

PERSONAL INFORMATION

Carlo Cecati



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Gender Male | Nationality Italian

EDUCATION AND TRAINING

1976-1983 **University of L'Aquila**
Dott. Ing. in Ingegneria Elettrotecnica

WORK EXPERIENCE

1987 - - **University of L'Aquila**

2006 - - Professor in Power Converters, Electric Machines and Drives (S.S.D. IIND-08/A, former ING-IND/32)

2001-2006 Associate Professor in Power Converters, Electric Machines and Drives (S.S.D. ING-IND/32)

1987-2001 Assistant Professor in Power Converters, Electric Machines and Drives (S.S.D. ING-IND/32)

1983-1987 Research Fellow

Teaching Duties (since 1992)

Industrial Electronics for Automation and Energy (M.Sc.)
Industrial Electronics Laboratory (M.Sc.)
Electrical Drives I & II, (M.Sc.)
Electric Sensors and Actuators (M.Sc.)
Industrial Robotics (module on Electric Machines, B.Sc.)
Electric Machines (Erasmus Mundus, M.Sc.)
Power Converters I & II, (M.Sc.)
Renewable Energy and Storage Systems (Erasmus Mundus, M.Sc.)
Modeling of Electric and Electronic Power Systems (B.Sc.)
Fundamental of Energy Systems, (Erasmus Mundus, M.Sc.)

Academic Duties

2018 - 2024 Coordinator of the Department Committee for cooperation with industry and with public bodies

2006 - - Member of the Ph.D. School in ICT

2010 - 2016 Funding Member and Coordinator of the Ph.D. School in "Methods and systems for management of electrical and thermal energy produced by renewable and assimilable energy and for sustainable buildings"

1990 - 2010 Member of the Ph.D. School in Electrical and Information Engineering

2007 - 2008 Coordinator of the Master "Energy Manager" at the University of L'Aquila (for post-M.Sc., 1500 hours in one year)

- 2006 - 2008 C.E.O. of "PoIAf" (Poli per l'Alta Formazione nei settori manifatturiero e dei servizi), a 4.3 M€ joint project among the regional universities (University of L'Aquila, University of Teramo and University "Gabriele D'Annunzio" - Chieti-Pescara), the main regional industries and regional government of Abruzzo aiming to increase the technical skills of graduate employees and young technicians of manufacturing and service companies, through 28 masters (one academic year) and about 100 short courses (200-300 hours each)
- 2005 - 2013 Rector's Delegate for academic programs of the regional universities: Universities of L'Aquila, Teramo and D'Annunzio (Chieti-Pescara), financially supported by Regione Abruzzo government with EC Social Fund
- 2004 - 2007 Director of the ICT services of the Faculty of Engineering
- 2001 - 2008 Coordinator of the courses in the technical area of the School "Raffaele Laporta" dell'Università degli Studi "G. D'Annunzio", joint initiative with the University of L'Aquila, University of Teramo and University of Chieti-Pescara
- 2023 - - Politecnico di Bari, Italy**
- 2023 - 2027 Affiliated Research Professor in charge of PNRR-funded (New Generation EU) researches on microgrids (AC and DC) and their control (conventional and AI-based) through multilevel converters
- 2020 - 2020 École nationale supérieure de l'électronique et de ses applications (EN-SEA), Parigi, Francia**
Visiting Professor
- 2014 - - Harbin Institute of Technology, Harbin, P.R. China**
<http://peed.hit.edu.cn/b7/b1/c4203a178097/page.psp>
- 2021 - - Scientific Consultant
- 2015 - 2017 Distinguished Professor, High Level Foreign Expert, 1000 Talents Plan
- 2014 - 2015 International Academic Advisor
- 2014 - 2014 Visiting Professor
- 2016 - 2016 Dalian University of Technology, Dalian, P.R. China**
Visiting Professor
- 2013 - 2014 ACEA Distribuzione S.p.A., Roma (City of Rome distribution operator)**
Scientific advisor and consultant in development of the PON project: "Smartnetwork Management System: Evoluzione tecnologica nella rete di distribuzione elettrica"
- 2013 - 2014 Università degli Studi di Salerno, Italy**
Scientific consultant in research projects on smart grids
- 2007 - - DigiPower srl - Innovative PMI, 67100 L'Aquila**
- 2012 - - Chief Technical Officer (CTO)
- 2007 - 2012 Chief Technical Officer (CTO) and Chief Executive Officer (CEO)
- 1983-1986 BG & Partners, Roma**
Technical consultant in charge of the design, development, and testing of digital control algorithms for the Umm-Al-Naar East desalination plant, located in the United Arabian Emirates and realized by *Italimpianti* SpA, Genova, Italy (the plant is still in operation)

