

PERSONAL INFORMATION



Davide Tebaldi

SCHOLARLY PLATFORMS:

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Google Scholar	https://scholar.google.com/citations?hl=it&user=Yy6MTnkAAAAJ
ResearchGate	https://www.researchgate.net/profile/Davide-Tebaldi
Web of Science	https://www.webofscience.com/wos/author/record/ACN-1273-2022
Academia	https://independent.academia.edu/TebaldiDavide
LinkedIn	https://www.linkedin.com/in/davide-tebaldi-b18a4b15b/
List of Publications	https://personale.unimore.it/rubrica/pubblicazioni/datebaldi

WORK EXPERIENCE

Mar. 15th, 2023 – Today

Assistant Professor

Engineering Department Enzo Ferrari, University of Modena and Reggio Emilia, Modena.

Description

Since he became Assistant Professor, Davide has continued to work on several of his previous research topics, including the modeling and energy management of hybrid electric vehicles, the modeling and control of converters and electrical machines, the modeling and control of vehicular systems. Furthermore, Davide has started to work on collaborative robotics, including the detailed analysis of human-robot scenarios to ensure safety in the human-robot interaction.

2024

Expert Member in the examining board for the qualification to the profession of Engineer

Engineering Department Enzo Ferrari, University of Modena and Reggio Emilia, Modena.

Academic Year 2023/2024

Teacher of Automatic Controls

Engineering Department Enzo Ferrari, University of Modena and Reggio Emilia, Modena.

Course

Automatic Controls, Bachelor Degree in Computer Engineering.

Description

Davide has given 63 hours of classes (7 ECTS - European Credit Transfer System - in total) in the Automatic Control course, Scientific Disciplinary Sector ING-INF/04, in the Bachelor Degree in Computer Engineering. These classes cover the following topics: impulse and step responses of dynamical systems, frequency response of dynamical systems, Bode, Nyquist and Nichols diagrams, Nyquist and Routh criteria, steady-state errors, properties of closed-loop dynamical systems, sensitivity to parameter variations and disturbances, bandwidth, drawing and study of the root locus and of the contour locus, finite delay systems, design of lead/lag networks and inversion formulas, nonlinear systems described with the describing function method and with the circle criterion method, digital control.

2023 **Expert Member in the examining board for the qualification to the profession of Engineer**

Engineering Department Enzo Ferrari, University of Modena and Reggio Emilia, Modena.

Academic Year 2022/2023 **Teacher of Automatic Controls**

Engineering Department Enzo Ferrari, University of Modena and Reggio Emilia, Modena.

Course Automatic Controls, Bachelor Degree in Computer Engineering.

Description Davide has given 45 hours of classes (5 ECTS - European Credit Transfer System - in total) in the Automatic Control course, Scientific Disciplinary Sector ING-INF/04, in the Bachelor Degree in Computer Engineering. These classes have covered the following topics: properties of closed-loop dynamical systems, sensitivity to parameter variations and disturbances, bandwidth, drawing and study of the root locus and of the contour locus, finite delay systems, design of lead/lad networks and inversion formulas, nonlinear systems described with the describing function method and with the circle criterion method, digital control.

Mar. 1st, 2022 – Feb. 28th, 2023 **Postdoctoral Researcher**

Engineering Department Enzo Ferrari, University of Modena and Reggio Emilia, Modena.

Research Topic Title Modeling and Control of Hybrid Systems in the Agricultural and Automotive Fields.

Description During this period as postdoctoral researcher, Davide has worked on the modeling, control and efficiency analysis of several physical elements typically present in hybrid electric vehicles and in several other engineering fields, including permanent magnet synchronous motors, planetary gear sets and batteries. Davide has then worked on the development of an approach for determining the global efficiency of the entire vehicle architecture when the involved physical elements are connected in different configurations: series, parallel or power-split. Another research topic which Davide has worked on during this period concerns the modeling and the control of multilevel power converters, which are used in electric drives for hybrid electric vehicles, smart grid applications, etc. Specifically, the study has been focused on modular multilevel converters. Davide has worked on the dynamic analysis of the converter at steady-state and with sinusoidal inputs, which has led to the development of a control strategy that allows to obtain the capacitors voltage balancing and to generate the desired load current, thus maintaining the correct operation of the converter.

2022 **Expert Member in the examining board for the qualification to the profession of Engineer**

Engineering Department Enzo Ferrari, University of Modena and Reggio Emilia, Modena.

