

EUROPEAN
CURRICULUM VITAE
FORMAT



PERSONAL INFORMATION

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Nationality Italian
Date of birth 29/01/1972

WORK EXPERIENCE

- **Since 2019**
 - Name of employer **Full Professor**
Alma Mater Studiorum – University of Bologna - Italy
 - Position held **Chair of Internal Combustion Engines and Hybrid Powertrains at the Department of Industrial Engineering - Academic discipline: ING-IND/08 Fluid Machinery**
- Main activities and responsibilities
Research Responsibilities:
 - Coordinator of a group of 8-10 PhD students and Post-Graduate Researchers in the field of testing, modeling and control of internal combustion engines and hybrid powertrains
 - Principal investigator of various research contracts with automotive companies (Automobili Lamborghini SpA, FEV Italia srl, Ferrari Auto SpA, IAV GmbH, Marelli SpA, ...) – since 2011
 - Co-founder and Co-director of the *Green Mobility Research Laboratory*, a joint multi-annual research programme between the University of Bologna and FEV Italia, for investigating new mobility solutions related to powertrain electrification and automated and connected vehicles – since 2018
 - Head of the *Internal combustion engines and hybrid powertrains Laboratory* of the Industrial Engineering Department, University of Bologna. In charge of the corresponding teaching and research activities (engine test cell, hardware-in-the-loop simulators, rapid control prototyping systems) – since 2010
 - Associate Editor for the *SAE International Journal of Alternative Powertrains* (ISSN 2167-4205), one of the most qualified and internationally recognized journals in the field of powertrains and hybrid vehicles – since 2017
 - Associate Editor for the *Journal Vehicles* (ISSN 2624-8921), a peer-reviewed open access journal of transportation science and engineering published quarterly online by MDPI – since 2019
 - Delegate of the University of Bologna as a member of the Scientific Council of CLUSTER TRASPORTI ITALIA 2020 – since 2017
 - Delegate of the University of Bologna as a member of the *European Green Vehicles Initiative Association (EGVIA)*, Public-private Partnership engaged with the European Commission – since 2014
 - Delegate of the University of Bologna as a member of the Technical-Scientific Committee of ART-ER (Attractiveness Research Territory, the Emilia-Romagna region

- Joint Stock Consortium), representing the Emilia Romagna section of the Italian Bank Association (ABI)
- Delegate of the University of Bologna as a member of the Governing Board of "Fondazione Ducati", Ducati Motor, Italy – since 2019
- Member of the Governing Board of the following Framework Collaboration Agreements of the University of Bologna, appointed by the Deputy Rector for Entrepreneurship:
 - Automobili Lamborghini SpA
 - FEV Italia
 - HPE-COXA
- Member of the Governing Board of the SAE (Society of Automotive Engineers) Naples Section as Vice Chair Student – since 2010
- Member of the "Transport" Thematic Research Group of the University of Bologna – 2017-2021
- Member of the IFAC Technical Committee 7.1 on "Automotive Control" – since 2007

Educational Responsibilities:

- In charge of the following courses for the International Master in Advanced Automotive Engineering at the University of Bologna – Department of Industrial Engineering:
 - Modeling and Control of Internal Combustion Engines and Hybrid Powertrains M
 - Testing, Calibration and Homologation of Internal Combustion Engines M
 - Formula SAE Lab M
- Tutor of Master and PhD Theses at the Department of Industrial Engineering – University of Bologna: 15-20 Master students and 5-6 PhD students tutored per year
- Vice-deputy Rector for the *Polo Universitario Penitenziario*, the University of Bologna institution for the education of detained students – 2019-2021
- Head of the University Project "UniBoAT", with more than 10 students involved, and a budget of around € 80,000 / year from sponsors and institutions – since 2019
- Head of the University Project "MotoStudent", with more than 40 students involved per year, and a budget of around € 80,000 / year from sponsors and institutions – since 2017
- Head of the University Project "Formula Student", with more than 150 students involved per year, and a budget of around € 200,000 / year from sponsors and institutions – since 2008
- Faculty Advisor of the University of Bologna Collegiate Chapter of SAE International, student association affiliated with SAE International – since 2008

