

## Curriculum Vitae

### MARIA PIA FANTI

Full Professor, Chair of the Laboratory of Automation and Control at the Department of Electrical and Information Engineering, Polytechnic of Bari (Italy)

**IEEE fellow for contributions to modeling and control of discrete event systems**

#### POSITIONS

**Full Professor**, Polytechnic of Bari, Italy (Since April 2012)

**Associate Professor**, Polytechnic of Bari, Italy (November 1998- April 2012)

**Assistant Professor**, Polytechnic of Bari, Italy (May 1990 - November 1998)

**Assistant Researcher**, Laboratory of Automation and Control, Polytechnic of Bari, Italy (October 1983)

“Laurea” degree in Electronic Engineering, University of Pisa, Pisa, Italy, March 28, 1983.

#### MAIN RESEARCH AREAS

##### *Automation and control systems*

This activity started in 1983 during the research work at the Laboratory of Automation and control. Different problems of control and modeling related to manufacturing systems, guided vehicle systems, automated storage and retrieval systems, railway networks, traffic networks are addressed.

##### *Petri nets*

Petri nets are the main framework used by prof. Fanti for control and modeling issues. This research theme has been developed in collaboration with other Italian and worldwide researchers.

##### *Operational research and management science*

During the last 15 years operational research tools and decision support systems are employed to manage real systems: logistic systems, supply chains, intermodal transportation systems, intelligent transportation systems.

##### *Consensus and distributed optimization*

This new research area started in 2010, two phd students worked in this topics.

#### PUBLICATIONS

Author of 281 papers: 85 journal papers including, 11 book chapters and 183 papers presented at international conferences.

Maria Pia Fanti is author of a book for teaching purpose in Italian and editor of one book.

The research activities has the following list of bibliometric indicators:

**H-index Scopus 25, citations 2537**

**H-index google Scholar 32, citations 4149**

#### PROJECTS

##### *European projects*

- EU Adriatic-Ionian Programme INTERREG V-B “FUTURE 4.0 ManuFactUring educaTion and training governance model for IndUstry 4.0 in the Adriatic-Ionian aREa”, 2018-2019.
- EU H2020 “ELVITEN, Electrified L-category Vehicles Integrated into Transport and Electricity Networks”, 2017-2020.
- EU H2020 “AEOLIX, Architecture for EurOpean Logistics Information eXchange”, 2016-2019.
- EU H2020 “optiTruck, optimal fuel consumption with Predictive PowerTrain control and calibration for intelligent Truck”, 2016-2019.
- EU H2020 “NEMO, Hyper-Network for electroMobility”, 2016-2019.
- EU CIP-ICT-PSP-2013-7, COoperative loGISTICS for sustainable mobility of goods- CO-GISTICS. Jan 2014- June 2017.

*Scientific responsible of research unit of the Italian projects:*

- Smart Cities and Communities and Social Innovation Pilot, “Applications post Directive 2010/65 in Italian port realities of the Suite MIELE to support the Authority to optimize the interOperability in the intermodAlity of city-port flows- ASMARARA” 2014-2017.
- PON 2007-2013 -“RES NOVAE - Reti, Edifici Strade: Nuovi Obiettivi Virtuosi per l’Ambiente e l’Energia” Regioni Obiettivo Convergenza Campania, Puglia, Calabria, Sicilia – Asse II, 2013-2015.
- PON “Mechatronic innovative safety systems (wired and wireless) for railway, aerospace and robotic applications (MASSIME)”, 2013-2015
- PON “LAMRECOR - Logistica Avanzata per la Mobilità di Persone e Merci: Modelli Matematici e Sperimentazioni per Nuovi Protocolli di Recapito della Corrispondenza”, 2013-2015.
- PRIN 2007 prot. 2007ZMVK5T “*Decision models for design and management of logistic networks characterized by high interoperability and information integration*”, September 22, 2007, September 22, 2000.
- PRIN 2005 prot. 2005092439 “*Analysis, optimization, and coordination of logistic and production systems*” September 2005, September 2007.
- “Medical applications for the next future (NEXMEDIA).” 2012-2014.
- “*Modelling and control of logistic systems characterized by high information integration*”, September 2008-September 2009, “Fondazione Caripuglia”.

HONORS, AWARDS, AND LISTINGS

*Keynotes Talks*

Lecture at the RPI Troy, USA, September 9, 1999, “Comparing Digraph and Petri Net Approaches to deadlock Avoidance in FMS”.

Lecture at the School of Electro-Mechanical Engineering, Xidian University, Xi’an, China, June 25, 2008: “Deadlock problems solved by graph theoretic approaches”

Lecture at the Fourth Spring School on ICT, economical and organizational issues for e-health integration in the enlarged Europe, Capo d’Istria, Slovenia, June 26-29, 2008 “Modelling by Petri nets: Basic concepts and applications to the hospital management”

*Plenary speech* at the 6th International Conference on Informatics in Control, Automation and Robotics, Milan, July 2-4, 2009: “Impact of the ICT on the management and performance of Intelligent Transportation Systems”.