Academic Year 2021/2022 **Adjunct Professor of Automatic Controls**

Engineering Department Enzo Ferrari, University of Modena and Reggio Emilia, Modena.

Course Automatic Controls, Master Degree in Advanced Automotive Engineering.

Description Davide has given 30 hours of classes taught in english (3 ECTS - European Credit Transfer System - in total) in the Automatic Control course, Scientific Disciplinary Sector ING-INF/04, in the Master Degree in Advanced Automotive Engineering. These classes have covered the following topics: open-loop and closed-loop dynamical systems, Routh criterion, steady-state errors, Nyquist and Bode diagrams, Nyquist criterion, drawing and study of the root locus and of the contour locus, sensitivity to disturbances, stability margins, finite delay systems, bandwidth, design of lead/lad networks and inversion formulas, nonlinear systems described with the describing function method, digital control.

Nov. 1st, 2018 – Mar. 25th, 2022 **PhD Student**

Engineering Department Enzo Ferrari, University of Modena and Reggio Emilia, Modena.

Research Topic Title Mathematical Modeling, Control and Simulation of Hybrid Electric Vehicles.

Description During his PhD, Davide has worked on research topics concerning the modeling and control of many physical systems belonging to different energetic domains, and thus utilizable in different engineering applications. The physical elements which Davide has worked on include permanent magnet synchronous motors, power converters such as multiphase diode bridge rectifiers, multilevel flying-capacitor converters and modular multilevel converters, mechanical physical systems (planetary gear sets, gear trains and gear systems, transmission systems, clutches and gearboxes).

As far as planetary gear sets are concerned, Davide has worked on the development of a systematic modeling approach, which exhibits important functionalities with respect to the state of the art, including the proposal of a general dynamic model which can be used for any planetary gear set and directly implementable in the Matlab/Simulink environment. Two models are built in a fully systematic way: a full-order elastic model accounting for the elastic interaction at the gears contact points and a reduced-order rigid model. The latter is particularly suitable for real-time simulations and does not introduce any loss of information, as the tangential forces behavior at the gears contact points can still be computed.

For what concerns transmission systems, clutches and gearboxes, Davide has worked on different hybrid electric vehicle architectures, including series, parallel and power-split architectures. Davide has worked on the modeling of the different components of the transmission system for each of these architectures and on the development of control strategies for solving the Energy Management Problem.

Another branch of Davide's research activity has been focused on the development of an approach for computing the unidirectional and bidirectional efficiencies of linear and nonlinear physical systems. Such analysis has initially been made for two-ports systems, highlighting the condition on the system parameters allowing to have the same direct and reverse system efficiency as well as the different properties and characteristics of the system efficiency maps in the presence of symmetric and non-symmetric nonlinearities. The analysis has then been extended to the case of multiport physical systems.

As for the modeling of permanent magnet synchronous motors, Davide has worked on creating a new Simulink subsystem equipped with a user-friendly interface allowing the user to choose among several available options. Furthermore, based on the theoretical analysis of the linear and nonlinear physical systems efficiency, Davide has worked on the estimation of the unknown parameters characterizing the permanent magnet synchronous motor starting from the system efficiency map and from the available parameters. Davide has then developed a dedicated Matlab App for estimating the unknown parameters.

As far as multilevel power converters are concerned, Davide has worked on the modeling, control and robustness assessment of multilevel flying-capacitor converters. The main contributions of this work include the development of a compact converter model and the analysis of all the possible converter operating configurations in extended mode, that is with a higher number of output voltage levels. Davide has also worked on the robustness assessment of these converter when operating in extended mode and when controlled using a classical minimum distance approach. This has led to the proposal of a divergence index that determines the degradation of the converter operation when the number of output voltage levels increases. This work has also led to the proposal of a new closed-loop variable-step control strategy allowing to guarantee the best capacitors voltage balancing in any operating condition.

A further branch of Davide's research activity has regarded an algorithm based on parabolic interpolation for first-derivative estimation and for filtering of a sampled signal. Davide has worked on extending this algorithm so as to be able to estimate all higher-order derivatives of the sampled signal all the way up to the n-th derivative at the same time. As an application example, the computation of the first derivative of a sampled signal has been used to compute the first derivative of the state vector of physical systems modeled using a power-oriented approach. This has been in turn used to estimate the parameters of such physical systems. The computation of the first derivative of a samples signal can also find application in many other engineering fields.

