the *International Journal of Communication Systems* (Wiley) on "Wireless Access to the Global Internet". In 2022 he has been Leading Guest Editor of a Special Issue of the *ITU Journal on Future and Evolving Technologies (J-FET)* on "Integrated and Autonomous Network Management and Control for 6G Time-Critical Applications".

He has been active in the **organization of international conferences**. He was Program Co-Chair of the 30th Summer Computer Simulation Conference (SCSC'98), Reno, NV, USA; Vice-Program Chair of the 1999 Symposium on Performance Evaluation of Computer and Communication Systems (SPECTS), Chicago, IL, USA; Program Chair of SPECTS 2000, Vancouver, Canada and of SPECTS 2001, Orlando, FL, USA; Senior Program Chair of SPECTS 2002, San Diego, CA, USA, and of SPECTS 2003, Montreal, Canada; he was Vice-General Chair of SPECTS 2004, San Jose, CA, USA, and of SPECTS 2005, Philadelphia, PA, USA. In 2005 he was Program Co-Chair of the Tyrrhenian International Workshop on Digital Communications (TIWDC 2005), Sorrento, Italy. He was the General Co-Chair, initiator and main organizer of the INGRID Workshops (2007, 2008, and 2009), *International Workshop on Distributed Cooperative Laboratories – "Instrumenting" the Grid*. Starting in 2010, he has been Co-Chair of the Steering Committee of the INGRID Workshop series; the proceedings of the INGRID Workshops appeared in a series of Edited Books by Springer, of which he was a co-Editor. He was Program Co-Chair of the 30th IEEE International Conference on Distributed Computing Systems (ICDCS 2010), Genoa, Italy, June 2010; General Co-Chair of the SCS Summer Simulation Multi-Conference, Genoa, Italy, July 2012; Workshop Co-Chair of IEEE INFOCOM 2013, Torino, Italy, April 2013; General Co-Chair of the 24th Tyrrhenian International Workshop on Digital Communications (TIWDC 2013) – Green ICT, Genoa, Italy, Sept. 2013; Co-organizer of the Panel on "Energy efficiency, network performance and users' Quality of Experience in a scalable Future Internet" at the 25th International Teletraffic Congress (ITC 25), Shanghai, China, Sept. 2013; Workshop Co-Chair of the 26th International Teletraffic Congress (ITC 26), Karlskrona, Sweden; he was General Co-Chair of SPECTS 2015, Chicago, IL, USA, and General Co-Chair of the 29th International Teletraffic Congress (ITC 29), Genoa, Italy, Sept. 2017. He has been Co-Organizer and Co-Chair of the 1st International Workshop on Network Energy Efficiency in the Softwarization Era (GreenNet 2022), in conjunction with the IEEE International Conference on Network Softwarization (NetSoft 2022), Milan Italy, June 2022, Co-organizer and Co-Chair of GreenNet 2023 – the IEEE ICC 2023 Second International Workshop on Green and Sustainable Networking, in conjunction with the 2023 IEEE International Conference on Communications, Rome, Italy, June 2023, and General Co-Chair of the IEEE Co-sponsored 2023 International Conference on Computer, Information and Telecommunication Systems (CITS), Genoa, Italy, July 2023. In 2024 he has been General Co-Chair of the IEEE co-sponsored 7th International Balkan Conference on Communications and Networking (BalkanCom 2024), Ljubljana, Slovenia, June 2024, and Co-organizer and Co-Chair of GreenNet 2024 – the IEEE ICC 2024 Third International Workshop on Green and Sustainable Networking, in conjunction with the 2024 IEEE International Conference on Communications, Denver, CO, USA, June 2024. He has also taken part in the Technical Program Committee of several other conferences, including IEEE Globecom, ICC and Infocom.

