MIRCO LENZI
CURRICULUM VITAE

PERSONAL INFORMATION

Name	**MIRCO LENZI**
E-mail address	mirco.lenzi2@unibo.it
Nationality	**ITALIAN**
Date of birth	**10/03/2000**

WORKING EXPERIENCE

• **From 03/06/2024 to 26/09/2024**	**Curricular Internship – Department of Industrial Engineering (DIN)**
• Name and type of Institution	Alma Mater Studiorum – University of Bologna, School of Engineering, Viale del Risorgimento 2, Bologna, 40137, Italy
• Main subjects/professional abilities	Data analysis with MATLAB to extract key combustion indices. Development and training machine learning models (Random Forest, LSBoost) in MATLAB on steady-state data. Advanced hyperparameter tuning to enhance model accuracy. Experimental validation of predictive models within a 0-D simulation framework under transient engine conditions.
• **From 01/04/2022 to 31/05/2022**	**Curricular Internship – Department of Industrial Engineering (DIN)**
• Name and type of Institution	Alma Mater Studiorum – University of Bologna, School of Engineering, Viale del Risorgimento 2, Bologna, 40137, Italy
• Main subjects/professional abilities	Development of Excel interface to estimate energy production from solar panels, energy storage in a battery, and energy consumption for recharging an electric commercial vehicle, aimed at performing a cost and emissions comparison with its diesel counterpart.

EDUCATION

• **From 01/11/2024 (ongoing)**	**PhD Candidate in Automotive Engineering for Intelligent Mobility (AEIM) – Curriculum 2, "Energy Systems, Powertrains, Vehicle Performance"**
• Name and type of Institution	Alma Mater Studiorum – University of Bologna, School of Engineering, Viale del Risorgimento 2, Bologna, 40137, Italy
• Research Topic	Research activities focused on the development and implementation of predictive and data-driven engine models for the control and simulation of high-performance hybrid powertrains, using conventional, synthetic, and hydrogen fuels. Supervisor: Ing. Alessandro Brusa, Co-supervisor: Prof. Nicolò Cavina.
• **From 18/09/2022 to 17/10/2024**	**Master's Degree – Advanced Automotive Engineering – Advanced Powertrain**
• Name and type of Institution	MUNER - Motorvehicle University of Emilia Romagna, Italy
• Thesis Topic	Thesis work carried out within the research group of Prof. Nicolò Cavina, focused on the development of data-driven algorithms for the estimation of key combustion indexes. Thesis title: "Development and Implementation of Regression Tree Ensemble Learning-Based Engine Models for The Estimation of Combustion Indexes". Advisor: Ing. Alessandro Brusa, Co-Advisor: Prof. Ing. Nicolò Cavina Relevant course: Modeling and Control of Internal Combustion Engines and Hybrid Propulsion Systems – Prof. Ing. Nicolò Cavina
• Final mark/Grade Point Average	**110/110 cum laude (maximum score with honors)**

• From 17/09/2019 to 07/10/2022

Bachelor's Degree – Mechanical Engineering

• Name and type of Institution

Alma Mater Studiorum – University of Bologna, School of Engineering, Viale del Risorgimento 2, Bologna, 40137, Italy

Thesis Topic

Development of an Excel model for the analysis and optimization of a photovoltaic battery energy storage (PV-BES) system for charging electric commercial vehicles for last-mile logistics. Thesis Title: "Study, analysis and optimization of a PV-BES system for charging electric commercial vehicles for last-mile logistics and comparison with diesel power supply". Advisor: Prof. Ing. Mauro Gamberi

• Final mark/Grade Point Average

110/110 cum laude (maximum score with honors)

• From 09/2014 to 07/2019

High School Diploma

• Name and type of Institution

Niccolò Copernico Scientific High School (Applied Sciences), Bologna, Italy

• Final mark/Grade Point Average

100/100

• From 13/03/2022 (ongoing)