• Since 2018

- Name of employer
- Type of business or sector

Coordinator of the PhD Program in Automotive Engineering for Intelligent Mobility

Alma Mater Studiorum – University of Bologna – Department of Industrial Engineering - Italy
 Joint PhD Program between the University of Bologna, the University of Modena and Reggio Emilia and the University of Parma - <https://phd.unibo.it/ami>

The PhD course aims to train highly qualified personnel with multidisciplinary skills, able to direct the development and research, also in the industrial field, of innovative vehicles and mobility solutions. Around 15-20 PhD positions activated each year.

• Main activities and responsibilities

Director of the PhD Board of 25 university members, responsible for the yearly PhD program accreditation at the Italian Ministry of University and Research, coordinator of educational and research activities within the PhD course, in charge of industrial and academic partnerships and agreements with Italian and foreign institutions and companies.

• 2019-2021

- Name of employer
- Main activities and responsibilities

Deputy Rector for Advanced Education and Post-Graduate Studies

Alma Mater Studiorum – University of Bologna

In charge of the guidance and promotion of activities related to post-graduate and professional courses, including new educational activities dedicated to the training of professionals already employed in companies and institutions (Master Programs, Summer Schools, Corporate Education Programs, Professional Courses).

• 2010-2019

- Name of employer
- Main activities and responsibilities

Associate Professor

Alma Mater Studiorum – University of Bologna – Italy
 Academic discipline: ING-IND/08 Fluid Machinery

Research Responsibilities:

- Coordinator of a group of 6-8 PhD students and Post-Graduate Researchers in the field of testing, modeling and control of internal combustion engines and hybrid powertrains

- Principal investigator and participant to various research contracts with automotive companies (Alma Automotive srl, Automobili Lamborghini SpA, Ducati Motor Holding SpA, IEV srl, IAV Gmbh, FEV Gmbh, Ferrari Auto SpA, Magneti Marelli SpA)
- Scientific coordinator for Alma Automotive of the competitive project "ADVICE" (ADVancing user acceptance of general purpose hybridized Vehicles by Improved Cost and Efficiency) funded by the European Union within Horizon 2020, call GV-03-2016 – 2016-2019
- Member of "Alma EClub", institutional project for the dissemination of the entrepreneurial culture of the University of Bologna, and coordinator of the Working Group for the financing of business ideas – 2017-2018
- Vice-Coordinator of the PhD Program in Mechanical Engineering and Advanced Engineering Sciences (DIMSAI) – 2014-2015
- Scientific coordinator for the local unit of the University of Bologna of the competitive project "MUSS – Safe and Sustainable Urban and Infra-urban Mobility", funded by the Italian Ministry of Economic Development – 2010-2013
- Member of the Board of the PhD Program in Mechanical Engineering and Advanced Engineering Sciences (DIMSAI) – 2010-2013

Educational Responsibilities:

- In charge of the following courses for Bachelor (T) and Master (M) Programmes in: Mechanical Engineering, Energy Engineering, Advanced Automotive Engineering at the University of Bologna:
 - Modeling and Control of Internal Combustion Engines and Hybrid Powertrains M (AY 2018/19)
 - Testing, Calibration and Homologation of Internal Combustion Engines M (AY 2018/19)
 - Formula SAE Lab M (AY 2018/19)
 - Internal Combustion Engines and Hybrid Powertrains M (AY 2012/13, 2013/14, 2014/15, 2015/16, 2016/17, 2017/18)
 - Testing and Calibration of Internal Combustion Engines M (AY 2012/13, 2013/14, 2014/15, 2015/16, 2016/17, 2017/18)
 - Fluid Machines and Energy Systems T (AY 2012/13, 2013/14, 2014/15, 2015/16, 2016/17, 2017/18)
 - Methodologies for Internal Combustion Engines Control M (AY 2010/11, 2011/12)
 - Laboratory of Internal Combustion Engines Testing M (AY 2010/11, 2011/12)
- Tutor of Master and PhD Theses at the Department of Industrial Engineering – University of Bologna: 15-20 Master students and up to 5-6 PhD students per year
- Member of the Internationalization Commission of the Department of Industrial Engineering of the School of Engineering and Architecture of the University of Bologna, as representative of the Doctoral School – 2013-2017
- Responsible, for the Master in Mechanical Engineering, of the operational management of the Double Degree program with the University of Cordoba, Argentina, and the School of Engineering and Architecture of Bologna University – 2015-2017

