

Antonella Ferrara's Curriculum Vitae

University of Pavia

Antonella Ferrara was born in Genova, Italy. She received the Laurea Degree in Electronic Engineering (cum Laude) in 1987 and the Ph.D. in Computer Science and Electronics in 1992 from the University of Genova. 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 is 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.

Teaching:

She teaches "Process Control and Robotics" and "Advanced Automation and Control" (both in English) in the Master Degree Programs in Computer Engineering and Industrial Automation Engineering. She also teaches "Control of Vehicle Dynamics" (in English) in the Post-Bachelor Program on "Race Engineering" and in the Post-Bachelor Program on "Design and Development of Vehicle Dynamics".

Plenary, Semi-plenary and Invited Lectures:

She was invited to give 5 Plenary lectures and 1 Semi-plenary in international conferences. She is frequently invited to give lectures in International Schools for Ph.D. students.

She was Visiting Professor at Graz University of Technology, and Invited Lecturer at Harvard University, University of Minnesota, University of California at Los Angeles (UCLA), University of Stuttgart, Technical University of Delft, INRIA Grenoble, King Abdullah University of Science and Technology (KAUST), Jeddah, Hanyang University, Seoul, Universidade Federal do Rio de Janeiro, Brazil, Dalian Maritime University, China, National Institute of Technology Silchar, Assam, India, IIT Kharagpur, India (IEEE CSS Chapter), Murdoch University, WA, Australia (invited by the IEEE IES, Western Australia Chapter), École Polytechnique Fédérale de Lausanne, Switzerland, School of Automation at Nanjing University of Science and Technology, Imperial College, London, and Cambridge University.

Research Topics and Publications:

Her research activities are mainly in the area of nonlinear control of complex systems, with application to robotics, road traffic, even in presence of connected and automated vehicles, automotive systems, and power systems.

She has authored or co-authored more than 400 scientific papers, with 145 international journal papers, 2 scientific monographs and an edited book. Moreover, she contributed with 28 invited chapters to edited books.

Editorial Activity:

She was Associate Editor of the IEEE Transactions on Control Systems Technology (2001-2004), of the IEEE Transactions on Automatic Control (2007-2012), and of the IEEE Control Systems Magazine (2014-2019).

She was Subject Editor of the International Journal of Robust and Nonlinear Control (2017-2020). She was Associate Editor (2018-2019), and since 2020 she has been Senior Editor of the IEEE Transactions on Intelligent Vehicles.

Since January 2022 she has been Senior Editor of IEEE Open Journal of Intelligent Transportation Systems (since January 2022). Since 2018 she has been Associated Editor of Automatica.

Since January 2021 she has been a member of the *IEEE Transactions on Intelligent Vehicles* Steering Committee, representing the IEEE Control Systems Society (CSS Liaison Representative). In 2022 she has been elected Secretary of the *IEEE Transactions on Intelligent Vehicles* Steering Committee.

She was and currently is member of the International Program Committee of several international conferences and events. She also served in the role of Program Co-Chair, Program Vice-Chair and Publication Chair. For instance, she was Program Co-Chair of the 8th IEEE International Conference on Connected Vehicles and Expo (ICCVE), Graz, Austria, November 4-8, 2019. She was Editor of the IFAC Symposium on Control in Transportation Systems CTS 2018, Savona, Italy, June 2018, and Member of the National Organization Committee of that event.

Since 2006, she has been **member of the IPC** of the International IEEE Conference on Intelligent Transportation Systems and of the IEEE Intelligent Vehicles Symposium.

She has been Chair of the conference editorial board of the European Control Association (EUCA) since the European Control Conference ECC 2019, managing a board of 140 associate editors.

Leadership in International and National Projects:

Antonella Ferrara was Principal Investigator in:

- the European Project ITEAM (Interdisciplinary Training Network in Multi-Actuated Ground Vehicles, Marie Skłodowska-Curie Action), 2016-2019.
- the International Europe-Mexico Project FONCICYT (2009-2011) on complex and intelligent systems.
- the National Project PRIN05 "Control of Advanced Transmission, Suspension, Steering and Braking Systems for the Management of Vehicle Dynamics" (2006-2007).