	He has been invited as **keynote speaker** in international conferences, among which ICETE 2007 in Barcelona, Spain; ATNAC 2010 in Auckland, New Zealand; the 1st International Workshop on Sustainable Internet and Internet for Sustainability (SustaInet 2011) in Lucca, Italy; NGI 2012 in Karlskrona, Sweden; the 22nd ITC Specialist Seminar on Energy Efficient and Green Networking (SSEEGN 2013) in Christchurch, New Zealand; SIMULTECH 2017, in Madrid, Spain; ITNAC 2019 in Auckland, New Zealand; CCCI 2021 (IEEE International Conference on Communications, Computing, Cybersecurity and Informatics 2021). He has been invited speaker at the Special Session on "Modeling Challenges in the Emerging Internet Applications" within the International Teletraffic Congress 2020 (ITC 32), Osaka, Japan. He gave Tutorials on Green Networking at the 4th International Conference on Communications and Electronics (ICCE 2012), Hue, Vietnam, August 2012, and at the COST "ACROSS" Summer School "NFV meets Big Data: Architecture and Performance Evaluation", Würzburg, Germany, April 2015. He was a member of the Panel on Managing for Green: Management for sustainable and energy-efficient networks, held at the IEEE/IFIP Network Operations and Management Symposium (NOMS 2022), Budapest, Hungary, April 2022. During summer 2004 and summer 2011 he was **Visiting Erskine Fellow** at the University of Canterbury, Christchurch, New Zealand (https://www.canterbury.ac.nz/engage/erskine/roll/year/honour-roll-2004/ - https://www.canterbury.ac.nz/engage/erskine/roll/year/honour-roll-2011/). He has **co-authored over 400 scientific publications in international journals, book chapters and international conference proceedings**, and he is serving as a reviewer for a number of international journals (among others, *IEEE/ACM Transactions on Networking, IEEE Transactions on Communications, IEEE Transactions on Vehicular Technology, IEEE Transactions on Network and Service Management, IEEE Journal on Selected Areas in Communications* and *InternationalJournalofCommunicationSystems*). His current h-index and total citation numbers are 21 and 2539, respectively, on Scopus (28 and 4377 on Google Scholar). Franco Davoli has been doing **consulting activities** in various areas in Telecommunication Networks, for both private companies and public administrations, including a long-lasting co-operation with some motorway administrations on transport telematics. He can speak and write English fluently, has an average spoken knowledge of Polish, and understands and speaks some French and German. His current **research interests** are in resource allocation and control in high-speed multiservice networks, satellite and mobile radio networks, sensor networks and IoT, multimedia communications, cooperative distributed laboratories, green networking, flexible and programmable heterogeneous networks, and 5G/6G networks. He coordinated the participation of CNIT in the SatNEx European Network of Excellence (NoE), devoted to satellite communications, and in the European projects GRIDCC, RINGrid, and DORII, which regarded the remote control of instrumentation and its integration in Grid middleware architectures. He was involved in the INTERMEDIA NoE, focused on home multimedia networking. He participated in ECONET, a Large-Scale Integrating Project (IP) coordinated by CNIT-University of Genoa Research Unit in the 7th EU Framework Programme (FP7) with the role of WP leader. He participated in the H2020 INPUT (In-Network Programmability for next-generation personal cloUd service support) European project, also coordinated by CNIT-University of Genoa Research Unit, and in the SatNex Network of Experts funded by ESA. He was the coordinator of the H2020 European project MATILDA (A Holistic, Innovative Framework for the Design, Development and Orchestration of 5G-Ready Applications and Network Services over Sliced Programmable Infrastructure) and he is presently the **coordinator of the H2020 5G-PPP project 5G-INDUCE (Open cooperative 5G experimentation platforms for the industrial sector NetApps - 2021-2024)**. He is a member of the Expert Advisory Group of the NetWorld2020 (now NetWorldEurope) European Technology Platform for communications networks and services. He is a **Life Senior Member** of the IEEE.