• 2016-2017

- Name of employer
- Type of business or sector

• Main activities and responsibilities

Coordinator of the PhD Program in Mechanical Engineering and Advanced Engineering Sciences (DIMSAI)

Alma Mater Studiorum – University of Bologna – Department of Industrial Engineering - Italy

The PhD course provides a training program with academic and professional purposes. It develops the candidate's ability to carry out research and projects in an independent, systematic and in-depth approach in Mechanics and Advanced Engineering Sciences.

Director of the PhD Board of 16 university members, responsible for the yearly PhD program accreditation at the Italian Ministry of University and Research, coordinator of educational and research activities within the PhD course, in charge of industrial and academic partnerships and agreements with Italian and foreign institutions and companies.

• 2002-2009

- Name of employer

• Main activities and responsibilities

Assistant Professor

Alma Mater Studiorum – University of Bologna – Italy

Academic discipline: ING-IND/08 Fluid Machinery

Research Responsibilities:

- Coordinator of a group of 2-3 PhD students and Post-Graduate Researchers in the field of testing, modeling and control of internal combustion engines
- Participant to various research contracts with automotive companies (Automobili Lamborghini SpA, Ferrari Auto SpA, Magneti Marelli SpA)

- Participant to the Project FIRB 2007, code RBIP06W2MA, title: "Development of Base Methodologies for Reducing Fuel Consumption and Increasing the Performance of High Performance Engines", funded by the Italian Ministry of Industry – 2007
- Participant to the Project "PRRITT – Regional Program for Research, Innovation and Technology Transfer", funded by the Regione Emilia Romagna – 2003-2005
- Participant to the Project "Development of a Real-time Control system for an Internal Combustion Engine", funded by the Italian Ministry of Research – 2002-2005

Educational Responsibilities:

- In charge of the following courses for Master (M) Programmes in Mechanical Engineering and Energy Engineering at the University of Bologna:
 - Control of Internal Combustion Engines M (AY 2006/07, 2007/08, 2008/09, 2009/10)
 - Laboratory of Internal Combustion Engines Testing M (AY 2006/07, 2007/08, 2008/09, 2009/10)
 - Control of Energy Systems M (AY 2002/03, 2003/04, 2004/05, 2005/06)
- Tutor and Assistant for Master and Bachelor courses at the Faculty of Engineering of the University of Bologna, for about 60 hours of lectures between 2002 and 2003

TECHNOLOGY TRANSFER

• 2002-2019

Founder, Member of the Board and Vice President of *Alma Automotive srl*, spin-off company of the University of Bologna

• 2008-2020

Co-inventor of 7 international patents filed with Ferrari Auto SpA and Magneti Marelli Spa

• 2020

Participation as **Expert Member** to the "Nucleo di valutazione della seconda finestra del bando 2019 della L.R. 14/2014", within the Project C.1 "Territorial marketing and investment attraction," Line B, Annual program 2019 (DGR 179/2019) CUP n° E31F18000670002, **Emilia Romagna Region, Italy**

• 2017

Participation as **Expert Member** to the "Nucleo istruttorio dei progetti presentati a valere della L.R. 14/2014: seconda fase", within the Project "C.1 Territorial marketing and investment attraction, Annual program 2016 (DGR 2304/2015)", **Emilia Romagna Region, Italy**

• 2016

Technical Expert for Evaluation of Funded Projects related to "L.R. 34/2004 – mis. int2 "contratto di insediamento – sezione attrazione grandi imprese", **Piemonte Region, Italy**