*Plenary speech* at the IEEE SOSE 2012 7<sup>th</sup> International Conference on Systems of Systems, Genoa July 16-19 2012: “New Consensus Protocols for Agent Networks with Discrete Time Dynamics and Distributed Task Assignment”

Lecture “Modelling, simulation and control by discrete event system approaches: research projects and application fields” Automated Production Research Laboratory, Ecole Normale Supérieure de Cachan, 16 November 2012.

Lecture “Fault Detection by Labeled Petri Nets in Centralized and Distributed Approaches” presso la School of Electro-Mechanical Engineering, Xidian University, Xi’an, China, November 21, 2014.

Lecture “Quantized Consensus Algorithm for Distributed Task Assignment: Results and Applications” presso la School of Electro-Mechanical Engineering, Xidian University, Xi’an, China, November 20, 2014.

Lecture “Fault Detection by Labeled Petri Nets in Centralized and Distributed Approaches” Automated Production Research Laboratory, Ecole Normale Supérieure de Cachan, December 3, 2015.

Lecture “Consensus Algorithms and Distributed Optimization” Automated Production Research Laboratory, Novi Sad (Serbia), March 15, 2017.

*Awards*

IBM Theses Award, 1984

2008 IEEE SMC Most Active Technical Committee Award of the SMC Society, as the chair of the TC on Discrete Event Systems.

2008 IEEE SMC Best Associate Editor Award for the “Outstanding contributions as Associate Editor of the IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems and Humans”.

EDITORIAL BOARD OF INTERNATIONAL JOURNALS

- 2013 – present *Editor* of the “IEEE Transactions on Automation Science and Engineering”.
- present *Associate editor* of the “IEEE Transactions on Systems, Man and Cybernetics: Systems”.
- 2004 - 2015 *Associate editor* of the “IEEE Transactions on Systems, Man and Cybernetics: Part A. Systems and Humans
- 2005 – 2012 *Associate editor* of the “IEEE Transactions on Automation Science and Engineering”.

- 2004 *Guest editor* of the "Special Issue on Deadlock Resolution in Computer Integrated Systems" IEEE Transactions on Systems, Man and Cybernetics: Part A. Systems and Humans, vol. 14, no. 1, pp. 80-92, January 2004.
- *Editor* with M. Zhou of the book “*Deadlock Resolution in Computer-Integrated Systems*”, Marcel Dekker Inc., New York, NY 2004.
- 2007 – 2013 *Associate editor* of the Int. J. “Enterprise Information Systems” Taylor & Francis Group.
- 2011 *Editor* of the special issue on Health Care Management and Optimization. IEEE Transactions on Systems, Man and Cybernetics: Part A.
- 2011 *Editor* of special issue “Advances in Discrete Event Systems for Automation” for the IEEE Transactions On Automation Science And Engineering.
- *Associate editor* of the Int. J. “The Mediterranean Journal of Measurement and Control”
- Member of the editorial board of “*International Journal of Automation and Control*” (IJAAC).

#### ORGANIZATION OF INTERNATIONAL CONFERENCES

1. General Chair of the 2nd IFAC Workshop on Dependable Control of Discrete Bari (Italy), 2009.
2. Co-Chair del THE THIRD INTERNATIONAL WORKSHOP ON INTELLIGENT VEHICLE, 2009.
3. Program Co-Chair of the 2009 IEEE Conference on Automation Science and Engineering, Bangalore, India.
4. Program Co-Chair of the 2009 IEEE Conference on System, Man, and Cybernetics, 2009.
5. General Chair of the IEEE Workshop on Health Care Management, 2010.
6. General Chair of the 2011 IEEE Conference on Automation Science and Engineering.
7. Program co-chair of Codit'16, Control, Decision, and Information technologies.
8. General Chair of SOLI 2017 IEEE International Conference on Service Operations and Logistics, and Informatics.
9. Program Co-Chair IEEE ICNSC 2017
10. Program Co-Chair, CoDIT'17
11. Member of the Steering committee of CASE 2017, 2018
12. General Co-Chair CoDIT'18, 5th 2018 International Conference on Control, Decision and Information Technologies.
13. General Chair of the 2019 IEEE Conference on System, Man, and Cybernetics, 2019.

#### MEMBER OF TECHNICAL COMMITTEES

- Chair of the IEEE Italy Section Chapter of Control System Society
- Founder and Chair of the IEEE Italy Section – Systems, Man, and Cybernetics Society Chapter
- Co-chair of the *Technical committee* on Discrete Event Systems of IEEE Systems, Man, and Cybernetics Society.
- 2009-2011, Member of the BoG of the IEEE System, Man, and Cybernetics Society.
- 2012-2013 Vice Chair of the IEEE Italy Section
- Chair of the Technical Committee on Automation in Logistics of the IEEE Robotics and Automation Society
- 2013-2018 Member at large of the BoG of the IEEE System, Man, and Cybernetics Society.
- 2018-2020 Member of the Administrative committee of the IEEE Robotics and Automation Society
- Member of the IFAC Technical Committees TC 1.3 on Discrete Event and Hybrid Systems.
- 2013-2016 Member of the scientific committee of the Italian Federation of Automatic Control

#### TECHNOLOGY TRANSFER

Founder and president of the Inter-University Spin Off AutoLogS s.r.l.- Automation in Logistics and Service Systems, founded in March 2013.