Nov. 3rd, 2023 – Nov. 10th, 2023 **Invited Visiting Researcher**

Al Hussein Technical University, Jordan.

Given Seminar Modeling Control and Simulation of Hybrid Electric Vehicles and Geometric Dynamic Movement Primitives in Collaborative Robotics.

Description During this experience, Davide has given a seminar with the above-mentioned title. The first part of the seminar has described the power-oriented modeling of some physical systems employed in the automotive field and in many other engineering fields, including planetary gear sets, multilevel converters and permanent magnet synchronous motors. An overview of different hybrid electric vehicle topologies has been given, and an approach for the energy management was described. The second part of the seminar was about phase-free Geometric Dynamic Movement Primitives for collaborative robotics applications. An approach for effectively encoding the geometric information of the demonstrated trajectory has been described, by decoupling it from the time law used during the demonstration. A human-in-the-loop application for rehabilitation robotics has finally been presented.

Oct. 1st, 2021 – Jan. 31st, 2022 **Invited Visiting Scholar**

Center for Automotive Research, The Ohio State University, Columbus, Ohio, USA.

Research Topic Title Modeling, Control, Energetic Analysis and Optimal Energy Management of Hybrid Electric Propulsion Systems.

Description During this experience, Davide has worked on the modeling, control, energy analysis and optimal energy management of hybrid electric propulsion systems. Specifically, the considered vehicle architecture has been a series architecture. Davide has developed a detailed multidimensional model of the gearbox that accounts for the two main phases: gearshift taking and not taking place. Davide has then developed an algorithm for selecting the optimal gear to be engaged in order to maximize the efficiency of the electric machines driving the transmission based on the maximum efficiency path concept on the electric machine operating plane. Furthermore, Davide has developed a reduced-order model of the gearbox which is particularly suitable for applying dynamic programming, that is the optimization method which has been used as a benchmark for testing the effectiveness of the proposed algorithm for optimal gearshift.

Jun. 1st, 2018 – Oct. 31st, 2018 **Post-Degree Internship**

CNH Industrial spa, Modena.

Research Topic Title Modeling and Control of Different Hybrid Electric Propulsion Systems in the Agricultural and Construction Fields.

Description During this experience, Davide has worked on the power-oriented modeling and on the development of energy management strategies for different hybrid electric vehicle architectures, including series, parallel and power-split architectures. The different physical systems that Davide has modeled and controlled include permanent magnet synchronous motors, DC/DC and AC/DC-DC/AC power converters, mechanical physical systems such as planetary gear sets, gear trains and gear systems, transmission systems, clutches and gearboxes.

Sep. 1st, 2017 – Feb. 28th, 2018 **Master Degree Internship**

CNH Industrial spa, Modena.

Research Topic Title Modeling and Control of a Hybrid Propulsion System for a Wheel Loader.

Description During this experience, Davide has worked on the power-oriented modeling of a series hybrid electric architecture for a wheel loader. Davide has modeled the several involved physical elements, including the endothermic engine, the permanent magnet synchronous motors, the supercapacitor employed as energy storage device and the transmission system. Davide has then worked on the control of these physical elements, including the vectorial control of permanent magnet synchronous motors with or without pulse-width modulation, and on the development of an energy management strategy for minimizing the endothermic engine consumption.

Sep. 1st, 2014 – Nov. 30th, 2014 **Bachelor Degree Internship**

Automobili Lamborghini spa, Sant'Agata Bolognese.

Research Topic Title Estimation of the motive torque generated by threephase electric motor based on the source currents and voltages in order to estimate the result given by the torquemeter.

Description During this experience, Davide has worked on the estimation of the average torque generated by a threephase electric motor. Two systems have been considered, the first one consisting in two coupled threephase electric motors and the other one described by the cascade "threephase electric motor-joint-camshaft". Davide has worked on two data acquisition campaigns, for which he has also estimated the measurement uncertainty through the propagation laws. Davide has finally developed a Labview program for the estimation of the average torque generated by the threephase electric motor.

EDUCATION AND TRAINING

Nov. 3rd, 2023 – Nov. 10th, 2023 **Invited Visiting Researcher**
Al Hussein Technical University, Jordan.

Given Seminar Modeling Control and Simulation of Hybrid Electric Vehicles and Geometric Dynamic Movement Primitives in Collaborative Robotics.

