

Paolo Ferrari

Curriculum Vitae



2019 - today

Full Professor in Electric and electronic measurements (ING-INF/07) at the University of Brescia.

2015 - 2019

Associate Professor in Electric and electronic measurements (ING-INF/07) at the University of Brescia.

2004 - 2015

Assistant professor in Electric and electronic measurements (ING-INF/07) at the University of Brescia.

2003-2000

PhD in Electronic Instrumentation at the University of Brescia. Cycle XV. Title of PhD thesis "Development of electronic instrumentation for distributed sensing", tutor Prof. Daniel Marioli.

1999

Laurea degree in Electronic Engineering at the University of Brescia. Title of the thesis: "Development and implementation of a high performance frequency meter for resonant sensors between 1MHz and 10MHz ", supervisor Prof. D. Marioli, co-supervisor Dr. A. Flammini. Vote: 110/110 cum laude.

Curriculum

The professional expertise includes real-time systems based on microprocessors, DSP, and FPGA applied to: signal processing of sensor output; performance measurement and optimization of industrial communication networks, time synchronization of distributed networks. The research activity includes field bus systems, Real Time Ethernet networks, wireless networks for sensors and controls, software defined radio, sensor networking, smart sensor, and the development of measurement methods and tools. Special attention has been paid to the time synchronization through Ethernet (or wireless) for industrial and civil applications. On these topics, in 2012, he received the TECHNICAL AWARD of the IEEE Instrumentation and Measurement Society, with the following motivation "For his contribution to the analysis and experimental evaluation of clock synchronization in real-time applications for industry". The contribution to the development of instruments for evaluating the performance of the transmission systems of measurement information in the industrial sector, is also noticeable.

He was responsible, on behalf of the Dipartimento di Ingegneria dell'Informazione, of the Project "SCUOLA – Smart Campus as Urban Open LABs", funded by Regione Lombardia with the grant "Smart Cities and Communities".

He was the responsible for the research unit of Brescia in the PRIN 2009: Next-generation of hybrid networks for measurement and industrial automation - Wired / wireless performance characterization and measurement.

He is responsible for several “applied research” contracts between the Department and companies or consortia (e.g. A2A, ABB, EnergyLaser) in the field of Real-time networks and sensor networks for industry.

Since 2004, he participates in the technology transfer with the company CSMT Gestione Scarl jointly held by the University of Brescia. In particular, within CSMT Gestione Scarl, he manages the activities of the "PROFIBUS and PROFINET Competence Center" accredited with the PROFIBUS International Association.

During the period from 2004 to 2017 he held various positions within the technical committees of national and international regulations, including CEI (Italian Electrotechnical Committee) and IEC (International Electrotechnical Commission) in the field of industrial communications.

He served in the Program Committee of several international conferences, including ETFA, WFCS, ISPCS, SAS, MetroIND, and I2MTC, all of them organized by the IEEE.

He is regular reviewer of several international journals, including IEEE Transactions on Instrumentation and Measurement, IEEE Sensors Journal, IEEE Transactions on Industrial Informatics, IEEE Transactions on Automation Science and Engineering, IEEE Communications Letters, Elsevier Sensors & Actuators: A. Physical, Elsevier Mechatronics Journal.

Since 2002 he was professor for various courses. To date, he is professor of the module “Sensori Intelligenti e bus di campo” (ING-INF/07) the Master degree course in Electronics Engineering, and professor of the module "PLC and distributed systems" (ING-INF/07) in the degree course in Automation Engineering.

Since 2002 he was supervisor of more than 80 thesis works.

He is the author of more than 150 international papers (scientific journals, patents and conference proceedings).

External links

- [Google Scholar direct link](#)
- [Scopus direct link](#)
- [ORCID direct link](#)

Publications

INTERNATIONAL JOURNALS

- [I1] 1 A. Flammini, P. Ferrari, E. Sisinni, D. Marioli, A. Taroni, "Sensor interfaces: from field-bus to Ethernet and Internet", *Sensors and Actuators A: Physical*, September, 2002, Vol. 101, N. 1-2, pp. 194-202, DOI 10.1016/S0924-4247(02)00201-7.
- [I2] A. Flammini, P. Ferrari, E. Sisinni, D. Marioli, A. Taroni, "Sensor integration in industrial environment: from fieldbus to web sensors", *Computer Standards & Interfaces*, May, 2003, Vol. 25, N. 2, pp. 183-194, DOI 10.1016/S0920-5489(02)00071-5.
- [I3] P. Ferrari, A. Flammini, D. Marioli, A. Taroni, "High-resolution multichannel instrument for resonant sensor array", *IEEE Trans. Instrumentation and Measurement*, June, 2003, Vol. 52, N. 3, pp. 932-937, DOI 10.1109/TIM.2003.814681.
- [I4] A. Depari, P. Ferrari, A. Flammini, D. Marioli, A. Taroni, "Programmable logic device-based interface for resonant sensor arrays", *IEE Electronics Letters*, November, 2004, Vol. 40, N. 23, pp. 1481-1483, DOI 10.1049/el:20046481.
- [I5] P. Ferrari, A. Flammini, D. Marioli, E. Sisinni, A. Taroni, "A Bluetooth-based sensor network with Web interface", *IEEE Trans. Instrumentation and Measurement*, December, 2005, Vol. 54, N. 6, pp. 2359-2363, DOI 10.1109/TIM.2005.858564.
- [I6] A. Depari, P. Ferrari, V. Ferrari, A. Ghisla, A. Flammini, D. Marioli, A. Taroni, "Digital signal processing for biaxial position measurement with a pyroelectric sensor array", *IEEE Trans. Instrumentation and Measurement*, April, 2006, Vol. 55, N. 2, pp. 501-506, DOI 10.1109/TIM.2006.864252.
- [I7] P. Ferrari, A. Flammini, D. Marioli, A. Taroni, "IEEE802.11 sensor networking", *IEEE Trans. Instrumentation and Measurement*, April, 2006, Vol. 55, N. 2, pp. 615-619, DOI 10.1109/TIM.2006.870105.
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- [I9] P. Ferrari, A. Flammini, D. Marioli, A. Taroni, "An experimental approach to estimate real-time characteristic of PROFINET IO versus PROFIBUS DP V2", *WSEAS Transactions on Circuits and Systems*, April, 2006, Vol. 5, N. 4, pp. 485-492.
- [I10] A. Depari, P. Ferrari, A. Flammini, D. Marioli, A. Taroni, "A VHDL Model of a IEEE1451.2 Smart Sensor: Characterization and Applications", *IEEE Sensors Journal*, May, 2007, Vol. 7, N. 5, pp. 619-626, DOI 10.1109/JSEN.2007.894900.
- [I11] A. Depari, P. Ferrari, A. Flammini, D. Marioli, A. Taroni, "A New Instrument for Real-Time Ethernet Performance Measurement", *IEEE Trans. Instrumentation and Measurement*, January, 2008, Vol. 57, N. 1, pp. 121-127, DOI 10.1109/TIM.2007.908341.
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- [I13] P. Ferrari, A. Flammini, D. Marioli, E. Sisinni, A. Taroni, "Coexistence of Wireless Sensor Networks in Factory Automation Scenarios", *Sensors & Transducers Journal*, April, 2008, Vol. 90, N. 4, pp. 48-60.

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BOOK CHAPTERS

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CONFERENCE PROCEEDINGS

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