1994-1996 A.S.M. - Multiutility Company of the City of L'Aquila

Member of the Administrative Committee
(the company is in charge of main city services: transportation, waste collection and disposal and ICT services)

1984 - - Engineering Association of Province of L'Aquila

Registered Professional Engineer.

HONORS

2019 - - Commendatore (Commander) dell'Ordine "al merito della Repubblica Italiana", . Conferred by the President of the Republic of Italy.

AWARDS

- 2024 IEEE: 2023 Second Place Prize Paper Award for the *IEEE Journal of Emerging and Selected Topics in Power Electronics*: "Recursive Selective Harmonic Elimination for Multilevel Inverters, Mathematical Formulation and Experimental Validation," Vol. 11, No. 2, pp. 2178-2189, April 2023)
- 2024 - - IEEE: Life Fellow
- 2021 - - IEEE: 2021 Dr.-Eng. Eugene Mittelmann Achievement Award, for "Contributions in the area of Industrial Electronics"
- 2020 - 2020 IEEE: Outstanding Paper Award for the IEEE Transactions on Industrial Electronics for "Wireless Power Transfer – An Overview," vol. 66, no. 2, pp. 1044-1058, February 2019.
- 2018 - - Member of "Gruppo 2003 per la ricerca scientifica", the italian association of the highly cited researchers in all fields, according to Clarivate Analytics
- 2018 - 2018 "Highly Cited Author", Clarivate Analytics (ISI - Thomson), the list includes the top 1% world-wide researchers in terms of citations on indexed publications. He has been the only italian researcher recognised in Engineering disciplines
- 2017 - - IEEE: 2017 Anthony J. Hornfeck Award, for: "Extraordinary Editor-in-Chief Activity and Innovation Brought to the IEEE Transactions on Industrial Electronics"
- 2016-2016 IEEE: Best Paper Award, First Workshop on Smart Grids and Renewable Energy, Doha, Qatar, 22-23 March, 2016 for the paper: "Impact of Electric Vehicles on Voltage Profile and Harmonics in a Distribution Network"
- 2014 - - Associazione Frentano d'oro: Frentano d'oro 2014 award, conferred to a "Frentania" native who has extraordinarily performed in the fields of science, economy, profession, arts, giving prestige to Frentania
- 2014 - - Certificate of Appreciation conferred by Prof. Kouhei Ohnishi, President-Elect of The Institute of Electrical Engineers of Japan, "For great contribution to establishment of strong tie between Italian Scientific Community and Japanese Scientific Community".
- 2013 - 2013 IEEE: Best paper award for the *IEEE Transactions on Industrial Informatics*: "Digital Control of Power Converters – A Survey," vol. 8, no. 3, pp. 437-447, August 2012
- 2012 - 2012 IEEE: Best paper award for the *IEEE Transactions on Industrial Informatics*: "Smart Grid Technologies: Communication Technologies and Standards," vol. 7, no. 4, pp. 529-539, November 2011
- 2012 - 2012 IEEE: Best paper award for the *IEEE Industrial Electronics Magazine*: "The New Frontiers of Smart Grids," vol. 5, no. 3, pp. 49-63, Sept. 2011
- 2006 - - IEEE: Fellow, Class 2006, conferred by the Institute of Electrical and Electronic Engineers (IEEE) for "unusual distinction in the profession, by the Board of Directors upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest", conferred each year to 0,1% of IEEE members (around 400.000). Motivation: "for contribution to advanced control of power electronics converters and drives".