Oct. 1st, 2021 – Jan. 31st, 2022 **Invited Visiting Scholar**
Center for Automotive Research, The Ohio State University, Columbus, Ohio, USA.

Research Topic Title Modeling, Control, Energetic Analysis and Optimal Energy Management of Hybrid Electric Propulsion Systems.

Nov. 1st, 2018 – Mar. 25th, 2022 **PhD in Information and Communication Technologies**
Engineering Department Enzo Ferrari, University of Modena and Reggio Emilia, Modena.

PhD Thesis Title (SDS: ING/INF-04) Mathematical Modeling Control and Simulation of Hybrid Electric Vehicles.

Sep. 1st, 2015 – Apr. 12th, 2018 **Master Degree in Electronics Engineering**
Engineering Department Enzo Ferrari, University of Modena and Reggio Emilia, Modena.

Master Degree Thesis Title Modeling and Control of a Hybrid Propulsion System for a Wheel Loader.

Sep. 1st, 2011 – Feb. 12th, 2015 **Bachelor Degree in Electronics Engineering**
Engineering Department Enzo Ferrari, University of Modena and Reggio Emilia, Modena.

Bachelor Degree Thesis Title Estimation of the Motive Torque generated by Threephase Electric Machine starting from Source Currents and Voltages to Predict the Result given by the Torquemeter.

PROJECTS HOLDER

2023/2024 **Energy-Aware Control of Physical Systems Composing Robotic Manipulators for Increasing Efficiency and Safety**
Funded by: Engineering Department Enzo Ferrari, University of Modena and Reggio Emilia, Modena, through the Finanziamento Ateneo Ricerca Dipartimentale (FARD) 2023/2024.

ATTENDED POSTGRADUATE COURSES

Mar. 1st, 2020 – May 31st, 2020 **Energy Modeling, Simulation, Optimization and Control of Hybrid and Electric Vehicles**
Organized by: Center for Automotive Research, The Ohio State University, Columbus, Ohio, USA.

ATTENDED PHD SCHOOLS

Jul. 7th, 2024 – Jul. 13th, 2024

SIDRA Summer School 2024

Organized by: Società Italiana Docenti e Ricercatori in Automatica.

Attended Courses

"Introduction to the Analysis and Control of Nonlinear Systems" and "Data-driven control design".

Aug. 30th, 2023 – Sept. 5th, 2023

1st Doctoral Summer School on Robotics and Intelligent Machines - DRIMS2 a.y. 2022/2023

Organized by: Sant'Anna School of Advanced Studies of Pisa.

Attended Courses

30 hours about the following topics: "Robot design and actuators", "Control and human centered robotics", "Vision Sensing" and "Tactile Sensing".

Project Activities

20 hours about the following project activities: "Manipulator Gripper Design, Control, Vision and Sensing in a Pick-and-Place Operation through Robotic Manipulation".

Jul. 14th, 2019 – Jul. 20th, 2019

SIDRA Summer School 2019

Organized by: Società Italiana Docenti e Ricercatori in Automatica.

Attended Courses

"Model Reduction by Moment Matching for Linear and Nonlinear Systems" and "Intelligent Collaborative Robotics".

ATTENDED WORKSHOPS AND WEBINARS**Attended Webinar****IEEE Authorship and Open Access Symposium: Tips and Best Practices to Get Published from IEEE Editors**

Hosted by: IEEE.

Attended Workshop:**Workshop Model Predictive Control of Hybrid Dynamical Systems**

Part of: IFAC World Congress 2020.

GIVEN SEMINARS

Davide has given the following seminars:

Modeling Control and Simulation of Hybrid Electric Vehicles and Geometric Dynamic Movement Primitives in Collaborative Robotics

Hosted by: Al Hussein Technical University, Jordan.

Date: Nov. 6th, 2023.

PRIZES AND AWARDS

Academic Year 2016/2017

Graduation Award

Issued by: University of Modena and Reggio Emilia, Modena.
Graduation Award based on merit. Final grades: 110/110 cum laude.

TEACHING ACTIVITY

Academic Year 2023/2024 **Automatic Controls**

Bachelor Degree in Computer Engineering, University of Modena and Reggio Emilia.
Davide gave 63 hours of classes in the aforementioned course.

