Curriculum of the scientific, didactic, and professional activity

Dr. Engr. Graziana Cavone

Department of Civil, Computer Science, and
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University Roma Tre – Italy

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Personal information

Biographical data

First name: Graziana
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Current position

- ***Assistant Professor (RTD-B)*** in Systems and Control Engineering (research field 09/G1) at University Roma Tre - Dept. of Civil, Computer Science, and Aeronautical Technologies Engineering.

Qualification

- ***Associate professor*** habilitation according to art. 16 of Italian Law n. 240/2010 for sector 09/G1 Automatica (year 2018, since February 2023).
- Ph.D. in Electronic and Information Engineering (University of Cagliari), with Doctor Europaeus label. Ph.D. thesis: G.Cavone, "Advanced Modeling and Control of Intermodal Terminals and Railway Networks", score: Excellent with honors, University of Cagliari, Cagliari - Italy 2018. Supervisor: Prof. Carla Seatzu, Co-Supervisor: Prof. Mariagrazia Dotoli.
- Italian State Examination and Professional Qualification to practice as an Engineer, Polytechnic of Bari, Bari – Italy, 2020, 1st session.
- Master Degree in Automation Engineering 2013 (marks 110/110 with honors, at Polytechnic of Bari - Italy): Master Degree thesis: G. Cavone, "Modeling and Simulation of Intermodal Transport Terminals with Timed Petri Nets". Supervisor: Prof. Mariagrazia Dotoli.

Didactic Activity

Official Teaching Appointments
She holds or held the courses:

- "Automatic Controls" (4 ECTS) in Mechanical Engineering and Aeronautical Engineering Master' Degrees at University Roma Tre, Academic Year 2022/23.
- "Cyber Physical Systems" (6 ECTS) in Management and Automation Engineering and Computer Science Engineering Master' Degrees at University Roma Tre, Academic Year 2022/23.
- "Opacity in Discrete Event Systems: the Cybersecurity Perspective", (1 ECTS) for the Doctorate in Computer Science and Automation of University Roma Tre, course given in English language
- "Fundamental of Control Systems" (first module, 6 ECTS) in Electronic and Telecommunication Engineering Bachelor's Degree at Polytechnic of Bari - Academic Years 2021/22.
- "Fundamentals of Matlab" (2 ECTS) for the Doctorate School of Polytechnic of Bari – Academic Year 2020/21, course given in English language.
- "Analysis of Control Systems" (6 ECTS) in Logistic Systems for Agriculture Engineering Bachelor's Degree at University of Foggia - AcademicYears 2020/21, 2021/22.
- "Control Systems" (6 ECTS) in Logistic Systems for Agriculture Engineering Bachelor's Degree at University of Foggia - AcademicYears 2018/19.
- "ICT and Intermodal Transport" at the ITS Academy for Intermodal Transport 4.0 of Bari – Year 2020
- "Supply Chain and the Physical and Information Flows" at the ITS Academy for Integrated Logistics of Bari – Year 2019/20.
- "ICT Applied to Transport" at the ITS Academy for Intermodal Transport of Bari – Year 2018/19
- "Modeling, Analysis and Management of Intermodal Transport Terminal" at the ITS Academy for Multimodal Transport of Taranto, Year 2017.

Didactic Activity as an Assistant to Other Courses
She developed the numerical and experimental laboratory of the following courses:

- "Fundamentals of Control Systems" in Electronics and TelecommunicationsEngineering Bachelor Degree at Polytechnic of Bari - Academic Year 2014/15.

Teaching activity abroad
She held the following didactic activity in foreign Universities:

- Academic Year 2022-2023, lecture on "Security of Cyber Physical Systems", doctoral School of University of Coimbra, Portugal, July 2023.
- Academic Year 2020-2021, lecture on "Basics on modeling and simulating transportation systems as discrete event systems", virtual 2021 Southwest Jiaotong University Global Summer Session – South-West Jiaotong University, Chengdu, China, July 2021.

Tutoring Activity
She has been the official co-tutor of one Master Thesis of University Roma Tre, one Master Thesis of University of Cagliari, and more than 20 Master and Bachelor Theses at Politecnico di Bari,many of which have been developed in collaboration with co-tutors belonging to institutions and companies of the local regional territory.
She is currently co-tutor of 5 PhD candidate:

- Engr. Laura Filardo, Ph.D. student in Automation and Information Engineering, University Roma Tre, Italy, XXXVIII cycle (a.y. 2022-2025), on " Development of intelligent autonomous systems: solutions on the market as a starting point for university research developments".

