



Matteo Corti

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<http://cortimatteo.it/> | **Website:**

https://www.youtube.com/channel/UC_SDaesiXmgKeUNzdMV4pMg?view_as=subscriber |

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WORK EXPERIENCE

05/06/2023 – CURRENT Cologno Monzese, Italy

SOFTWARE ENGINEER TXT GROUP

In a newly recently created HW branch of Lainate, I'm the lead software designer in developing test procedures regarding electronic boards for avionics and space.

I have the opportunity to work with state-of-the-art hardware with industry-leading clients.

I became familiar with the strict SOPs needed for testing and interfacing with the clients.

I focus particularly in:

1. Implementing automated test procedures for validating boards.
2. Implementing drivers, mainly for PXI hardware, but also for Siemens and Backhoff HW, integrated into a testing system.
3. Developing custom HW and SW needed to satisfy the most demanding testing procedures.
4. Writing documentation and reports that need to be both information-dense and easy to digest, always with the project's longevity in mind.

Business or Sector Professional, scientific and technical activities | **Website** <https://www.txtgroup.com/it/>

05/09/2021 – 04/06/2023 Castelletto sopra Ticino, Italy

APPLICATION SOFTWARE DEVELOPER COBO

Application software developer for heavy machineries such as cranes, lifters, and tractors.

Working in a team on developing the architecture for managing complex Can-Bus systems (CanOpen and J1939), with multiple ECUs, tied together with a touchscreen display, or dashboard, for both displaying information, and receiving input from the user for performing specific tasks.

I design also the GUI for the dashboard itself, which is either a 7" or 10 " touch-sensitive surface.

Developing the graphical interface, which starts from the client's requirements is a challenging and inspiring aspect of my work here.

Numerous ECUs are almost always required, like boards for managing inputs and outputs; these devices require embedded high-performing software.

Other CanBus devices are employed and managed using an industry-standard communication protocol.

A close relationship with the final client is also required, for tailor-made adjustments to the specific project. On-the-field tests are, in this sense, almost essential and also welcomed, in order to have a firm grasp on the project's specifics.

I also developed experience with the certification processes of our devices. I write, alongside colleagues, documentation such as FMEDA for fielding in-house hardware, working with representatives of TÜV Rheinland. Preparing the documents needed for keeping track of the requirements provided by EN norms, is a challenging and very important part of HW certification.

Finally, certification for the final application is also required. I worked with firms like Icepi for performing the essential test on the prototype of the final application.

The team always strives towards innovation and I'm lucky enough to be on the front line in the innovation process, in particular developing new approaches for solving problems, such as employing Matlab and Simscape in order to generate C code, apt to be run on our hardware.

A recent increase in personnel gave me the chance of being responsible for the first days and weeks of several new colleagues. I quite enjoyed the challenge and appreciated the possibility of making someone else's first day in a new position, a little bit easier.

The last project I was in charge of regarded the software implementation of a scissor lift, in compliance with UNI EN-280 (GUI and machine logic).

Implementing by scratch the safety functions needed has been very interesting. I was able to test the software directly on the first prototypes and this possibility gave me a deep insight into the challenges involved in bringing a compliant software up to the customer standard.

The certification process of the software as well as the firmware, conducted with an external auditor has also been an exciting challenge, getting to understand better the point of view of whom is in charge of keeping our machine safe is key knowledge for any software designer, in my opinion.

Business or Sector Manufacturing | **Department** Application Software | **Website** <https://www.cobogroup.net/it/>

05/09/2022 – 02/06/2023 Italy

WEB DEVELOPER SELF EMPLOYED

Leading a small team in developing a cloud based solution for taking track of employers time sheets for a startup based in Milan.

I developed the system using PHP, MySQL and Javascript, with no framework.

Working mainly on the back-end I learned how to project, implement and manage a multi user system, with particular care for long term and low impact maintenance.

Simplicity was key, both in the picking of the architecture and in the user experience that had to be front and center, since the majority of such solutions offer such a poor and hard to comprehend flow.

08/12/2020 – 05/09/2021 Milan, Italy

ENGINEERING SOLUTION CONSULTANT AYES

Working in a team framework to provide project-based solutions, implement, and integrate information display units for the Automotive and Heavy Machinery world.

The most relevant project regarded software development in a real-time environment using industry-standard protocols such as CAN-open and J1939.

31/08/2020 – 07/12/2020 Milan, Italy

IT SOLUTIONS CONSULTANT SELF EMPLOYED

Project and implementation, mainly using MS Office tools such as MS Access, of custom-built tools for managing office tasks, producing of documentation as well as solutions to streamline the design process, in manufacturing.

08/09/2019 – 30/08/2020 Rescaldina, Italy

PRODUCTION DESIGNER AND TOOLS DEVELOPER EMERSON

1. Computer Science: During my experience at Emerson I was integrated in the engineering branch of the manufacturing process. In particular, I manage the tools used for developing new valves. I used my computer science skills for streamlining some of the most time-consuming processes. I developed tools using MS Access with deep integration with VBA and SQL, as well as in Excel, always with VBA integration.
2. Quality Control and Certification: I gather some experience in this field by taking care of the documentation required for the approval of new materials employed in the manufacturing process, with compliance with PED directives as well as with ASME directives.
3. Engineering: I had the chance to implement analytical tools to evaluate the behavior of different mechanical components. This has been done with the help of ASME VIII documentation.
4. FEM: I developed tools for performing simulations involving the structural resistance of different components. I used mainly Comsol Multiphysics and I focused my efforts on developing apps for performing simulations in a more intuitive manner in order to improve accessibility to these usually very skill-sensitive tools.