- The European Project IST-1999-10107 PROTECTOR (Preventive safety for unprotected road user) January 2000-March 2003.

She is Principal Investigator in the Galilee Project France-Italy (2020-2022) with the University of Limoges on drones control. She was member of the team in several other European and national projects.

She was scientific leader of several research projects funded by companies focused on automotive engineering, including racing engineering, ADAS, reliable planning and control for automatic driving.

Awards and Recognitions:

Antonella Ferrara is Fellow of IEEE.

She received the following awards:

- *2020 IEEE Transactions on Control Systems Technology Outstanding Paper Award, for "A Robust Consensus Algorithm for Current Sharing and Voltage Regulation in DC Microgrids", coauthored by Michele Cucuzzella, Sebastian Trip, Claudio De Persis, Xiaodong Cheng, and Antonella Ferrara, in IEEE Transactions on Control Systems Technology, vol. 27, no. 4, pp. 1583-1595, July 2019.*
- "EPSON EMEA WIN-A-ROBOT Award", 2019.
- "Outstanding Reviewer for Automatica", 2006.
- "IEEE IV'2002 Best Poster Award" at IV'2002 IEEE Intelligent Vehicle Symposium, Versailles, France, 2002.
- "IEEE Electrical Engineering Student Award" North Italy Section, 1996.

apart from several best presentation awards at conferences.

Awards assigned to papers she co-authored:

- "IEEE CSS Italy Chapter Best Young Author Paper Award" to Gian Paolo Incremona for paper

G. P. Incremona, A. Ferrara, L. Magni, "Asynchronous Networked MPC With ISM for Uncertain Nonlinear Systems", IEEE TRANSACTIONS ON AUTOMATIC CONTROL, Vol. 62, No. 9, pp. 4305- 4317, September 2017

- "IEEE CSS Italy Chapter Best Young Author Paper Award" to Mara Tanelli for paper

M. Tanelli, A. Ferrara. "Enhancing Robustness and Performance via Switched Second Order Sliding Mode Control", IEEE TRANSACTIONS ON AUTOMATIC CONTROL (ISSN: 0018-9286), Vol. 58, No. 4, pp. 962-974, April 2013.

In addition, she participated as Mentor, guiding a team of master students of the University of Pavia, in the *Bosch Future Mobility Challenge 2021* (Pavia Roboteam) on autonomous driving. The team qualified for the finals.

Scientific Societies and Technical Committees:

She is member of the IEEE Intelligent Transportation Systems Society (ITSS), member of the IEEE Control Systems Society (CSS), and member of IEEE Women in Engineering.

She is member of the IEEE Technical Committee on Variable Structure and Sliding Mode Control, member of the IEEE Technical Committee on Automotive Control, member of the IEEE Technical Committee on Smart Cities, member of the IFAC Technical Committee on Transportation Systems, member of the IFAC Technical Committee on Nonlinear Control Systems and member of the IFAC Technical Committee on Intelligent Autonomous Vehicles.

She was “appointed member” of the Board of Governors of the IEEE Control Systems Society for year 2012. She was Chair of the Women in Control Committee of the IEEE Control Systems Society (July 2013-December 2016) and, at present, she is member of the Advisory Board of that committee. She was “elected member” of the Board of Governors of the IEEE Control Systems Society for the the triennium 2016-2018. She was member of the IEEE Control System Society Outreach Task Force (2017-2019) and was Chair of the IEEE Control System Society Outreach Task Force in 2020. She is incoming member of the ExCom of the IEEE Control System Society with the role of Director of Operations (2023-2026 term).

In 2015-2019 she was a Member of the European Control Association (EUCA) Council.

Other Services:

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

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

In 2019 she has been called, with the role of *Expert*, to join the Technical Committee on Sustainable Mobility of the Italian Ministry of University and Scientific Research (MIUR). She is one of the experts appointed by the Italian Ministry of Research (MUR) to develop the National Research Plan 2021-2027 for the research area “Sustainable Mobility”.