- Engr. Augusto Bozza, Ph.D. student in Electrical and Information Engineering, Politecnico di Bari, Italy, XXXVII cycle (a.y. 2021-2024), on: "Digital Twin for the Control of Industrial Systems".
- Engr. Bahman Askari, Ph.D. student in Electrical and Information Engineering, Politecnico di Bari, Italy, XXXVI cycle (a.y. 2020-2023), on: "Control systems and optimization methods for the industrial logistics".
- Engr. Giulia Tresca, Ph.D. student in Electrical and Information Engineering, Politecnico di Bari, Italy, XXXVI cycle (a.y. 2020-2023) on: "Virtual and augmented reality in manufacturing lines for performance and maintenance optimization in industry 4.0".
- Engr. Silvia Proia, Ph.D. student in Industry 4.0 (Interuniversity PhD Course of Polytehnic of Bari in collaboration with Universita' degli Studi di Bari "Aldo Moro"), XXXVI cycle (a.y. 2020-2023) on: "Decision and control techniques for collaborative robotic systems in industry 4.0".

Didactic services
She is going to be member of the Council of professors:
- from November 2023 (cycle XXXIX): Information and Automation Engineering PhD Course of University Roma Tre.

Scientific activity

Research topics
The scientific activity addressed mainly the following fields of automation:
- Decision Support Systems, modeling, simulation, management and control of complex systems;
- Modelling, control and optimization for industrial applications;
- Modelling, management, and control of transport systems (logistics, intermodal transport, railway systems);
- Management and control of energy systems.

Scientific recognitions
Achievement of:
- ***Associate professor*** habilitation according to art. 16 of Italian Law n. 240/2010 for sector 09/G1 Automatica (year 2018, since February 2023).

She is the recipient of the following researcher grant:
- from June 2022 to May 2025: RTD-B for sector 09/G1 – Automatica, research fields "Automation methods included robotics, cyber-physical systems, intelligent control, and multi-agent systems", University Roma Tre.

She was the recipient of the following fellowships in Systems and Control Engineering (research field 09/G1):
- from July 2021 to June 2022: "Decision and control techniques form mobile diagnosis modules in railway applications" at Polytechnic of Bari – Supervisor: Prof. M. Dotoli.
- from May 2020 to June 2021: "Decision and control techniques for resilient critical infrastructure in presence of uncertainty" at Polytechnic of Bari – Supervisor: Prof. M. Dotoli.
- from April 2019 to April 2020: "Real time control techniques of automotive industrial processes via Model Predictive Control" at Polytechnic of Bari – Supervisor: Prof. M. Dotoli.
- from November 2017 to March 2019: "Decision support systems for energy efficient buildings" at Polytechnic of Bari – Supervisor: Prof. M. Dotoli.

- from April 2014 to October 2014: “ICT for the sustainable management of intermodal transport systems in Smart City” at Polytechnic of Bari – Supervisor: Prof. M. Dotoli.

She was principal investigator:

- from January 2020 to June 2021: “Traffic management optimization for Urban Railway Networks based on Distributed Model Predictive Control” at Southwest Jiaotong University, Chengdu, China, National Natural Science Foundation of China - Grant No. 61950410604, call: “Research Fund for International Young Scientists” category: “International (Regional) Cooperation and Exchange Projects”.

Collaborations with national and international research groups

She collaborates with the following national and international research groups:

- research group guided by Prof. Carla Seatzu (University of Cagliari);
- research group of Dr. Nicola Epicoco and Dr. Mario Di Ferdinando (University of L’Aquila)
- research group of Dr. Yin Tong (Southwest Jiaotong University, China);
- research group led by Prof. Bart De Schutter and Ton van den Boom (Delft University of Technology, Netherlands);
- research group guided by Prof. Lidia Zakowska (Tadeusz Kościuszko Polytechnic, Poland);
- research group led by Prof. Slim Hammadi (CRIStAL Laboratory - Ecole-Central of Lille, Lille, France);
- research group of prof. João Paulo Ribeiro Pereira (Departamento de Informática e Comunicações, Instituto Politécnico de Bragança, Portugal).