FULFILLMENT OF THE REQUIREMENTS FOR PARTICIPATION TO ANVUR (SOURCE: SCOPUS, AS 22/10/2023)

SECTOR 09/E2 requirements: number of papers published during the last 10 years (2012-2021): 12 papers; number of actual publications: 177

SECTOR 09/E2 requirements: number of citations during the last 15 years: 456. Number of actual citations: 10882

SECTOR 09/E2 requirements: H-index during the last 15 years: 12. Actual H-index: 34.

ANVUR is the Italian national agency for research evaluation. Source: SCOPUS

- Note 1. As September 4, 2024: (i) source Scopus (<https://www.scopus.com>): number of publications: 277, number of citations: 13.513, H-index: 40; (ii) source Semantic Scholar (<https://www.semanticscholar.org>): number of publications: 295, number of citations: 13.969, H-index: 41; (iii) source Google Scholar (<https://scholar.google.com>), number of publications > 300, number of citations 18322, H-index= 48.
- Note 2. “2018 Highly Cited Author”, Clarivate Analytics (ISI - Thomson), the list includes the top 1% worldwide researchers in terms of citations on indexed publications. He has been the only Italian researcher recognised in Engineering disciplines.

RESEARCH ACTIVITY AND PUBLICATIONS

Carlo Cecati's research and technical activities have focused on power electronic converters for renewable energy systems, smart grids, electric transport (vehicles and aircraft), industrial applications; the application of ICT and artificial intelligence to the energy sector, with emphasis on modelling, control, modulation, fault detection, diagnosis and recovery; applications of microprocessors and FPGA; industrial communications. He has published more than 300 manuscripts; one third of his publications are on top 10% or first quartile journals, including: *IEEE Transactions on Industrial Electronics*, *IEEE Transactions on Power Electronics*, *IEEE Transactions on Sustainable Energy*, *IEEE Transactions on Industrial Informatics*, *IEEE Journal of Emerging and Selected Topics in Power Electronics*, *IEEE Journal of Emerging and Selected Topics in Industrial Electronics*, *IEEE Transactions on Fuzzy Systems*, *IEEE Industrial Electronics Magazine*, *IEEE Access*, *IET Power Electronics*, *Electric Power System Research* (Elsevier), *Intelligent Industrial Systems* (Springer), *Matcom - Mathematics and Computers in Simulation - Journal* (Elsevier), *Electric Machines and Power Systems* (Taylor & Francis), *Electric Power Components And Systems* (Taylor & Francis), *Green Energy and Technology* (Springer), *Energies* (MDPI), and book chapters published by: Nikkan Kogyo Shimbun (Japan), Springer Verlag (Germany), Elsevier (Holland), Wiley (UK) and on the Proceedings of top conferences: IEEE ECCE, IEEE IECON, IEEE ISIE, IEEE ICIT, IEEE IAS Annual Meeting, IEEE PESC, IEEE APEC, IEEE Powertech, IEEE EPE-PEMC, ICEM, EPE, SPEEDAM, ICCEP, ESARS and many others. Many of them are joint publications with international authors. Carlo Cecati has been the Principal Investigator of PRIN2017 “Advanced power-trains and - systems for full electric aircraft”, coordinating five distinct universities: L'Aquila, Cagliari, Catania, Napoli, Palermo and Politecnico di Bari.

MAIN PROJECTS

- 2020 - 2023 PRIN2017, ERC: PE7 - Linea C, “Advanced power-trains and systems for full electric aircrafts”
Partner: University of Aquila, University of Cagliari, University of Napoli “Federico II”, University of Palermo, Politecnico di Bari, University of Catania. Budget: €979.478,99 (overall), €191.221,00 (Un. L'Aquila). Principal Investigator and coordinator for the whole project.
- 2020 - 2020 “Robot Enable for Load Assistive relaxation” (RELAX), in “Fondo per la Crescita Sostenibile” – Sportello “Fabbrica intelligente” PON I&C 2014-2020, di cui al D.M. 5 marzo 2018 Capo III. CUP: F/190042/02/X44.

