

## curriculum vitae

### PERSONAL INFORMATION

Surname	<b>Belloni</b>
Name	<b>Mattia</b>

### Education and training

• Date (from – to)	2018-2021
• Name and type of organisation providing education and training	Politecnico di Milano
Duration of the program of study	2
• Principal subjects/occupational skills covered	System dynamics, Ground vehicle, Mechatronics, Numerical methods
• Title of qualification awarded	Master of Science in Mechanical Engineering
Final mark obtained	108/110

### graduation thesis

Title	Torque distribution strategy for independent wheels driven electric vehicle accounting for electric and mechanical brake
Language	English
Supervisor	Michele Vignati
Thesis Summary	<p>The diffusion of electric motors in the commercial passenger cars leads the possibility to manage the torque at the wheels differently with respect the traditional vehicles. In additions, these motors are able to deliver negative torque to the wheels allowing to contribute in the actuation of the braking manoeuvre. The thesis proposes a torque management control logic for independently driven electric wheel (i.e. one motor per each wheel) that minimizes the power consumption in traction phases and maximize the energy regeneration in braking phases. Moreover, the electro-mechanical torque repartition at each wheel have been studied focusing also on the emergency braking conditions. The effectiveness of the new torque management algorithm has been verified with a numerical model of the entire vehicle, by simulating different driving scenarios. Furthermore, the electromechanics braking distribution has been tested on a dedicated bench that simulates the quarter car model vehicle.</p>

• Date (from – to)	2015-2018
• Name and type of organisation providing education and training	Politecnico di Milano
Duration of the program of study	3
• Principal subjects/occupational skills covered	System dynamics, Machine design, Manufacturing processes
• Title of qualification awarded	Bachelor's degree in mechanical engineering
Final mark obtained	96/110

<b>publications and articles submitted</b>	
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Author(s) and title	Michele Vignati, Mattia Belloni, Davide Tarsitano, and Edoardo Sabbioni: “ <i>A regenerative braking strategy for independently driven electric wheel accounting for contemporarily use of electric and hydraulic brakes.</i> ”
Language	English
Publication place	IAVSD 2021
Date of publication	19 August 2021

Author(s) and title	Michele Vignati, Mattia Belloni, Davide Tarsitano, and Edoardo Sabbioni: “ <i>Optimal cooperative brake distribution strategy for IWM vehicle accounting for electric and friction braking torques.</i> ”
Language	English
Publication place	Hindawi
Date of publication	10 July 2021

<b>certifications</b>
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Certifications of language knowledge	TOEIC, 21/09/2018, Listening (450/495) and Reading (405/495)
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<b>Work experience</b>
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<b>Date</b>	June 2021 – October 2021
Name and address of firm	Modis Consulting S.r.l., via Bruno Buozzi, 10, 10123 Torino (TO)
Type of business or sector	Consultant for motion control team at the CRF- Centro Ricerche Fiat, Str. Torino, 50, 10043, Orbassano (TO)
Type of employment	Control System Engineer
Main activities and responsibilities	Design, develop and analyse technical solutions for vehicle actuation control: <ul style="list-style-type: none"> <li>- Braking system modelling from a braking system test bench</li> <li>- Steering system modelling from a steering system test bench</li> <li>- Design of control logic diagnosis</li> </ul>
<b>Date</b>	November 2021 – nowadays
Name and address of firm	Politecnico di Milano, Via Raffaele Lambruschini, 20156, Milano (MI)
Type of business or sector	PhD course in Mechanical Engineering (systems mechanics)
Type of employment	Mechanical Engineer

<b>Personal skills and competences</b>
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Mother tongue	<b>Italian</b>
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Other language(s)
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	<b>English</b>
• reading	Good
• writing	Good
• speaking	Good

Social skills and competences	The ability in team working has been developed during projects at Politecnico di Milano with different colleagues. In addition, the work as a waiter on call (from 2013 to 2018) requires relational skills that allow to interface both with colleagues and customers. In the end, a very long experience in private lessons with students at middle school, high school and university let me to develop good communication skills.
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Organisational skills and	Organisational skills had been developed during the bachelor's degree when my routine was
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competences	divided between the study at university, the private lessons, the work as waiter on call and my passions. More in detail, during the work as a waiter I was responsible of an entire restaurant hall with the role of coordinating the other colleagues work with costumers needed and the kitchen times. During the project works at Politecnico di Milano I usually had the team leading, with the role to make sure that the deadlines were respected and to coordinate the contributions of the whole team.
Technical skills and competences	Strong knowledge of the software Matlab/Simulink developed by an intensive use during university courses, team works and thesis work. Good competence in CAD design software (Catia, Inventor, Solid Edge, Solid Works, Abaqus CAE) due to a massive use in machine design courses and projects. Knowledge about simulation software developed during MS courses (Adams Car, VI Grade, CarMaker). Experience in programming in C and C++ languages acquired during thesis work and during personal use of Arduino's devices.
<b>Additional information</b>	Strong passion for cars, motorbikes, and motorsports. In my free time I love travel with my motorbike, play chess and read books. About once a month I like going to theatre or to visit a museum or an exhibition. Driving licences: A, B.

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 and application for recruiting purposes.  
Autorizzo la pubblicazione del mio Curriculum Vitae sul sito istituzionale del Politecnico di Milano (sez. Amministrazione Trasparente) in ottemperanza al D. Lgs n. 33 del 14 marzo 2013 (e s.m.i.).