Editorial Activity

She was guest editor (with R.Carli, M. Di Ferdinando, and N. Epicoco) in 2021 of the special issue of the international journal “Electronics” - section "Systems & Control Engineeringon “Novel Approaches to Improve the Efficiency and Resiliency of Dynamical Systems”.

Since 2019 she is a member of the Editorial Board for the following international journal:

- Elsevier, Results in Control and Optimization (RICO)

Since 2013 she is reviewer for international journals and conferences:

- IEEE Transactions on Automation Science and Engineering
- IEEE Transactions on Systems, Man and Cybernetics
- IEEE Transactions on Automatic Control
- IEEE Transactions on Control Systems Technology
- IEEE Transactions on Intelligent Transportation Systems
- IFAC Automatica
- IEEE Robotics and Automation Letters
- IEEE Control Systems Letters
- ELSEVIER Computers & Operations Research
- ELSEVIER Discrete Applied Mathematics
- IEEE International Control and Decision Conference
- IEEE International European Control Conference
- IEEE International Conference on Automation Science and Engineering
- IEEE International Conference on Intelligent Transportation Systems

She is a member since 2017 of the International Federation of Automatic Control Technical Committee on Control for Smart Cities (TC 9.3).
She is a member since 2017 of the International Federation of Automatic Control Technical Committee on Transportation System (TC 7.4).

She is a member since 2017 of the International Federation of Automatic Control Technical Committee on Discrete Event and Hybrid Systems (TC 1.3).
She is a member since 2018 of the IEEE Technical Committee on Intelligent Systems to Human Aware Sustainability.

She is secretary since 2023 of the Italy Chapter of the IEEE Systems, Man and Cybernetics Society.

Organization of International Scientific Events

Organizational responsibilities

She is *Diversity and Inclusion Chair* and *Local Arrangements co-chair* of the international conference:

- Automation Science and Engineering, 2024 IEEE International Conference on (CASE 2024),August 28 – September - 1, Bari, Italy.

She was *Local Arrangements Chair* of the national conference:

- 2022 Conference of the Institute for Robotics and Intelligent Machines (I-RIM 2022), October 22-25, Rome, Italy.

She was *Local Arrangements Chair* of the international conference:

- 2021 Mediterranean Conference on Control and Automation (MED 2021),June 22-25, Bari, Italy.

She was *Student Activity Chair* of the international conference:

- Automation Science and Engineering, 2020 IEEE International Conference on (CASE 2020), August 20-24, Hong Kong.

She was *Organizing Committee Member* of the workshop:

- "International Workshop on Smart Mobility in Future Cities: The Apulia Industry Summit", October 7, 2019, Bari, Italy.

Belonging to committees and editorial activity

She has been Associate Editor for the following international conferences:

- Automation Science and Engineering (CASE), IEEE International Conference on – 2017, 2018, 2019, 2020, 2021, 2022, 2023.
- Systems, Man and Cybernetics (SMC), IEEE International Conference on – 2019, 2020, 2021, 2022, 2023.
- Control Technology and Applications (CCTA), IEEE International Conference on – 2023.
- Mediterranean Conference on Control and Automation (MED) – 2021, 2022.
- Intelligent Transportation Systems (ITS), IEEE International Conference on – 2018, 2019, 2020, 2021, 2022, 2023.

She has been member of the International Program Committee of +30 international Conferences and Symposia.

She has been the chair/co-chair in the following sessions of international Conferences and Symposia:

- Special Session Co-chair: "Modelling, Management and Security of Critical Infrastructures", 1st IFAC Workshop on Control of Complex Systems (COSY2022), November 24-25, 2022, Bologna, Italy.
- Invited Session Chair: "Power Systems and Industrial Automation" – September, 16-18, 2020. (MED2020) Saint Rafael, France (Virtual conference).
- Special Session Co-chair "Formal Methods applied to Transportation and Industry 4.0", 7th International Conference on Control, Decision and Information Technologies 2020, Codit'20, June 29 – July 2, 2020, Prague, Czech Republique.

- Invited Session Co-Chair: "Planning, scheduling, and coordination of logistics and transportation systems", 15th IFAC Symposium on Control in Transportation Systems (CTS 2018), June 6-8, 2018, Savona, Italy.