Partner: Global Automation srl, Vasto (CH), Istituto Italiano di Tecnologia (IIT) Genova. Budget: € 2.776.932,50 (overall), € 348.510,00 (DigiPower srl). Technical Coordinator for DigiPower. Withdrawn due to pandemic.

2017 - 2018 “Modular Converters for Distributed Generation and Electric Mobility” (CoMoDes), Fondo per la Crescita Sostenibile – Bando “HORIZON 2020” PON I&C 2014-2020, di cui al D.M. 1 giugno 2016 (N. F/050220/01-02-03/X32.)

Study, design, development and realization of Modular Multilevel Converters for integration of Distributed Generation and Electric Sustainable Mobility in Smart Grids and Smart Cities. Partners: GETRA Engineering srl di Marcianise (CE), DigiPower ed Laboratory “Tecnologie e sistemi fotovoltaici” ENEA, Portici (NA). Budget: € 2.311.916,68 (overall), € 500.468,13 (DigiPower Ltd.). Technical Coordinator for DigiPower Ltd.

EDITORIAL BOARD MEMBER

Editor-in-Chief

2013 - 2015 *IEEE Transactions on Industrial Electronics*, top journal with 99% percentile. Under his leadership, during the term 2013-2015, the journal was ranked by Scopus n. 1 among the 214 journals in “Electrical and Electronic Engineering” field.

Co-Editor-in-Chief

2009 - 2012 *IEEE Transactions on Industrial Electronics*

Associate Editor

2019 - - *IEEE Transactions on Transportation Electrification* (first quartile journal)

2018 - - *IEEE Transactions on Industrial Informatics* (first quartile journal)

2004 - 2018 *IEEE Transactions on Industrial Electronics* (first quartile journal)

2005 - 2008 *IEEE Transactions on Mechatronics* (first quartile journal)

Guest Editor *IEEE Transactions on Industrial Electronics*

- Special Section on “Methods and Systems for Smart Grids Optimization”
- Special Section on “Fractional Horsepower Electrical Drives”
- Special Section on “Smart Devices for Renewable Energy Systems”
- Special Section on “Real-time fault diagnosis and fault-tolerant control”
- Special Section on “Monitoring, diagnosis, prognosis and techniques for increasing the life-time/reliability of photovoltaic systems”
- Special Section on “Emerging Power Quality Problems and State of The Art Solutions”
- Special Section on “Power-electronics-enabled Autonomous Power Systems”
- Special Section on “Wireless Power Transfer for Smart Industrial and Home Applications”

Guest Editor *IEEE Transactions on Industrial Informatics*

- Special Section on “Information Technologies in Smart Grids”
- Special Section on “Industrial Sensing Intelligence”
- Special Section on “Smart Devices for Renewable Energy Systems”

Guest Editor *IEEE Access*

- Special Issue on “Special Section on Intelligent Systems for the Internet of Things”

Guest Editor *Journal of Ambient Intelligence and Humanized Computing* (ed.: Springer)

- Special Issue on “Advanced Computational Intelligence Systems for Smart Grids Planning and Management”

Guest Editor *IEEE Transactions on Transportation Electrification*

- Special Session on “Electrical Machines and Power Electronics Systems in the More Electric Aircraft”

- Guest Editor** *IEEE Journal of Emerging and Selected Topics in Industrial Electronics*
- Special Section on “High-Frequency High-Voltage-Conversion-Ratio DC/DC Converters”
 - Special Section on “Emerging Topics of DC-DC Converters for Solar PV” (in esecuzione)
- Reviewer** Carlo Cecati has been a reviewer of the main journals and conferences in his research area, moreover, he has been an evaluator of book proposals committed by many prestigious international publishers.

