

Curriculum Vitae (Concise Version)

Education

Antonella Ferrara received her MSc Degree (5 years program) in Electronic Engineering (Cum Laude and printing honors) in 1987, and her Ph.D. in Computer Science and Electronics in 1992, both awarded by the University of Genoa.

Professional Experience

She was Assistant Professor in the Department of Communication, Computer and System Sciences of the University of Genova (1992-1998). In November 1998 she became Associate Professor of Automatic Control at the University of Pavia. Since January 2005 she has been Full Professor of Automatic Control, first in the Department of Computer Engineering and Systems Science of the University of Pavia (2005-2011), and then in the newborn Department of Electrical, Computer and Biomedical Engineering (ECBE) of the same university.

Institutional Roles

At the University of Pavia, she is the founder and Head of the Intelligent Robotics Laboratory. She was the President of the Research Standing Committee of the Department of Electrical, Computer and Biomedical Engineering (October 2021-Settembre 2024). She was the Delegate for International Mobility of Computer Engineering and Computer Science students (2006-2023). She is a member of several departmental governing bodies, committees and panels.

Teaching

She currently teaches *Process Control* (6 credits; one credit corresponds to 7.5 hours of teaching), *Robot Control* (6 credits), and *Nonlinear Control* (4 credits) in the MSc programs in Computer Engineering and Industrial Automation Engineering. All courses are taught in English.

She also teaches “Control of Vehicle Dynamics” (10 hours) in the Post-Bachelor Program on Race Engineering, and “Control and State Estimation in Modern Power Networks” (2 hours) in the Intensive School for Advanced Graduate Studies entitled “A Smart Grid for Energy Management: the IoT approach”. She is one of the creators and contributors to the PhD courses *Systems and Control Colloquia I* (3 credits) and *Systems and Control Colloquia II* (3 credits), launched in the 2023–2024 academic year.

Graduate Students, Ph.D students and PostDoc Supervision

She supervised 15 PhD students (4 of them are now Professors in international institutions), co-supervised 3 PhD students, several PostDocs and Visiting Research Fellows (including 2 MSCA Postdoctoral Fellows), and more than 250 graduate (MSc) students.

Plenary Lectures and other Invited Lectures

She was invited to give eleven Plenary Lectures and one Semi-plenary Lecture in international scientific conferences.

She was frequently invited to give lectures in International Schools for Ph.D. students. She was Visiting Professor at Graz University of Technology, as well as Visiting Scholar and Invited Lecturer at Harvard University and at the University of Minnesota. She was Invited Lecturer at University of California at Los Angeles (UCLA), University of Stuttgart, Technical University of Delft, INRIA Grenoble, King Abdullah University of Science and Technology (KAUST) in Jeddah, Hanyang University in Seoul, Universidade

Federal do Rio de Janeiro, Brazil, Dalian Maritime University in China, National Institute of Technology Silchar, Assam, India, IIT Kharagpur, India, Murdoch University in Australia, École Polytechnique Fédérale de Lausanne, Nanjing University of Science and Technology in China, Imperial College London, University of Cambridge, University of Exeter, and Maynooth University, CentraleSupélec at the Université Paris-Saclay, Brussels Institute for Advanced Studies, KU Leuven, among others. She was a Visiting Researcher at ULB and VUB, in Brussels, during the BrIAS programme 2025 “Sustainable Robotics, AI and Automation” (January-February 2025).

Research Activity

Her research activity is mainly in the area of nonlinear control, with a special emphasis on control of uncertain systems and application to road traffic, automotive systems, electro-mobility, robotics and power systems.

Publications

She is the author and co-author of over 500 publications, including more than 175 journal papers, two monographs (published by Springer Nature and SIAM, respectively), two edited books (IET and Springer Nature), and one book currently in preparation (Springer Nature), apart from 32 book chapters.

See <https://scholar.google.com/citations?user=r5JuMskAAAAJ> for a list of her publications.

Leadership in Competitive Projects Involving Control Technology Transfer

She played a leading role in attracting more than €10 million in research funding to her institution through the following projects (and others).

Principal Investigator in European and International Projects:

- EU HORIZON-MSCA-2023-PF-01 project **RACE** (Robust Control Strategy for Dynamic Lane Change of Intelligent Articulated Heavy Vehicle in Complex Traffic Environment), (November 2024-October 2026).
- HORIZON-MSCA-2023-PF-01 project **FEASIBLE** (Federated Learning-based Distributed Control for Heterogeneous Platoons of Connected Autonomous Electric Vehicles), (October 2024-November 2026).
- Bilateral Project **E-COSMOS**, “Electric Charging Optimization for Sustainable Mobility Systems”, in the framework of the Memorandum of Understanding between Italy and Serbia, 22 marzo 2023. Starting date: April 1st, 2025, 36 months.
- France-Italy **Gallilée Projet Henry Curien** with the University of Limoges - Robotics & Mechatronic Team at XLIM Research Institute (2020-2022)
- European Project **ITEAM** (Interdisciplinary Training Network in Multi-Actuated Ground Vehicles, Marie Skłodowska-Curie Action) (2016-2019)
- International Europe-Mexico **FONCICYT**, project n° 93302, “Automation of Energy Production Processes via Sliding Modes”, (2009-2011)
- European Project **PROTECTOR** (Preventive safety for un-protected road users), IST-1999-10107, (January 2000-March 2003).