Business or Sector Manufacturing | **Website** <https://www.emerson.com/it-it/automation/valves-actuators-regulators>

02/2019 – 09/2019

JOB SEARCH

1. Relations with suppliers and clients
2. Handling and monitoring assembly processes
3. Computer systems management with windows based servers
4. Elaboration 2D/3D drawings
5. Emission design details
6. Monitoring progress made during the development of the job
7. Developing one-time-only resources managing system
8. Documentation for testing

● **EDUCATION AND TRAINING**

31/08/2020 – 10/10/2024 Milan, Italy

AERONAUTICAL ENGINEER Politecnico di Milano

The thesis I had the opportunity to develop at the end of my time at Polimi, inserts itself in the Europe-founded HERWINGT project. In particular, my work was instrumental in defining the actuation system for controlling a morphing aileron of a high aspect ratio wing, with an induction electric motor capable of high bandwidth actuation. You can read more on my website.

Website <https://www.polimi.it/> | **Field of study** Motor vehicles, ships and aircraft |

Thesis STUDY OF A NOVEL LARGE BANDWIDTH ACTUATION SYSTEM FOR A MORPHING CONTROL SURFACE

25/09/2008 – 04/03/2019 Milano, Italy

AEROSPACE ENGINEER Politecnico di Milano

- 3D drawing and modeling software (solid works, solid edge, Inventor)
- Data analysis software and script development with Matlab
- Computer science (C, Python, Processing, Excell)
- Dynamic system analysis
- Static structure development
- System control
- Introduction to fluidodynamics
- Experimentation and data acquisition
- Flight mechanic

Level in EQF EQF level 6

10/09/2003 – 11/07/2008 Como, Italy

PERITO MECCANICO istituto tecnico industriale superiore I.T.I.S. Magistri Cumacini

General:

- english
- law
- computer science
- ...

Professional:

- Production process technology
- technic drawing
- PLC systems
- CNC
- traditional milling machines
- pneumatic systems
- autocad 2/3D
- technical office management

Level in EQF EQF level 5

-AERONAUTICAL STANDARD
-METEOROLOGY
-AIR CIRCULATION
-DEPLOYMENT OF SAPR
-ELECTRONIC COMPONENTS
-COMUNICATION TX/RX PROTOCOLS

21/04/2022 – 21/04/2026

PLE WITH AND WITHOUT STABILIZERS AiFOS

● **LANGUAGE SKILLS**

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C1	C1	C2
GERMAN	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● **DIGITAL SKILLS**

Databases

Programming Languages / Frameworks

LAB VIEW | C | CSS | PROCESSING | PHP | Matlab/SIMULINK | VBA | Matlab | Simulink | Simscape | HTML | MATLAB | Python | JavaScript | Git | SQL

Tools

Freescale | Xfoil (Good) | Arduino IDE | AutoCAD | CodeWarrior | Catia V | COMSOL Multiphysics | Fusion 360 | Inventor | Drupal8 | Solidworks | Solidedge | Ultimaker cura 3D printing | Web Design (WordPress Wix) | Embedded Devices | Teststand

MS Office

MS Access | MS Excel | MS Powerpoint | MS Word | MS Outlook | Microsoft Office

Communication

SPI | Automotive domain network knowledge ie Ethernet and CAN | CAN j1939 | CANBUS | CanOpen

Hardware

PCB design (Eagle - KiCAD)

● **DRIVING LICENCE**

Driving Licence: A

Driving Licence: B

● **ORGANISATIONAL SKILLS**

Organisational skills

Good managing skills acquired both during time served as a volunteer as secretary at "Magic Bus" of Olgiate Comasco association and during the time spent managing renovation projects involving several contractors and financial institutions.

● **JOB-RELATED SKILLS**

Job-related skills

1. Maintaining and managing the relationships with suppliers and customers, including progress assessment and updating
2. Managing progress and information flow with Microsoft Access
3. Handling of orders and billings via Microsoft Access databases
4. Experience in building and maintaining drupal-based websites
5. Monitoring of incoming supplies
6. Develop of NodeMCU related projects
7. Develop open-source projects, domotic-related and sensor data gathering, mainly Arduino based and development of the scripts for output analysis
8. Experience in Windows-based machine building
9. Skilled pond welder for prototype development
10. Streamline computational tools and processes
11. Perform FEM studies on mechanical components
12. Working with certificating bodies for the approval of QC documentation (Tuv, Icepi)

● **CREATIVE WORKS**

Other projects

I enjoy developing other projects in my spare time, such as:

1. from code to prototype development of simple IoT devices, to be integrated with HomeAssistant. Creating the device from the software to the 3d printer allows me to have a meaningful overview of all the development phases
2. my website www.cortimatteo.it, which I host on my own server, was developed entirely from scratch employing MySQL + PHP + Javascript
3. an LMM-friendly journaling platform. I developed www.mefortherecord.com because I wanted an easy-to-use, cloud-based journaling platform that would also allow me to export all of my data stored in an LMM-friendly way with the final goal of using such data for instructing a personalized LMM.