• 2016

Participation as **Expert Member** to the "Nucleo istruttorio dei progetti presentati a valere della L.R. 14/2014: prima fase", within the Project "C.1 Territorial marketing and investment attraction, Annual program 2016 (DGR 2304/2015)", **Emilia Romagna Region, Italy**

• 2014

Participation as **Expert Member** to the *Nucleo di Valutazione n. 109* - Evaluator of technological innovation projects, for the sector "Engines and Mechatronics" (public funding for post-earthquake industrial re-start, **Emilia Romagna Region, Italy**)

• 2010

Technical Expert for the evaluation of funded project: "Design of an automatic universal engine management and control system (ICE)", **Emilia Romagna Region, Italy**

EDUCATION AND TRAINING

• 1998-2001

• Name and type of organisation providing education and training

• Principal subjects

• International experiences

• Teaching experiences

PhD in Mechanical Engineering – curriculum "Highly efficient energy systems"

Alma Mater Studiorum – University of Bologna – Italy

PhD Course offered within a consortium of various Italian Universities

PhD Thesis title: "Development and Implementation of Air-to-Fuel Ratio Control Strategies for Spark Ignition Engines" – Tutor: Professor Giorgio Minelli

Visiting PhD student at the *Ohio State University Powertrain Control and Diagnostics Laboratory (PCAD LAB)*, Columbus, OH, USA, under the supervision of Prof. Giorgio Rizzoni – AY 1998-99

Tutor and Assistant for Master and Bachelor courses at the Faculty of Engineering of the University of Bologna, for about 60 hours of lectures between 1999 and 2001

• 1992-1997

• Name and type of organisation providing education and training

• Principal subjects

• International experiences

BS and MS in Mechanical Engineering (Italian "Laurea Vecchio Ordinamento" degree)

Alma Mater Studiorum – University of Bologna – Italy

Master Thesis title: "Indicated and Load Torque Estimation for Real-time Engine Control Application" – Tutor: Professor Giorgio Minelli

Visiting student at *Universitat Politècnica de Valencia*, Spain, within the Erasmus Program – AY 1996-97

Visiting student at *Berkeley University*, CA, USA, as a recipient of an exchange program scholarship with the University of California – AY 1993-94

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE

ITALIAN

OTHER LANGUAGES

- Reading skills
- Writing skills
- Verbal skills

ENGLISH

PROFICIENT (C2)

PROFICIENT (C2)

PROFICIENT (C2)

SPANISH

PROFICIENT (C2)

PROFICIENT (C2)

PROFICIENT (C2)

FRENCH

PROFICIENT (C2)

ADVANCED (C1)

ADVANCED (C1)

GERMAN

INTERMEDIATE (B1)

ELEMENTARY (A2)

ELEMENTARY (A2)

TECHNICAL SKILLS AND COMPETENCES

COMPUTER SKILLS

- Microsoft Office (Excel, Word, PowerPoint, Outlook) → PROFICIENT
- Matlab/Simulink (numerical computing environment) → PROFICIENT
- INCA (integrated calibration and acquisition systems) → ADVANCED
- LabView (system design and development graphical programming) → INTERMEDIATE
- GT-POWER (1-D Engine Simulation Software) → INTERMEDIATE
- Python (general-purpose programming language) → ELEMENTARY

TECHNOLOGICAL SKILLS

- Engine test cell design and management → ADVANCED
- Signal processing and acquisition → ADVANCED
- Rapid Control Prototyping and Hardware in The Loop technologies → ADVANCED

OTHER SKILLS AND COMPETENCES

- Passionate international traveler, with more than 30 years of experience in organizing trips to different countries all over the world (5 continents, more than 50 different countries)
- Advanced skier, photographer and trekker

DRIVING LICENCES

Passenger Cars (Italian "B" permit) and Motorbikes (Italian "A" permit)

(Prof. Ing. Nicolò Cavina)

Bologna, April 4, 2022

I authorize treatment of my personal data in conformity with Italian law no. 196. dated 30/06/2003