Academic Year 2022/2023 **Automatic Controls**

Bachelor Degree in Computer Engineering, University of Modena and Reggio Emilia.
Davide gave 45 hours of classes in the aforementioned course.

Academic Year 2021/2022 **Automatic Controls**

Master Degree in Advanced Automotive Engineering, University of Modena and Reggio Emilia.
Davide gave 30 hours of classes in the aforementioned course.

Academic Year 2019/2020 **Modeling and Control of Electromechanical Systems**

Master Degree in Electronics Engineering, University of Modena and Reggio Emilia.
Davide gave 5 hours of classes in the aforementioned course on the following topics: linear and nonlinear physical systems efficiency and the modeling and control of hybrid electric vehicles.

2018–2023 **Co-Tutor Activity**

Master Degree in Electronics Engineering, University of Modena and Reggio Emilia.
Davide assisted several students in the aforementioned master degree course while they were carrying out their master thesis projects on the modeling and control of hybrid electric vehicles.

SCIENTIFIC PUBLICATIONS IN INTERNATIONAL JOURNALS

Davide has the following scientific publications in international journals:

- [1] D. Tebaldi, R. Zanasi, Model-based cascade control of single-phase Modular Multilevel Converters using ideal capacitor voltages reference, **Control Engineering Practice**, vol. 151, Oct. 2024.
- [2] D. Tebaldi, R. Zanasi, A unified methodology for the power efficiency analysis of physical systems, **Journal of the Franklin Institute**, vol. 361, no. 1, Jan. 2024.
- [3] D. Tebaldi, R. Zanasi, Systematic modeling of complex time-variant gear systems using a Power-Oriented approach, **Control Engineering Practice**, vol. 132, Mar. 2023.
- [4] D. Tebaldi, Efficiency Map-Based PMSM Parameters Estimation Using Power-Oriented Modeling, **IEEE Access**, vol. 10, pp. 45954 - 45961, Apr. 2022.
- [5] R. Zanasi, D. Tebaldi, Modeling Control and Robustness Assessment of Multilevel Flying-Capacitor Converters, **Energies**, vol. 14 (7), 1903, Mar. 2021.
- [6] R. Zanasi, D. Tebaldi, Modeling of Complex Planetary Gear Sets using Power-Oriented Graphs, **IEEE Trans. Veh. Technol.**, vol. 69, no. 12, pp. 14470-14483, Dec. 2020.

SCIENTIFIC PUBLICATIONS IN
INTERNATIONAL CONFERENCES

Davide has the following publications in international conferences:

- [1] D. Tebaldi, Frequency-Division Control for Parallel Hybrid Electric Vehicles, Conference on Automation Science and Engineering (CASE), Aug. 28-Sept. 1, Bari, Italy, 2024.
- [2] G. Azzone, M. Alizadehtir, D. Tebaldi, R. Zanasi, Numerical Comparison of the Polarization Curve Contributions and Simulation of Proton Exchange Membrane Fuel Cells, Conference on Automation Science and Engineering (CASE), Aug. 28-Sept. 1, Bari, Italy, 2024.
- [3] D. Tebaldi, R. Zanasi, A Generalized Procedure to Model Complex Time-Varying Physical Systems, Conference on Decision and Control (CDC), Dec. 13-15, Marina Bay Sands, Singapore, 2023.
- [4] D. Tebaldi, M. Villani, G. Rizzoni, Power-Oriented Gearbox Modeling and Gearshift Strategy Optimization Using Dynamic Programming, Conference on Decision and Control (CDC), Dec. 06-09, Cancun, Mexico, 2022.
- [5] D. Tebaldi, R. Zanasi, Modeling Control and Simulation of a Power-Split Hybrid Wheel Loader, Mediterranean Conference on Control and Automation (MED), Jun. 22-25, Bari, Puglia, Italy, 2021.
- [6] D. Tebaldi, R. Zanasi, Modeling Control and Simulation of a Parallel Hybrid Agricultural Tractor, Mediterranean Conference on Control and Automation (MED), Jun. 22-25, Bari, Puglia, Italy, 2021.
- [7] D. Tebaldi, R. Zanasi, Modeling Control and Simulation of a Series Hybrid Propulsion System, IEEE Vehicle Power and Propulsion Conference (VPPC), Nov. 18-Dec. 16, Gijon, Spain, 2020.
- [8] R. Zanasi, D. Tebaldi, Power-Oriented Modeling of Epicyclic Gear Trains, IEEE Vehicle Power and Propulsion Conference (VPPC), Nov. 18-Dec. 16, Gijon, Spain, 2020.
- [9] D. Tebaldi, R. Zanasi, Instantaneous Gearshift Model Based on Gear-dependent Angular Momentum, IFAC World Congress, Berlin, Germany, Jul. 11-17, 2020.
- [10] D. Tebaldi, R. Morselli, R. Zanasi, Estimation of Physical Parameters Using a New Discrete-time Derivative Algorithm, IFAC World Congress, Berlin, Germany, Jul. 11-17, 2020.
- [11] D. Tebaldi, R. Zanasi, Modeling and Simulation of a Multiphase Diode Bridge Rectifier, European Control Conference (ECC), St. Petersburg, Russia, May 12-15, 2020.
- [12] R. Zanasi, D. Tebaldi, Study of the Bidirectional Efficiency of Linear and Nonlinear Physical Systems, IEEE Annual Conference of the Industrial Electronics Society (IECON), Lisbon, Portugal, Oct. 14-17, 2019.
- [13] D. Tebaldi, R. Zanasi, Modeling and Control of a Power-Split Hybrid Propulsion System, IEEE Annual Conference of the Industrial Electronics Society (IECON), Lisbon, Portugal, Oct. 14-17, 2019.
- [14] R. Zanasi, D. Tebaldi, Planetary Gear Modeling Using the Power-Oriented Graphs Technique, European Control Conference (ECC), Naples, Italy, Jun-25-28, 2019.