National Coordinator in National Projects (coordinating more Research Units and being PI of her Unit):

- National Project **PRIN 2022** “Sustainable Mobility Control Strategies for Urban and Extra-Urban Traffic via Electric Connected and Automated Vehicles and Buses,” Project Code: 2022BB9JC9 (1 October 2023-28 February 2026)

Principal Investigator in National Projects:

- Principal Investigator leading the Occupational Robotics Team in the Project “Fit for Medical Robotics - Fit4MedRob”, (PNC0000007), involved in Spoke n. 1, Clinical Translation & Innovation, and in Spoke n. 2, Biorobotic and Digital Platforms. The Fit for Medical Robotics (Fit4MedRob) is an initiative, coordinated by the Italian National Research Council (2022-2026) (*Unit grant € 5 million*)
- **PRIN PNRR, supported by the European Union – Next Generation EU**, “HeRo-MAC Heterogeneity on the Road - Modeling, Analysis, Control”, (November 2023-February 2026)
- Project **PRIN05** "Control of Advanced Transmission, Suspension, Steering and Braking Systems for the Management of Vehicle Dynamics" (2006-2007)
- Regional Project for remote learning “An accessible-from-remote intelligent robotics lab on human-robot interaction and cooperation” (2020)

Member of the Research Team in International and National Projects:

- "**National Centre for HPC, Big Data and Quantum Computing**", (MUR: CN00000013 – CUP ENTE: F13C22000710007, (Spoke 6) on: “Multiscale Modelling and Engineering Applications” (*Unit grant € 2,159,249*)
- European Project **HYCON2** (Highly-complex and Networked Control Systems) and UNIPV Scientific Responsible for activities related to the Traffic Show Case (2010-2014)
- Regional Project **Re-Hub-ility**, on robotic rehabilitation (2019-2022)
- European Project **ENIAC IMPROVE** (2009-2011) on implementing manufacturing science solutions to increase equipment productivity and fab performance.
- European Project **INTEGRATE** (2013-2015) on implementing manufacturing science solutions to increase equipment productivity and fab performance.
- European Project **AP@HOME** (2010-2014) on design of control strategies for artificial pancreas.
- European Project **MAS3950024 AMADEUS (II)**, “Advanced manipulator for deep underwater systems”, under the Program MAST, “Marine Sciences and Technology”, (1996-1998).
- European Project **MAS20016 AMADEUS**, “Advanced manipulator for deep underwater systems”, under the Program MAST, “Marine Sciences and Technology”, (1993-1995).

Scientific Collaborations with Industry

Antonella Ferrara was scientific leader in research projects with companies. She developed projects in collaboration with industry that also involved graduate and Ph.D. students of her group. In other cases the collaboration was established within the framework of European and National Projects or in the form of consultancy. Some of the companies with which she collaborated are listed hereafter:

- ATOM
- ENI
- Volvo
- Skoda
- Jaguar
- AVL
- IPG
- Virtual Vehicle
- RSE (Ricerca sul Sistema Energetico)
- Fedegari

- Centro Ricerche FIAT
- MAN
- IBEO
- Siemens
- Ferrari F1
- Whirlpool
- Logic
- Riso Scotti
- Ansaldo Trasporti
- Autostrade
- Autostrade Valdostane

Editorial Activity

She was Associate Editor of the *IEEE Transactions on Control Systems Technology*, of the *IEEE Transactions on Automatic Control*, and of the *IEEE Control Systems Magazine*. She was Subject Editor of the *International Journal of Robust and Nonlinear Control* and she is still a member of the Journal Editorial Board. She was Associate Editor and Senior Editor of the *IEEE Transactions on Intelligent Vehicles*. Since 2018 she has been Associated Editor of *Automatica*, and, since January 2022, Senior Editor of *IEEE Open Journal of Intelligent Transportation Systems*. She was a member of the *IEEE Transactions on Intelligent Vehicles* Steering Committee representing the IEEE Control Systems Society (CSS Liaison Representative) (2021-2023).

She was Series Editor of the book series “*Advances in Industrial Control*” published by Springer Nature (2018-2021).

