



Simone Bari

Electronic Engineering

Ph.D student in Automotive Engineering for Intelligent Mobility

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🏠 Parma (PR)

🇮🇹 Cittadinanza - Italiana, 23/08/2000

PROFILE:

PhD student in Automotive Engineering (Università di Bologna) specializing in power electronics for electric vehicle applications.

Research focus: modelling, design and characterization of isolated DC-DC converters for EV applications, with emphasis on magnetic component design, operating-point analysis and loss modelling. Hands-on experience spanning full converter development — from specification and transformer design to PCB prototyping and experimental validation — through the UniPR Racing Team Formula Student programme.

Upcoming visiting researcher at the Center for Automotive Research (CAR), Ohio State University (Oct. 2026 - July 2027) - EcoCAR project

SKILLS:

- Design of isolated DC-DC converters (flyback topology)
- Magnetic component design (custom transformer)
- Power loss modelling and efficiency optimization
- EV powertrain architecture
- MATLAB / Simulink modelling
- PCB Design (Altium)

LANGUAGES:

- Italiano - Native
- Inglese - B2 First (FCE)

SOFT SKILLS:

- Analytical thinking
- Teamwork in multidisciplinary environments
- Engineering problem solving
- Attention to detail
- Adaptability
- Communication

EDUCATION AND TRAINING:

Ph.D. in Automotive Engineering for Intelligent Mobility - Powertrains, Vehicle performance and Energy Systems (41st cycle)

2025 - now

Alma Mater Studiorum - Università di Bologna

During the first year, my research has focused on the design and modelling of a flyback-based DC-DC converter stage for a Modular Multilevel Converter (MMC) architecture, extending the topology developed during my master's thesis. Work completed to date includes definition of converter specifications (60-325 V input, 48 V/150 W output, quasi-resonant BCM flyback, L6565 controller), transformer characterization, control-loop modelling and validation in LTspice, and PCB schematic/layout design in Altium Designer

MSc - Ingegneria Elettronica

2022 - 2025

Università degli Studi di Parma - 110/110

The aim of the thesis was to design and implement a 600-24 V DC-DC converter based on the ST L6565 quasi-resonant controller using a dual-switch flyback topology.

The converter was developed for integration into the electric vehicle of the UniPR Racing Team for the 2025-2026 Formula Student season.

BSc - Ingegneria Elettronica e delle Telecomunicazioni

2019 - 2022

Politecnico di Bari - 103/110

I pursued the bachelor degree in Electronic and Telecommunications Engineering, with a thesis entitled 'SENSORS FOR AUTONOMOUS DRIVING', in order to provide an overview of the current state of self-driving cars, taking a look at what are expected to be future developments.

Diploma Scuola Secondaria di secondo grado

2014 - 2019

I.I.S.S. Leonardo da Vinci, Fasano (BR) - 97/100

Future of Automotive for Intelligent Mobility (FAIM) — Summer School 2026

Dept. of Industrial Engineering, Università di Bologna, July 2026

Attended the doctoral-level summer programme (Bologna, July 20-31), covering advanced and sustainable propulsion systems, vehicle energy management and control, automotive connectivity, vehicle design and simulation, and environmental sustainability.

Passed the final multiple-choice assessment, recognized as PhD training credits.

ENGINEERING TOOLS:

- MATLAB / Simulink
- Altium Designer
- MAGNETISIM
- LTspice
- LaTeX

WORK EXPERIENCE:

Tutoring activity - Electrical Engineering course 2025 - 2026

University of Parma, Department of Engineering and Architecture

Selected for the assignment of tutoring activities for the academic year 2025–2026, supporting course in Electrical Engineering, held by my supervisor prof. Carlo Concari.

Internship at UniPR Racing Team - Electronic member 2025

I improved the previous version of the DC–DC converter used in the 2024 car. Building on this experience, during my master's thesis I designed, developed and prototyped a custom 600–24V DC–DC converter (700 W), including schematic design, PCB implementation in Altium Designer, and experimental validation, for integration in the UniPR Racing Team electric vehicle.

Lecturer - Crown Packaging Manufacturing Italy S.r.l. 2025

Training course within the project “Transizione 4.0 per la filiera alimentare” (AV1/145A/24).

Subproject ID 3561877 – Programming (Web-based, MBC Electronics).

Role: Instructor / Lecturer.

Professional Experience (Hospitality Sector) 2017

Lifeguard at ‘Il Palmento Resort’ – Locorotondo (BA), Italy
Application of water safety, first aid and emergency response procedures in a luxury hospitality environment.

CERTIFICATIONS:

Cambridge English Level 1 Certificate in ESOL International (First) - FCE-B2 2018

Obtained at I.I.S.S. Leonardo da Vinci, Fasano (BR) with a total score of 162/190

Reference number: 185IT0641005

Lifeguard – Pool and Sea 2017

Italian National Lifesaving Society (Società Nazionale di Salvamento) Certification obtained at Timo's Piscina Impero, Fasano (BR) — 2017

Valid until December 2023.

BLS-D Operator (Basic Life Support and Defibrillation) 2017

Certification for adult, child and infant resuscitation — 2017