- [15] R. Zanasi, D. Tebaldi, Power Flow Efficiency of Linear and Nonlinear Physical Systems, European Control Conference (ECC), Naples, Italy, Jun. 25-28, 2019.

DATASET PUBLICATIONS:

Davide has published the following datasets:

- [1] D. Tebaldi, R. Zanasi, Model-based control of modular multilevel converters, Mendeley Data, 2024, DOI: 10.17632/j4875x8jxw.2.
- [1] D. Tebaldi, PMSM Simulink Superblock and Matlab App for PMSM Parameters Estimation, IEEE DataPort, 2022, DOI: 10.21227/yn64-6c31.

**EDITORIAL BOARDS
MEMBERSHIPS OF
INTERNATIONAL JOURNALS:**

Davide is an Editorial Board Member of the following international journals:

Aug. 30th, 2023 – Today Control Science and Engineering (CSE).

**TOPICAL ADVISORY PANEL
MEMBERSHIPS OF
INTERNATIONAL JOURNALS:**

Davide is a Topical Advisory Panel Member of the following international journals:

Jun. 14th, 2024 – Today Machines (MDPI).

Apr. 24th, 2024 – Today Actuators (MDPI).

PHD THESIS:

Davide has produced the following PhD thesis:

- [1] **PhD Thesis:** D. Tebaldi, Mathematical Modeling Control and Simulation of Hybrid Electric Vehicles, Sector ING-INF/04 - Automatica, PhD Course in Information and Communication Technologies, University of Modena and Reggio Emilia, Academic Year 2020-2021, 34 Cycle.

**PARTICIPATION TO NATIONAL
AND INTERNATIONAL
CONFERENCES**

Davide has participated to the following national and international conferences in which he has presented his own research activity:

- Automatica.it 2024 (Annual Conference of the Italian Society of Professors and Researchers in all areas of Control Systems).
- CASE 2024 (Conference on Automation Science and Engineering).
- CDC 2023 (Conference on Decision and Control).
- Automatica.it 2023 (Annual Conference of the Italian Society of Professors and Researchers in all areas of Control Systems).
- CDC 2022 (Conference on Decision and Control).

- Automatica.it 2022 (Annual Conference of the Italian Society of Professors and Researchers in all areas of Control Systems).
- MED 2021 (Mediterranean Conference on Control and Automation).
- VPPC 2020 (Vehicular Power and Propulsion Conference).
- Automatica.it 2020 (Annual Conference of the Italian Society of Professors and Researchers in all areas of Control Systems).
- IFAC (International Federation of Automatic Control) World Congress 2020.
- ECC 2020 (European Control Conference).
- IECON 2019 (Annual Conference of the Industrial Electronics Society).
- Automatica.it 2019 (Annual Conference of the Italian Society of Professors and Researchers in all areas of Control Systems).
- ECC 2019 (European Control Conference).