Invited sessions organization

She has been the organizer of the following invited sessions of international Conferences and Symposia:

- "Robotics for logistics and transportation systems" - International Conference on Control, Decision and Information Technologies 2020, Codit'20, Rome – Italy, July 3-6, 2023.
- "Smart Transportation and Logistics Systems" - 29th MediterraneanConference on Control and Automation (MED 2021), Bari Italy, June 22-25, 2021.
- "Innovative Control and Communication Approaches for Smart City and Industry 4.0" - 29th Mediterranean Conference onControl and Automation (MED 2021), Bari Italy, June 22-25, 2021
- "Formal Methods applied to Transportation and Industry 4.0", International Conference on Control, Decision and Information Technologies 2020, Codit'20, Prague, Czech Republique, June 29 – July 2, 2020.
- "Planning, scheduling, and coordination of logistics and transportation systems", 15th IFAC Symposium on Control in Transportation Systems (CTS 2018), Savona, Italy, June 6-8, 2018.

Participation to research projects

She takes part in the following international research program:

- "Smart Design and Control of Energy Storage Systems" research project (Annex 37) supported by the ECES (Energy Conservation through Energy Storage) Technical Collaboration Program of IEA (International Energy Agency). This working group is currently investigate the present situation of smart design and control strategy of energy storage systems for both demand side and supply side.

She took part in the following national research programs:

- 2019-2022, MAIA (Railway infrastructure active monitoring) project, funded by the Italian Ministry for Education, University and Research in the context of the National Research Program 2015-2020 for the development of innovative solutions aimed at a thorough assessment of the safety and security of the railway infrastructure;
- 2018-2022, PICO&PRO (integrated and connected processes for the industrial production evolution) project, funded by the Italian Ministry for Education, University and Research in the context of the National Research Program 2015-2020 for the development of smart manufacturing in automotive;
- 2018-2021, RAFAEL (System for risk Analysis and Forecast for critical infrastructure in the ApenninEs dorsaL Regions) project, funded by the Italian Ministry for Education, University and Research in the context of the National Research Program 2015-2020 for critical infrastructure risk management and forecast in South Italy;2013-2015, RES NOVAE (Networks, Buildings, Roads: New virtuous objectives for the Environment and Energy) project, funded by the Ministry for Education, University and Research and by the Ministry of the Economic Development in the context of the National Operative Program for Research and Competitiveness 2007-2013 for the development of Smart Cities.

She took part in the following regional research projects:

- 2016-2019, UCCSM (Urban Control Center for the sustainable management of energy flows in Metropolitan Smart cities) project, funded by the Italian Apulia Region under the Innovation Technology Cluster call;

Research collaborations

Collaborations with Authorities and Enterprises of the Territory

She collaborates or has collaborated with the following authorities and enterprises of the territory:

- e-distribution SpA (Enel group), the largest electricity operator in Italy and Europe's second listed utility for installed capacity.
- Centro Ricerche Fiat SpA, an Italian company that develops innovative power units, vehicle systems, materials, methods and processes for the Fiat Chrysler Automobiles N.V. (FCA) products.
- Elettric80 SpA, world leader company in automated logistic solutions for daily consumer goods manufacturing in the beverage, food and tissue sectors and other diversified areas.
- Masmec SpA, an Italian company specialising in precision technologies, robotics and mechatronics, which are applied to automotive and biomedical.
- Icam Srl, an Italian company specialising in automated solutions for the storage, distribution and sales of goods.
- Tera Srl, an Italian company that develops ICT solutions aimed at the energy efficiency of smart homes and smart buildings.
- GTS in Bari, an Italian company leader in the intermodal transportation sector.
- Innolab Srl, a spin-off of Polytechnic of Bari.