Training courses and Seminars – 144 hours

- Seminar: "ENGINE DEVELOPMENT UNDER INDUSTRIAL CONSTRAINTS - Mass production, High-Performance and Racing Perspectives". Place/Date: School of Engineering and Architecture of Bologna (UniBo), 09/02/2026. Duration: 3 hours. Lecturer: Ing. Stefano Agazzi, Ing. Franco Cazzolato, Ing. Francesco Pulvirenti and Ing. Enrico Gualtieri.
- Embedded software development for engineering applications. Place/Date: University of Bologna, Forlì Campus, 18/12/2025. Duration: 8 hours. Lecturer: Prof. Emanuele Luigi de Angelis.
- Seminar: "Product Definition and Vehicle Concept". Place/Date: School of Engineering and Architecture of Bologna (UniBo), 11/12/2025. Duration: 3 hours. Lecturer: Ing. Maurizio Reggiani and Ing. Riccardo Parenti.
- Workshop "Sensors and Real-Time Acquisition Systems for Engineering hands-on". Place/Date: University of Bologna, Forlì Campus, 28/11/2025. Duration: 4 hours. Lecturer: MeasureIT, National Instrument.
- Data-driven Methods in Engineering. Place/Date: School of Engineering and Architecture of Bologna (UniBo), 10/06/2025-16/06/2025. Duration: 12 hours. Lecturer: Dr. Rundo, Prof. Tallarico, Prof. Zabini, Prof. Falcone and Prof. Frizziero.
- MATLAB Course on Artificial Intelligence Algorithms and Machine Learning Techniques. Place/Date: School of Engineering and Architecture of Bologna (UniBo), 17/06/2025-18/06/2025. Duration: 14 hours. Lecturer: Prof Michele Celli and Paolo Panarese.
- Python programming for scientific research. Place/Date: School of Engineering and Architecture of Bologna (UniBo), 10/04/2025-05/06/2025. Duration: 12 hours. Lecturer: Prof Beatrice Pulvirenti.
- Seminar "High Performance E-Hybrid powertrains control". Place/Date: School of Engineering and Architecture of Bologna (UniBo) in presence, 12/06/2025. Duration: 3 hours. Lecturers: Ing. Luca Rizzi and Ing. Antonio Aliperti.
- Seminar "Perspectives for H2 ICEs: combustion features" Place/Date: School of Engineering and Architecture of Bologna (UniBo) in presence, 05/06/2025. Duration: 3 hours. Lecturers: Ing. Francesco Zaffino and Ing. Luca Arrizza.
- Spring School: "Future Powertrains for Sustainable & Clean On-Road Mobility". Place/Date: Polytechnic of Turing, Turin, Italy, 10,13-14/03/2025. Duration: 19 hours. Lecturers: Dr. Ameya Joshi, Prof. Zissis Samaras, Prof. Giorgio Rizzoni, Prof. Massimo Santarelli, Prof. Silvia Bodoardo, Prof. Dr.-Ing. André Casal Kulzer, Dr. Amgad Elgowainy.
- The Craft of Scientific Research. Place/Date: School of Engineering and Architecture of Bologna (UniBo), 17/01/2025-07/03/2025. Duration: 158 hours (36 frontal lessons, 114 individual study) hours. Lecturer: Prof Marco Viceconti.
- Seminar "Challenges in Engine Calibration of High-Performance Engines". Place/Date: School of Engineering and Architecture of Bologna (UniBo) in presence, 10/12/2024. Duration: 3 hours. Lecturers: Ing. Salvatore Masucci and Dr. Ing. Ioannis Kitsopamidis.
- Uncertainty Analysis for engineers. Place/Date: School of Engineering and Architecture of Forlì (UniBo), 18-21/11/2024-02/12/2024. Duration: 12 hours. Lecturers: Prof. Antonio Segalini, Prof. Philipp Schlatter, Prof. Alessandro Talamelli.
- Workers' Training: Specific Health and Safety Training – Part I (4h)
  Location/Date: E-learning, 20/02/2022.
- Workers' Training: General Health and Safety Training (4h)
  Location/Date: E-learning, 19/02/2022.

- Workers' Training: Specific Health and Safety Training – Medium Risk (4h)
  Location/Date: School of Engineering and Architecture of Bologna (UniBo), 13/03/2021.

LIST OF PUBLICATIONS

• From 01/11/2024 (ongoing)

Articles in International Journals:

Brusa, A.; Grossi, A.; Lenzi, M.; Shethia, F.P.; Cavina, N.; Kitsopanidis I., "Modeling of Exhaust Gas Temperature at the Turbine Outlet Using Neural Networks and a Physical Expansion Model". Energies 2025, 18(7), 1721. **https://doi.org/10.3390/en18071721.**

PERSONAL SKILLS

NATIVE-SPEAKER LANGUAGE

Italian

OTHER LANGUAGES KNOWN

English – B2 First Certificate Cambridge

• Reading capabilities B2
• Writing capabilities B2
• Speaking capabilities B2

INTERPERSONAL SKILLS

Team-oriented mindset with a problem-solving attitude and a strong commitment to achieving measurable goals. Able to collaborate effectively, build positive relationships, and contribute constructively to group efforts. Strong learning ability, curiosity for innovation, and attention to both organizational and interpersonal dynamics. Skills developed through academic projects during bachelor's and master's degree, but especially with the research group during my PhD.

ORGANIZING SKILLS

Good organizational skills, with the ability to coordinate both personal tasks and team efforts during group projects. Experienced in planning strategies to meet objectives, managing time effectively, and ensuring deadlines are met. Skills developed through academic projects during bachelor's and master's degree, but especially with the research group during my PhD.

TECHNICAL SKILLS

Software
Matlab, Simulink → Advanced user
Excel and VBA language → Proficient user
Microsoft Office → Advanced user
Programming Languages
Python → Basic knowledge
C → Proficient user
Java → Basic knowledge

DRIVING LICENSES

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SUBSTITUTIVE DECLARATIONS OF CERTIFICATIONS

(Art. 46 D.P.R. n. 445/00)

SUBSTITUTIVE DECLARATIONS OF THE DEED OF NOTORIETY
(Art. 47 D.P.R. n. 445/00)

The undersigned Mirco Lenzi, C.F. LNZMRC00C10A944A, born in Bologna on 10/03/2000 and residing in Bologna, male, for this purpose and aware of criminal sanctions, in the case of untruthful declarations, training or use of false acts, referred to in art. 76 of D.P.R. 445 of 28 December 2000

STATES

that the personal data, statuses, personal qualities, information and titles contained and detailed in this Curriculum correspond to the truth and to be in possession of all the titles reported in it.

Bologna, 28/05/2025 Mirco Lenzi

signature

This declaration does not require signature authentication if, pursuant to art. 38, D.P.R. 445/00, is signed and sent together with the photocopy, not authenticated of an identity document of the declarant, to the competent office.