PROGRAM COMMITTEE OF
NATIONAL AND INTERNATIONAL
CONFERENCES

Davide has been/is part of the Program Committee of the following national and international conferences:

- AIVR 2025 (The Second International Conference on Artificial Intelligence and Immersive Virtual Reality).
- CVCS 2025 (International Conference on Computer Vision and Control Systems).
- IRIM 2024 (6th Italian Conference on Robotics and Intelligent Machines)
- Automatica.it 2024 (Annual Conference of the Italian Society of Professors and Researchers in all areas of Control Systems).
- AIVR 2024 (The First International Conference on Artificial Intelligence and Immersive Virtual Reality).
- Automatica.it 2023 (Annual Conference of the Italian Society of Professors and Researchers in all areas of Control Systems).

REVIEWER ACTIVITY FOR
INTERNATIONAL JOURNALS:

Davide has served as a reviewer for the following international journals:

- MDPI: Actuators (Number of Revisions: 2).
- IEEE Robotics & Automation Letters (Number of Revisions: 2).
- MDPI: Machines (Number of Revisions: 10).

- MDPI: Sustainability (Number of Revisions: 1).
- IEEE Transactions on Energy Conversion (Number of Revisions: 1).
- Elsevier: Mechanical Systems and Signal Processing (Number of Revisions: 1).
- MDPI: Electronics (Number of Revisions: 5).
- MDPI: Energies (Number of Revisions: 3).
- Elsevier: Automatica (Number of Revisions: 2).
- IEEE Transactions on Transportation Electrification (Number of Revisions: 8).
- IEEE Control Systems Letters (Number of Revisions: 3).
- IEEE Transactions on Robotics (Number of Revisions: 2).
- Elsevier: Mechanism and Machine Theory (Number of Revisions: 6).
- IEEE Access (Number of Revisions: 3).
- IEEE Transactions on Industry Applications (Number of Revisions: 2).

REVIEWER ACTIVITY FOR INTERNATIONAL CONFERENCES

Davide has served as a reviewer for the following international conferences:

- 8th Forum on Research and Technologies for Society and Industry Innovation (RTSI 2024). (Number of Revisions: 1).
- The First International Conference on Artificial Intelligence and Immersive Virtual Reality (AIVR 2024). (Number of Revisions: 1).
- European Control Conference (ECC 2024). (Number of Revisions: 3).
- American Control Conference (ACC 2024). (Number of Revisions: 1).
- Society of Instrument and Control Engineers Annual Conference (SICE 2023) (Number of Revisions: 1).
- 2023 IEEE International Workshop on Metrology for Automotive (IEEE MetroAutomotive 2023) (Number of Revisions: 1).
- 62nd IEEE Conference on Decision and Control (CDC 2023) (Number of Revisions: 2).
- 20th International Conference on Smart Technologies (EUROCON 2023) (Number of Revisions: 2).
- 21st European Control Conference (ECC 2023) (Number of Revisions: 2).

- 10th IFAC International Symposium on Advances in Automotive Control (AAC 2022) (Number of Revisions: 1).
- IEEE Workshop on Electrical Machines Design, Control and Diagnosis 2021 (Number of Revisions: 1).
- IEEE Vehicle Power and Propulsion Conference 2020 (Number of Revisions: 1).

REVIEWER ACTIVITY FOR NATIONAL CONFERENCES

Davide has served as a reviewer for the following national conferences:

- Automatica.it 2024, Annual Conference of the Italian Society of Professors and Researchers in all areas of Control Systems (Number of Revisions: 5).
- Automatica.it 2023, Annual Conference of the Italian Society of Professors and Researchers in all areas of Control Systems (Number of Revisions: 3).

RESEARCH PERIODS ABROAD

Davide has carried out the following research periods abroad:

November 3rd, 2023 – November 10th, 2023

Invited Visiting Researcher

Al Hussein Technical University, Jordan.

Given Seminar

Modeling Control and Simulation of Hybrid Electric Vehicles and Geometric Dynamic Movement Primitives in Collaborative Robotics .

October 1st, 2021 – January 31st, 2022

Invited Visiting Scholar

Center for Automotive Research, The Ohio State University, Columbus, Ohio, USA.

Research Topic Title

Modeling, Control, Energetic Analysis and Optimal Energy Management of Hybrid Electric Propulsion Systems.

Last Update: September 14th, 2024