Publication list

Since 2014 she has been co-author of +45 scientific papers for international journals and conferences

Articles accepted for publication in International Journals:

j1 Atrigna, M., Buonanno, A., Carli, R., **Cavone, G**., Scarabaggio, P., et al. "A Machine Learning Approach to Fault Prediction of Power Distribution Grids under Heatwaves", in *IEEE Transactions on Industry Applications (TIA),* in press, doi: 10.1109/TIA.2023.3262230.

j2 Tresca, G.; **Cavone, G.**; Carli, R.; Cerviotti, A.; Dotoli, M., "Automating Bin Packing: a Layer Building Optimization Module for Cost Effective Logistics", in *IEEE Transactions on Automation Science and Engineering (TASE)*, 2022, 19(3), pp. 1599-1613, doi: 10.1109/TASE.2022.3177422.

j3 **Cavone, G.**; Bozza, A.; Carli, R.; Dotoli, M., "MPC-based Process Control of Deep Drawing: an Industry 4.0 Case Study in Automotive", in *IEEE Transactions on Automation Science and Engineering (TASE)*, 2022, 19(3), pp. 1586–1598, doi: 10.1109/TASE.2022.3177362.

j4 Carli, R.; **Cavone, G.**; Pippia, T.; De Schutter, B.; Dotoli, M., "Robust Optimal Control for Demand Side Management of Multi-Carrier Microgrids", in *IEEE Transactions on Automation Science and Engineering (TASE)*, 2022, 19(3), pp. 1338–1351, doi: 10.1109/TASE.2022.3148856.

j5 Proia, S.; Carli, R.; **Cavone, G.**; Dotoli, M., "Control Techniques for Safe, Ergonomic, and Efficient Human- Robot Collaboration in the Digital Industry: a Survey," in *IEEE Transactions on Automation Science and Engineering (TASE)*, 2022, 19(3), pp. 1798–1819, doi: 10.1109/TASE.2021.3131011.

j6 Scarabaggio, P.; Carli, R.; **Cavone, G.;** Epicoco, N.; Dotoli, M., "Non-Pharmaceutical Stochastic Optimal Control Strategies to Mitigate the COVID-19 Spread," in *IEEE Transactions on Automation Science and Engineering (TASE)*, 2021, 2022, 19(2), pp. 560–575, doi: 10.1109/TASE.2021.3111338.

j7 Cavone, G., Van Den Boom, T., Blenkers, L., (...), Seatzu, C., De Schutter, B., "An MPC-Based Rescheduling Algorithm for Disruptions and Disturbances in Large-Scale Railway Networks", in *IEEE Transactions on Automation Science and Engineering,* 2022, 19(1), pp. 99-112, doi: 10.1109/TASE.2020.3040940

j8 Carli, R.; **Cavone, G.**; Epicoco, N., Scarabaggio, P.; Dotoli, M., "Model predictive control to mitigate the COVID-19 outbreak in a multi-region scenario", *Annual Reviews in Control*, 2020, 50, pp.373-393. doi: 10.1016/j.arcontrol.2020.09.005.

J9 Scarabaggio, P.; Carli, R.; **Cavone, G.;** Dotoli, M., "Smart Control Strategies for Primary Frequency Regulation through Electric Vehicles: A Battery Degradation Perspective", *Energies,* 2020, 13, 4586. doi: 10.3390/en13174586.

J10 Hosseini, S. M.; Carli, R.; **Cavone, G.**; Dotoli, M., "Distributed Control of Electric Vehicle Fleets Considering Grid Congestion and Battery Degradation," *Internet Technology Letters*, 2020, 3:e161. doi: 10.1002/itl2.161.

J11 Carli, R.; **Cavone, G.**; Othman, S. B.; Dotoli, M., "IoT based architecture for Model Predictive Control of HVAC systems in Smart Buildings," *Sensors* 2020*, 20, 5;* doi:10.3390/s20010005.

J12 **Cavone, G.**, Dotoli, M., Epicoco, N., Morelli, D., Seatzu, C., "Design of Modern Supply Chain Networks Using Fuzzy Bargaining Game and Data Envelopment Analysis", in *IEEE Transactions on Automation Science and Engineering (TASE),* 2020, 17(3), pp. 1221-1236, doi: 10.1109/TASE.2020.2977452.

J13 **Cavone, G.,** Dotoli, M., Seatzu, C., "A Survey on Petri Net Models for Freight Logistics and Transportation Systems", in *IEEE Transactions on Intelligent Transportation Systems*, 2018, 19(6), pp. 1795-1813, doi: 10.1109/TITS.2017.2737788.

J14 **Cavone, G.**, Dotoli, M., Epicoco, N., Seatzu, C., "A decision making procedure for robust train rescheduling based on mixed integer linear programming and Data Envelopment Analysis", in *Applied Mathematical Modelling,* 2017, 52, pp. 255-273, doi: 10.1016/j.apm.2017.07.030.