SCIENTIFIC INSTITUTION MEMBERSHIPS

Gruppo 2003 per la ricerca scientifica (<https://gruppo2003.org>)

2019 - - Member

Associazione Italiana di Elettrotecnica, Elettronica, Automazione, Informatica e Telecomunicazioni (<https://www.aeit.it>)

2018 - - Member

Institute of Electrical and Electronic Engineers (IEEE) (<https://www.ieee.org>)

2024 - - Life Fellow

2006 - - Fellow “for contributions to advanced control of power converters and electrical drives”

2003 - 2005 Senior Member

1990 - 2003 Member.

CONFERENCE AND SCIENTIFIC SOCIETIES BOARDS

- 2023 - - Member of the Advisory Board of Conferences Activities of the Industrial Electronics Society
- 2022 - - Member of the Award and Honor Committee of the Industrial Electronics Society
- 2019 - 2022 Chairman of the Industrial Electronics Italy Chapter
- 2016 - - Member of the Advisory Board of the *IEEE Transactions on Industrial Electronics*
- 2016 - - Senior AdCom Member of the Industrial Electronics Society
- 2016 - 2021 Member of the Nomination and Appointments Committee of the Industrial Electronics Society
- 2013 - 2015 Editor-in-Chief, *IEEE Transactions on Industrial Electronics*
- 2010 - 2012 Co-Editor-in-Chief, *IEEE Transactions on Industrial Electronics*
- 2004 - 2005 Vice President for Workshops, Industrial Electronics Society
- 2018 - 2019 Member del *Publication Committee*, Industrial Electronics Society
- 2018 - 2019 Member del *Fellow Committee*, Industry Applications Society
- 2007 - 2013 Member del *Fellow Committee*, Industrial Electronics Society
- 2007 - 2009 *Region 8 Coordinator*, Industrial Electronics Society
- 2004 - - Member of the *Conference Committee*, Industrial Electronics Society
- 2010 - 2011 Co-Founder and *Co-Chairman* dello *Smart Grids Committee*, Industrial Electronics Society
- 2010 - - Member of the *Renewable Energy Committee*, Industrial Electronics Society
- 2004 - 2005 *Member of the Finance Committee*, Industrial Electronics Society
- 1995 - - Member of the *Power Electronics Committee*, Industrial Electronics Society
- 1992 - - Member of the *Electrical Drives Committee* IEEE Industry Applications Society
- 1992 - 2004 Member of the *Industrial Automation and Control Committee*, IEEE Industry Applications Society

CONFERENCE BOARDS

Carlo Cecati has been member of *Technical Program Committees, Steering Committees and Advisory Boards*, being:

Honorary Chairman

- ICCAD'24, 8th International Conference on Control, Automation and Diagnosis, (Paris, F)
- ICCAD'23, 7th International Conference on Control, Automation and Diagnosis, (Rome, I)
- IEEE International Conference on Industrial Electronics (IEEE IECON 2021) (Toronto, CA)
- IEEE International Conference on Industrial Electronics for Sustainable Energy Systems (IEEE IESES 2020) (Cagliari, I)
- IEEE International Symposium on Industrial Electronics (IEEE ISIE 2010) (Bari, I)

General Chairman

- IEEE International Conference on Artificial Intelligence & Green Energy, (Hammamet, Tunisia, October 10-12, 2024) (co-founder)
- IEEE International Conference on Artificial Intelligence & Green Energy, (Sousse, Tunisia, October 12-14, 2023) (co-founder)
- IEEE International Conference on Industrial Electronics (IEEE IECON 2016), (Florence, Italy October 24-26, 2016) (> 6000 authors, around 2000 participants)
- International Conference on Industrial Networks and Intelligent Systems (INISCOM) (Tokyo, J, March 2-4, 2015) - Founding General Chairman -
- International Symposium on Smart Electric Distribution Systems and Technologies (EDST) (Vienna Sept. 8-11, 2015)
- IEEE International Symposium on Industrial Electronics (IEEE ISIE 2008), (Cambridge, UK)
- IEEE International Symposium on Industrial Electronics (IEEE ISIE 2004) (Aiaccio, F)
- IEEE International Symposium on Industrial Electronics (IEEE ISIE 2002) (L'Aquila, I)

