

# Francesco Argentieri

Mechatronic Engineer

## contact

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## languages

Italian—mother tongue  
English—upper  
intermediate

## education

- 2015 – 2020 **M. Sc.** in Mechatronics Engineering University of Trento  
Thesis "*Enhancing UAV capabilities with machine learning on board*".  
Specialization in Mechanics–Mechatronics
- 2008 – 2015 **Bachelor** in Mechanics Engineering Marche Polytechnic University  
Thesis "*Structural analysis of an automotive hot formed sheet component with variable thickness*".  
Specialization in Energy–Thermomechanical

## experience

- 05/2022 – PRESENT **Rimac Technologies - Kineton** Naples, Italy  
"*Software developer - Consultant*".  
Infotainment software developments for Hyper/Luxury cars. Program-  
ming in C++17 language and use of Qt framework.  
**software:** C++, Qt, QML, Git, BitBucket, JIRA
- 06/2020 – 05/2022 **Kineton** Naples, Italy  
"*Embedded software developer*".  
I developed the applications Qt/QML and services for Automotive Grade  
Linux. So, I have gained experience in software development using OOP,  
enhancing my knowledge regarding C++17, STL and Linux Environment.  
**software:** C++, Qt, QML, AGL (Automotive Grade Linux), Git, GitLab

## academic projects

- 04/2019 – 03/2020 **University of Trento** Trento, Italy  
"*Enhancing UAV capabilities with machine learning on board*".  
This project focuses on the activity of providing the drone's ability to take  
advantage of the detection and classification of objects with TensorFlow  
Lite. The whole system is run on ARM cortex-A53 and TPU processors for  
tensor calculation, the project uses Raspberry Pi3b and Coral Dev-Board.  
**software:** Python, Tensorflow, Altair PBS (HPC), C++/Qt,  $\LaTeX$
- 09/2018 – 11/2018 **University of Trento** Trento, Italy  
"*Rapid development CNN for image classification using fine-tuning tech-  
niques and implementation on SoC systems*".  
Train CNN for binary classification by refinement techniques starting from  
already known models. Optimization and execution for devices low power  
consumption hardware such as Intel Movidius USB and Raspberry Pi 3B.  
**software:** Python, Keras, Tensorflow, Altair PBS (HPC),  $\LaTeX$

09/2017 – 06/2018	<b>University of Trento</b> <i>"Distributed robots mapping exploration".</i> The project explores the problem of localization and mapping for an unknown environment with a team of robots. The simulation shows SLAM techniques based on Montecarlo to reconstruct the map using several robots at the same time to map the environment. <b>software:</b> Matlab, mex, C++, $\LaTeX$	Trento, Italy
05/2017 – 08/2017	<b>University of Trento</b> <i>"Helicopter's tail-boom and rotor vibration analysis".</i> The project finite-element developed to predict and analyzing free vibration characteristics of two different helicopters tail structures using static structural and dynamic analysis emphasis on the rotor's starting phase. <b>software:</b> Ansys Mechanical (APDL), $\LaTeX$	Trento, Italy
02/2015 – 06/2015	<b>DIISM, Marche Polytechnic University</b> <i>"Structural analysis of an automotive hot formed sheet component with variable thickness".</i> The project developed regarding automotive components hot formed with variable thickness by FEM analysis. The purpose was to compare the components with variables thickness, verify its response to static stresses respect a previous study where the same component had constant thickness. <b>software:</b> Ansys Mechanical, Altair HyperMesh, LsDyna, Qt, $\LaTeX$	Ancona, Italy

## skills

### Programming

C, C++, Qt, Python, Ruby

### Software

Microsoft Office, Visual Studio Code

### Package

Ansys, HyperWorks, Maple, Matlab, FreeCad

### Other

$\LaTeX$ , Arduino, Raspberry Pi

### OS

Linux, MacOS, Windows

## certification

2022 **Solid C++**

Udemy

2021 **ROS For Beginners (ROS Noetic, Melodic, Kinetic)**

Udemy

2021 **Autonomous Robots: Kalman Filter**

Udemy

2020 **Graduation to Professional Engineer (Italian legislation)**

24 July - I session - University of Trento

2018 **Safety in the laboratory**

University of Trento

2015 **Council of Europe Level B1 (PET)**

Cambridge English, University of Cambridge

## **driver's license B**

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September 19, 2022