J15 **Cavone, G.**, Dotoli, M., Epicoco, N., Seatzu, C., "Intermodal terminal planning by Petri Nets and Data Envelopment Analysis", in *IEEE Transactions on Automation Science and Engineering,* 2016, 13(2),7057695, pp. 842-857, doi: 10.1109/TASE.2015.2404438.

J16 Dotoli, M., Epicoco, N., Falagario, M., **Cavone, G.**, "A Timed Petri Nets Model for Performance Evaluation of Intermodal Freight Transport Terminals", in *IEEE Transactions on Automation Science and Engineering,* 2016, 13(2),7057695, pp. 842-857, doi: 10.1109/TASE.2015.2404438.

J17 **Cavone, G.**, Dotoli, M., Seatzu, C., "Management of Intermodal Freight Terminals by First-Order Hybrid Petri Nets", in *IEEE Robotics and Automation Letters*, 2016, 1(1),7339445, pp. 2-9. doi: 10.1109/LRA.2015.2502905

Articles accepted for publication in International Conference Proceedings with acceptance based on submission of full paper and peer-review:

c1 **Cavone, G.,** Carli, R., Dotoli, M., "Decision and Control Approaches for Enhancing the Resilience of Distribution Networks: a Survey", *1st IFAC Workshop on Control of Complex Systems, COSY 2022,* 24 November 2022through 25 November 2022, Bologna, Italy, 55 (40), pp. 271-276, doi: 10.1016/j.ifacol.2023.01.084.

c2 Askari, B., Carli, R., **Cavone, G.**, Dotoli, M., "Data-Driven Fault Diagnosis in a Complex Hydraulic System based on Early Classification", *1st IFAC Workshop on Control of Complex Systems, COSY 2022,* 24 November 2022through 25 November 2022, Bologna, Italy, 55 (40), pp. 187-192, doi: 10.1016/j.ifacol.2023.01.070.

c3 Proia, S., **Cavone, G.**, Camposeo, A., (...), Carli, R., Dotoli, M., "Safe and Ergonomic Human-Drone Interaction in Warehouses", *IEEE International Conference on Intelligent Robots and Systems*, 2022-October, pp. 6681-6686, doi: 10.1109/IROS47612.2022.9981469.

c4 Tresca, G., **Cavone, G.**, Dotoli, M., "Logistics 4.0: A Matheuristics for the Integrated Vehicle Routing and Container Loading Problem", *IEEE International Conference on Systems, Man and Cybernetics,* 2022-October, pp. 333-338, doi: 10.1109/SMC53654.2022.9945179.

c5 Proia, S., **Cavone, G.**, Carli, R., Dotoli, M., "A Multi-objective Optimization Approach for Trajectory Planning in a Safe and Ergonomic Human-Robot Collaboration", *IEEE International Conference on Automation Science and Engineering,* 2022-August, pp. 2068-2073, doi: 10.1109/CASE49997.2022.9926513.

c6 Bozza, A., Askari, B., **Cavone, G.**, Carli, R., Dotoli, M., "An Adaptive Model Predictive Control Approach for Position Tracking and Force Control of a Hydraulic Actuator", *IEEE International Conference on Automation Science and Engineering,* 2022-August, pp. 1029-1034, doi: 10.1109/CASE49997.2022.9926645.

c7 Tong, Y., Xu, W., Dotoli, M., **Cavone, G.**, "An Integrated Model Predictive Control Method for the Rescheduling of Metro Traffic with Backup Trains", *American Control Conference*, 2022-June, pp. 4648-4653, doi: 10.23919/ACC53348.2022.9867359.

c8 Luo, J., Tong, Y., **Cavone, G.**, Dotoli, M., "A Service-Oriented Metro Traffic Regulation Method for Improving Operation Performance", *IEEE Conference on Intelligent Transportation Systems*, Proceedings, ITSC 2021-September, pp. 3533-3538, doi: 10.1109/ITSC48978.2021.9564503.

c9 Atrigna, M.; Buonanno, A.; Carli, R.; **Cavone, G.** ; Scarabaggio, P.; Valenti, M.; Graditi, G.; Dotoli, M., "Effects of Heat Waves on the Failure of Power Distribution Grid: a Fault Prediction System Based on Machine Learning", *21st International Conference on Environment and Electrical Engineering (EEEIC 2021)*, September 7-10, 2021 – Bari, Italy, pp. 1-5. doi: 10.1109/EEEIC/ICPSEurope51590.2021.9584751.

