



Tommaso Bocchietti

MECHANICAL ENGINEERING STUDENT AT POLITECNICO DI MILANO

Via Montagnola 13, San Fermo della Battaglia (CO, ITA)

✉ tommaso.bocchietti@gmail.com | ☎ (+39) 342-501-6560 | 🏷 www.bocchio.dev | 📺 Bocchio01

"Get things done!"

Education

Politecnico di Milano

MASTER'S DEGREE IN MECHANICAL ENGINEERING (FIELD OF MECHATRONICS AND ROBOTICS)

- Joined the "Polimi Sailing Team" in the "Mechatronics" department

Milan, Lombardy, Italy

Sep. 2023 - PRESENT

University of Waterloo

MASTER'S DEGREE IN MECHANICAL ENGINEERING (ERASMUS)

Waterloo, Ontario, Canada

Jan. 2024 - Apr. 2024

Relevant courses taken:

- Advanced Finite Element Analysis: coded a 2D FEM solver for non-linear and plastic materials in MATLAB
- Computational Fluid Dynamics: coded a 2D CFD solver for incompressible fluid in C and a 1D compressible fluid solver in MATLAB
- Materials for Nano and MEMS: complete a research project about Chip-Scale Atomic Clocks

Politecnico di Milano

BACHELOR'S DEGREE IN MECHANICAL ENGINEERING

Milan, Lombardy, Italy

Sep. 2020 - Jul. 2023

- Selected for participating in the "Pro Hackin' Project 2023" (A.Y.2022/23)
- Selected for competing at SWERC 2021 (A.Y.2020/21)
- Third place in an internal coding competition using MATLAB (A.Y.2020/21)

Scientific High School "Paolo Giovio"

HIGH SCHOOL DIPLOMA, SCIENTIFIC

Como, Lombardy, Italy

Sep. 2015 - Jun. 2020

- Italian Physics Olympiad: admitted to regional selection (Feb. 2019)
- Italian Informatics Olympiad: admitted to regional selection (Apr. 2019, Apr. 2018)
- Italian Mathematics Olympiad: admitted to local district selection (Feb. 2017)

Skills

Personal Analytical Skills, Problem-Solving, Leadership, Manual dexterity

Engineering Software MATLAB, CATIA, SolidWorks, Ansys Fluent

Programming C, PHP, MySQL, Java, Python

Languages Italian (Mother tongue), English (Limited Working)

Experience

Polimi Sailing Team

MECHATRONIC ENGINEER

Politecnico di Milano, Lombardy, Italy

Oct. 2023 - PRESENT

- Coded from scratch high performance NMEA0183 libraries.
- Worked with STM32 microcontrollers to create interfaces for the sensors and the control algorithms.

Orienteering Como

MAPPER

Lombardy, Italy

May. 2018 - PRESENT

- Responsible for the society's cartography.
- Drawn several new Orienteering maps using the International Symbols Specification.
- Handled many homologation iter with the official Italian Federation for this sport.
- Developed a cloud-based architecture to facilitate the access and use of the map archive to all the members of the society.

Self-Employed

PRIVATE TEACHER

Online & Como, Lombardy, Italy

Feb. 2018 - PRESENT

- Private lessons and support in scientific subjects for students facing challenges.
- Age of students ranged from 14 to 19 years old.

Confedilizia Como

SOFTWARE DEVELOPER

- Responsible for the development and distribution of a new software needed by the association.
- Developed the computer software for the specific needs and requests from the client.
- Developed the web platform (front-end & database) for the secure distribution of the software to requesting clients.

Como, Lombardy, Italy

Apr. 2020 - Feb. 2021

Ennova Research

WEB PROGRAMMER

- Period of internship for the "Alternanza Scuola Lavoro" national project.
- Developed a dynamically generated web page using Node.js and JavaScript.

Lomazzo, Lombardy, Italy

Jun. 2018

Extracurricular Activity

Italian Orienteering Committee

IT TECHNICIAN

- Organizational IT aid at major Italian Orienteering Events.
- 5 Days of Italy (Jul. 2022 - PRESENT)
- International MeetingOfVenice (Nov. 2018 - PRESENT)

Italy

Nov. 2018 - PRESENT

Orienteering Como

EVENTS ORGANIZER

- Educational and promotional outings in the role of instructor (mainly for schools or local association).
- Organizer playing key roles (controller or course-setter) in smaller events such as promotional or regional competitions.

Lombardy, Italy

Gen. 2017 - PRESENT

Orienteering Como

COUNCIL MEMBERS

- Member since Feb. 2016
- Council Member since Sept. 2021

Como, Lombardy, Italy

Sept. 2021 - PRESENT

Honors & Awards

2021/2023 **Merit Exemption**, Scholarship aimed at the group of top students based on GPA

Milan, Italy

2021 **Best Freshman Award**, Scholarship aimed at the group of top freshmen students based on GPA

Milan, Italy

Certifications

Arduino 90/100 Official Arduino certification, obtained on 17 Apr. 2024

TOEFL 90/120 Test of English as a Foreign Language, obtained on 23 Aug. 2023

TOEIC 975/990 Test of English for International Communication, obtained on 12 Jul. 2023

Hobby & Personal interests

I love to go for adventures that push me both physically and mentally.

For the past 8 years, I've been practice orienteering, a sport demanding map reading, physical effort and fast decision-making. Beyond that, I've done (and I'm planning for more) a couple of bikepacking journeys, conquering routes Como-London (1200km+) and Como-Barcelona (1100km+). These self-supported adventures showcase my tenacity, adaptability, and problem-solving skills in facing new situations and challenges.

Projects

Model Rocket

PERSONAL PROJECT TO CELEBRATE THE BACHELOR DEGREE

Personal Workshop, Como, Italy

Jul. 2023



Designing, optimization and building of a **63cm** model rocket.

Final design was achieved after a couple of iterations between CAD model and CFD simulations. Built mostly from cheap materials (cardboard & wood) and 3D printed parts (PLA based). Essential characteristics:

- Flight time $\approx 60\text{s}$, maximum speed reached $+120\text{m/s}$, maximum acceleration $+10g$.
- Recovery system based on parachute, fully functional and reliable.
- On board flight computer with barometric, temperature and acceleration sensors capable of logging data.

Pro Hackin' Project 2023, in partnership with RIMAC Automobili

VALID AS FINAL PROJECT FOR BACHELOR DEGREE AT POLITECNICO DI MILANO

Politecnico di Milano, Lombardy, Italy &
RIMAC Automobili, Croatia

Mar. 2023 - Jun. 2023



Idealize and Design a Personal Transportation Vehicle (Sidewalk vehicle).

Team-based project with students from 4 top European universities, featuring feedback sessions after each hackathon by company engineers. Selected as winning team.

- Hackathon 1: visions, user personas and functions & requirements
- Hackathon 2: functional decomposition, morphological matrix and concepts development
- Hackathon 3: CAD design, FEM simulations, FMEA and cost analysis.

Selection of other minor projects

DONE FOR FUN OR FOR MY PEER STUDENTS

Personal Workshop, Como, Italy

2021 - PRESENT



CNC plotter to go from any digital image to its physical representation.

- Arduino based plotter with custom software.
- Canny edge detection algorithm.
- Recycled components from old DVD drives and wood.

DC electric motor model to explain its working principle to my peer students.

- Recycled components from an old lawn mower and wood.
- Controllable in speed via a custom electrical circuit (diodes bridge and potentiometer).