Technical Program Chairman

- AEIT 2018 Annual Meeting (Bari, Italy)
- 5th International Symposium on Environment-Friendly Energies and Applications (EFEA 2018) (Rome, Italy)
- Automotive 2018 (Milan, Italy)
- IEEE International Symposium on Industrial Electronics (IEEE ISIE 2014), (Istanbul, Turkey)
- IEEE International Symposium on Industrial Electronics (IEEE ISIE 2013), (Taipei, Taiwan)
- IEEE International Workshop on Intelligent Energy Systems (2013 IWIES) (Vienna, Austria)
- IEEE International Conference on Industrial Electronics (IEEE IECON 2007), (Taipei, Taiwan)

Track Chairman

- “Smart Energy” in:
 - IEEE-MELECON 2022, (Palermo, I)
- “Renewable Energy Systems” in:
 - IEEE-ISIE 2022, (Anchorage (Alaska), USA)
- “Mechatronics” in:
 - IEEE-ISIE 2000 (Puebla, Mexico)
- “Sensors and Actuators” in:
 - in IEEE-ISIE 2005, (Dubrovnik, Croatia)
- “Power Electronics” in:
 - IEEE-IECON 2006, (Parigi, F)
 - IEEE-ISIE 2006, (Montreal, CA)
 - IEEE-ICIT 2004, (Hammamet, Tunisia)
- “Power Systems” in:
 - IEEE-ISIE 2020 (Delft, NL)
 - IEEE-ICIT 2019 (Melbourne, AU)
 - IEEE-ISIE 2018 (Cairns, AU)

Special Session Chairman

- IEEE-IECON 2005, (Railegh, USA)
- Mechatronics & Robotics 2004, (Aachen, D)
- IEEE-ISIE 2003 (Rio de Janeiro, BR)
- IEEE-IECON 2003 (Roanoke, USA)
- IEEE-IECON 1998 (Aachen, D)
- IEEE-ISIE 1997 (Guimaraes, P)

Tutorial Chairman

- IEEE-IECON 2014 (Dallas, USA)
- IEEE-IECON 2013 (Vienna, Austria)
- IEEE-IECON 2012 (Montreal, CA)
- IEEE-IECON 2011 (Melbourne, AU)

Publication Chairman

- IEEE International Conference on Industrial Electronics (IEEE-IECON 1994) (Bologna, I).

INVITED SPEAKER

Keynote Speaker, Invited Speaker, Plenary Speaker, Panel Speaker, Tutorial Speaker in numerous conferences and universities in: USA, Canada, U.K., China, Taiwan, Australia, Korea, Denmark, France, Germany, Spain, Qatar, Oman, Poland, Angola, Lebanon, Romania, Turkey, Italy.

ADDITIONAL ACTIVITIES

Expert evaluator Carlo Cecati has been appointed expert evaluator by several institutions, including European Community, MIUR, MUR, Emilia Romagna Region, Qatar National Research Foundation, Czech Academy of Science, Republic of Kazakhstan, European and Middle East universities (Khalifa University (U.A.E.), American University of U.A.E.), and several universities in China, India, Pakistan, Australia, U.S. Canada.

TECHNOLOGICAL TRASFER,
START-UP, SPIN-OFF

- 2007 - - Founder of DigiPower srl, spin-off of the University of L'Aquila, located in L'Aquila. DigiPower has cooperated with small, medium and large enterprises, participated to competitive calls on R&D awarded with two distinct projects PON-H2020 "Imprese e Competitività" supported by the Italian Ministry of Industrial Development with EC fundings. DigiPower is an Innovative PMI (according to D.M. 3/2015.)
- 2012-2013 Co-Founder of "NEXTION" (NEXT innovatIOn), supported by the City of Lanciano, aiming at developing an incubator for start-up and innovative companies.

ADDITIONAL INFORMATION

Digital competences

SELF-ASSESSMENT

Information Processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

[Digital competences - Self-assessment grid](#)

Mother tongue Italian

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C1	C1
Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user Common European Framework of Reference for Languages					

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV, but not to publish in any form.

L'Aquila - Italy, September 4, 2024.