c10 Proia, S.; Carli, R.; **Cavone, G.**; Dotoli, M., "A Literature Review on Control Techniques for Collaborative Robotics in Industrial Applications", *Automation Science and Engineering, 2017 IEEE International Conference on (CASE 2021),* August 23-27, Lion, France, pp. 591-596. doi: 10.1109/CASE49439.2021.9551600.

c11 Scarabaggio, P.; Carli, R.; **Cavone, G.**; Epicoco, N.; Dotoli, M., "Modeling, Estimation, and Optimal Control of Anti-COVID-19 Multi-dose Vaccine Administration", *Automation Science and Engineering, 2017 IEEE International Conference on (CASE 2021),* August 23-27, Lion, France, pp. 990-995, doi: 10.1109/CASE49439.2021.9551418.

c12 Bozza, A.; Cavone, G.; Carli, R.; **Mazzoccoli, L.**; Dotoli, M., "An MPC-based Approach for the Feedback Control of the Cold Sheet Metal Forming Process", *Automation Science and Engineering, 2017 IEEE International Conference on (CASE 2021),* August 23-27, Lion, France, pp. 286-291, doi: 10.1109/CASE49439.2021.9551602.

c13 **Cavone, G.**; Carli, R.; Troccoli, G.; Tresca, G.; Dotoli, M., "A MILP Approach for the Multi-Drop Container Loading Problem Resolution in Logistics 4.0", *29th Mediterranean Conference on Control and Automation (MED 2021)*, June, 2021 – Bari, Italy, pp. 687-692, doi: 10.1109/MED51440.2021.9480359.

c14 **Cavone, G.**; Epicoco, N.; Carli, R.; Del Zotti, A.; Pereira, J.P.R.; Dotoli, M., "Parcel Delivery with Drones: Multi-criteria Analysisof Trendy System Architectures", *29th Mediterranean Conference on Control and Automation (MED 2021)*, June, 2021 – Bari, Italy, pp. 693-698, doi: 10.1109/MED51440.2021.9480332.

c15 Carli, R.; **Cavone, G.**; Epicoco, G.; Di Ferdinando, M.; Scarabaggio, P.; Dotoli, M., "Consensus-based Algorithms for Controlling Swarms of Unmanned Aerial Vehicles", *19th International Conference on Ad Hoc Networks and Wireless (AdHoc-Now 2020)*, Bari, Italy, 19-21 October 2020. Lecture Notes in ComputerScience, vol 12338. Springer, Cham. doi: 10.1007/978-3-030-61746-2_7.

c16 **Cavone, G.**, Epicoco, N., Dotoli, M., "Process re-engineering based on colored petri nets: The case of an Italian textile company", *2020 28th Mediterranean Conference on Control and Automation, MED 2020,* pp. 856-861, doi: 10.1109/MED48518.2020.9182937.

c17 Carli, R.; **Cavone, G.**; Pippia, T.; De Schutter, B.; Dotoli, M., "Robust MPC Energy Scheduling Strategy for Multi-Carrier Residential Microgrids", *Automation Science and Engineering, 2020 IEEE International Conference on (CASE 2020)*, August 20-24, Hong Kong, pp. 152-158, doi: 10.1109/CASE48305.2020.9216875.

c18 **Cavone, G.**, Montaruli, V., Van Den Boom, T.J.J., Dotoli, M., "Demand-Oriented Rescheduling of Railway Traffic in Case of Delays", 7*th International Conference on Control, Decision and Information Technologies, CoDIT 2020*, pp. 1040-1045, doi: 10.1109/CoDIT49905.2020.9263874.

c19 Carli, R., **Cavone, G.**, Epicoco, N., (...), Scarabaggio, P., Dotoli, M., "Consensus-Based Algorithms for Controlling Swarms of Unmanned Aerial Vehicles", *Lecture Notes in Computer Science* (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) 12338 LNCS, pp. 84-99, doi: 10.1007/978-3-030-61746-2_7.