ANNEXES	

Selected recent journal publications (2018-2024)	[1] G. Baldini, R. Bolla, R. Bruschi, A. Carrega, F. Davoli, C. Lombardo, R. Rabbani, "Toward sustainable O-RAN deployment: An in-depth analysis of power consumption", *IEEE Transactions on Green Communications and Networking*, (Early access), 2024, DOI 10.1109/TGCN.2024.3426108. [2] R. Bolla, R. Bruschi, F. Davoli, C. Lombardo, A. Mohammadpour, R. Trivisonno, W. Y. Poe, "Adaptive reliability for the automated control of human robot collaboration in beyond 5G networks", *IEEE Transactions on Network and Service Management*, vol. 20, no. 3, pp. 2489-2503, Sept. 2023. [3] E.-V. Depasquale, F. Davoli, H. Rajput, "Dynamics of research into modeling

the power consumption of virtual entities used in the telco cloud", *Sensors*, vol. 23, art. 255, pp. 1-69, Jan. 2023.

[4] D. Borsatti, G. Davoli, C. Lombardo, D. Selvi, R. Bruschi, W. Cerroni, F. Davoli, C. Raffaelli, R. Trivisonno, R. Bolla, "Increasing safety levels in human-machine interaction by beyong-5G wireless redundancy", *ITU Journal on Future and Evolving Technologies*, vol. 3, no. 3, pp. 589-601, Dec. 2022.

[5] F. Davoli, M. Marchese, F. Patrone, "Flow assignment and processing on a distributed edge computing platform", *IEEE Transactions on Vehicular Technology*, vol. 71, no. 8, pp. 8783-8795, Aug. 2022.

[6] R. Bolla, R. Bruschi, C. Lombardo, F. Davoli, J. F. Pajo, "Multi-site resource allocation in a QoS-aware 5G infrastructure", *IEEE Transactions on Network and Service Management*, vol. 19, no. 3, pp. 2034-2047, Sept. 2022.

[7] E.-V. Depasquale, F. Davoli, H. Abdul Salam, "PAD: a graphical and numerical enhancement of structural coding to facilitate thematic analysis of a literature corpus", *MethodsX*, vol. 9, art. 101633, Feb. 2022.

[8] J. F. Pajo, G. Kousiouris, D. Kyriazis, R. Bruschi, F. Davoli, "ANNs going beyond time series forecasting: An urban network perspective", *IEEE Communications Magazine*, vol. 59, no. 5, pp. 88-94, May 2021.

[9] R. Bruschi, F. Davoli, C. Lombardo, J. F. Pajo, "Managing 5G network slicing and edge computing with the MATILDA telecom layer platform", *Computer Networks*, vol. 194, pp. 1-14, July 2021.

[10] R. Bolla, R. Bruschi, F. Davoli, J. F. Pajo, "A model-based approach towards real-time analytics in NFV infrastructures", *IEEE Transactions on Green Communications and Networking*, vol. 4, no. 2, pp. 529-541, June 2020.

[11] R. Bruschi, R, Bolla, F. Davoli, A. Zafeiropoulos, P. Gouvas, "Mobile edge vertical computing over 5G network sliced infrastructures: an insight into integration approaches", *IEEE Communications Magazine*, vol. 57, no. 7, pp. 78-84, July 2019.

[12] R. Bruschi, F. Davoli, P. Lago, J. F. Pajo, "A multi-clustering approach to scale distributed tenant networks for mobile edge computing", *IEEE Journal on Selected Areas in Communications*, vol. 37, no. 3, pp. 499-514, March 2019.

[13] F. Davoli, C. Kourogiorgas, M. Marchese, A. Panagopoulos, F, Patrone, "Small satellites and CubeSats: survey of structures, architectures, and protocols", *International Journal of Satellite Communications and Networking*, vol. 37, no. 4, pp. 343-359, July/Aug. 2019.

[14] L. Boero, R. Bruschi, F. Davoli, M. Marchese, F. Patrone, "Satellite networking integration in the 5G ecosystem: Research trends and open challenges", *IEEE Network*, vol. 32, no. 5, pp. 12-18, Sept./Oct. 2018.