Conference-Related Activities

She was and currently is member of the International Program Committee of several international conferences and events. She was *Program Chair* of the IEEE Workshop on Variable Structure Systems held in Abu Dhabi in October 2024, and *Chair of the International Program Committee* of the IFAC Modeling, Estimation, and Control Conference 2024 (MECC 2024) held in Chicago on October 27-30, 2024. Moreover, she was *Program Vice-Chair* of the European Control Conference (ECC 2014) held in Strasbourg, France, *Program Vice-Chair* of the 22nd IEEE Mediterranean Conference on Control & Automation (Med14) held in Palermo, Italy, *Program Co-Chair* of the IEEE IES International Conference on Mechatronics (ICM) 2019 held in Ilmenau, German, and *Program Co-Chair* of the 8th IEEE International Conference on Connected Vehicles and Expo (ICCVE) held in Graz, Austria.

She was *Editor* of the IFAC Symposium on Control in Transportation Systems (CTS) 2018 held in Savona, Italy, as well as *Publication Chair* for IEEE Conference on Decision and Control 2019 (CDC 2019) held in Nice, France.

She will serve as *Program Chair* the Conference on Control Technology and Applications CCTA 2028 in Berlin, and, together with Maurice Heemels, as *Program Chair* for the 24th IFAC World Congress to be held in Amsterdam, The Netherlands, in 2029.

She has been serving as a member of the European Control Association (EUCA) Council since 2015 and, since the European Control Conference in 2019 (ECC 2019), she has been the *EUCA Conference Editorial Board Chair*, leading a board comprising about 170 Associate Editors and contributing to the program preparation of the European Control Conference (ECC).

Other Activities

Among many other activities, she currently is one of the Organizers (with Maria Chiri, Queen’s University; Qiang Du, Columbia University; Paola Goatin, INRIA; Benedetto Piccoli, Rutgers University) of the Long Program “Modeling and Control of Vehicular Traffic and Transportation Systems”, Institute for Mathematical and Statistical Innovation (IMSI), Chicago, IL, March-May 2027.

IEEE Service Activities

At present (since January 2023), she is *Director of Operations of the IEEE Control System Society* and member of the ExCom of that society. Moreover, she is ex officio member of the IEEE Control System Society Board of Governors and Long-Term Planning Committee. She is a member of the CSS IEEE Fellow Nomination Committee (since 2024). She served in several IEEE CSS Awards Sub-Committees. She is Chairing one Sub-Committee at the moment.

She was “appointed member” of the Board of Governors of the IEEE Control Systems Society in 2012. She was Chair of the Women in Control Committee of the IEEE Control Systems Society (July 2013-December 2016). She was “elected member” of the Board of Governors of the IEEE Control Systems Society for the triennium 2016-2018. She was member of the IEEE Control System Society Outreach Task Force (2017-2019) and was a Chair of the Outreach Task Force during 2020.

She is an active member of: IEEE TC on Automotive Control, IEEE TC on Smart Cities, and IEEE TC on Variable Structure Systems. She is also appointed member of the IEEE ITS Society Long-Term Planning Committee (since January 2025).

IFAC Service Activities

She is the *Vice-Chair for industry* of IFAC Technical Committee (TC) 2.3 on Nonlinear Control for the triennium 2024-2026 and member of the IFAC Industry Board. She is a member of the IFAC Conference Board (starting from July 2023).

She is a member of the IFAC Fellow Search Committee (for the triennium 2024-2026) and served in many IFAC Awards Committees.

She is an active member of the IFAC TC on Nonlinear Control Systems, IFAC TC on Transportation Systems and IFAC TC on Intelligent Autonomous Vehicles.

EUCA Service Activities

- Chair of the EUCA Conference Editorial Board (CEB) (since March 2018).
- Member (ex officio) of EUCA Council (since 2019)
- Member of EUCA Council (2015-2018).

Awards and Fellowships

Among several awards, she was a co-recipient of the *2020 IEEE Transactions on Control Systems Technology Outstanding Paper Award*.

She is IEEE Fellow (2020 class) and IFAC Fellow (2021-2023 class), Fellow of the European Academy of Sciences (EurASc) since 2025, and Fellow of the Asia-Pacific Artificial Intelligence Association (AAIA) since 2024. She is a *Senior Fellow* of the Brussels institute for Advanced Studies (since January 2025).

Other Appointments and Information

She is one of the eleven experts appointed by the Italian Ministry of Research to write the National Research Plan for the period 2021-2027 for the research area “Sustainable Mobility”.

Since June 2019 she has been part of the Italian Database <https://100esperte.it> including women regarded as national leading experts in STEM and other sciences.

She is listed in the top 2% of highly cited researchers' rankings produced by Stanford University scientists in cooperation with publisher Elsevier BV and the SciTech Strategies Inc, based on Scopus data. One of her papers has received the "Top Viewed Paper Certificate" from Wiley as one of the top viewed papers in the International Journal of Robust and Nonlinear Control in 2023.

Pavia, April 2026