c20 Carli, R.; **Cavone, G.**; Dotoli, M.; Epicoco, N.; Scarabaggio, P. , "Model predictive control for thermal comfort optimization in building energy management systems," in *Systems, Man, and Cybernetics (SMC), 2019 IEEE International Conference on*, 6-9 Oct. 2019, Bari, Italy, pp. 2608-2613. doi: 10.1109/SMC.2019.8914489.

c21 Carli, R.; **Cavone, G.**; Dotoli, M.; Epicoco, N.; Manganiello, C.; Tricarico, L., "ICT-based Methodologies for Sheet Metal Forming Design: A Survey on Simulation Approaches," in *Systems, Man, and Cybernetics (SMC), 2019 IEEE International Conference on*, 6-9 Oct. 2019, Bari, Italy, pp. 128-133. doi: 10.1109/SMC.2019.8914082.

c22 **Cavone, G.**, Blenkers, L., Van Den Boom, T., (...), Seatzu, C., De Schutter, B., "Railway disruption: A bi-level rescheduling algorithm", *2019 6th International Conference on Control, Decision and Information Technologies, CoDIT 2019,* pp. 54-59, doi: 10.1109/CoDIT.2019.8820380.

c23 **Cavone, G.**, Dotoli, M., Epicoco, N., Morelli, D., Seatzu, C., "A Game-theoretical Design Technique for Multi-stage Supply Chains under Uncertainty", *IEEE International Conference on Automation Science and Engineering* 2018-August, pp. 528-533, doi: 10.1109/COASE.2018.8560501.

c24 **Cavone, G.**, Dotoli, M., Epicoco, N., Seatzu, C., "Efficient Resource Planning of Intermodal Terminals under Uncertainty", *15th IFAC Symposium on Control in Transportation Systems CTS 2018*, 51(9), pp. 398-403, doi: 10.1016/j.ifacol.2018.07.065.

c25 **Cavone, G.**, Dotoli, M., Epicoco, N., Franceschelli, M., Seatzu, C., "Hybrid Petri Nets to Re-design Low-Automated Production Processes: the Case Study of a Sardinian Bakery", *14th IFAC Workshop on Discrete Event Systems WODES 2018,* 51(7), pp.265-270, doi: 10.1016/j.ifacol.2018.06.311.

c26 **Cavone, G.**, Dotoli, M., Seatzu, C., "Resource planning of intermodal terminals using timed Petri nets", *2016 13th International Workshop on Discrete Event Systems, WODES 2016,* pp. 44-50, doi: 10.1109/WODES.2016.7497824.

c27 Dotoli, M., Epicoco, N., **Cavone, G.**, Turchiano, B., Falagario, M., "Simulation and performance evaluation of an Intermodal terminal using Petri Nets", *2014 International Conference on Control, Decision and Information Technologies, CoDIT 2014*, pp. 327-332, doi: 10.1109/CoDIT.2014.6996915.

c28 Dotoli, M., Epicoco, N., Falagario, M., (...), **Cavone, G.**, Convertini, A., "A Decision Support System for real-time rescheduling of railways", 2014 European Control Conference, ECC 2014, pp. 696-701, doi: 10.1109/ECC.2014.6862177.

c29 Dotoli, M., Epicoco, N., Falagario, M., **Cavone, G.,** "A timed Petri nets model for intermodal freight transport terminals", *12th IFAC International Workshop on Discrete Event Systems (2014)*, 9(3), pp. 176-181, doi: 10.3182/20140514-3-FR-4046.00038.

c30 Albino, V.; Carli, R.; Caponio, G.; **Cavone, G.**; Costantino, N.; Dangelico, R.M.; Dotoli, M.; Falagario, M.; Mossa, G.; Mummolo, G.; Pellegrino, R.; Ranieri, L.; Savino, M.; Savino, T.; "Findings from the RES NOVAE project: a dashboard and decision support tool for the energy governance of smart cities"; *1st WORKSHOP on the State of*

the art and Challenges Of Research Efforts at POLIBA; December 3 - 5, 2014 - Politecnico di Bari, Italy; pagg. 491-501; ISBN 978-88-492-2964-6 - participation in the conference and presentation of the work.

Membership to professional organizations

She is member of the Traffic and Circulation Committee of the Italian AC – Bari, Italy since 2020.
She is Senior member since 2023 of the prominent international association IEEE (the Institute of Electricaland Electronics Engineers).
She is member since 2021 of the national association SIDRA (the Italian Society of Professors and Researchers in Automation).

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