FrancescoArgentieri

Mechatronic Engineer

contact

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Francesco Argentieri
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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. Programming 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 techniques 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 **University of Trento** Trento, Italy

"Distributed robots mapping exploration".

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.

software: Matlab, mex, C++, LaTeX

05/2017 – 08/2017 **University of Trento** Trento, Italy

"Helicopter's tail-boom and rotor vibration analysis".

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.

software: Ansys Mechanical (APDL), LaTeX

02/2015 – 06/2015 **DIISM, Marche Polytechnic University** Ancona, Italy

"Structural analysis of an automotive hot formed sheet component with variable thickness".

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.

software: Ansys Mechanical, Altair HyperMesh, LsDyna, Qt, LaTeX

skills

Programming
C, C++, Qt, Python, Ruby

Package
Ansys, HyperWorks, Maple, Matlab, FreeCad

OS
Linux, MacOS, Windows

Software
Microsoft Office, Visual Studio Code

Other
LaTeX, Arduino, Raspberry Pi

certification

10 / 2022 **Qt 6 Core Intermediate with C++**
Udemy

09 / 2022 **Solid C++**
Udemy

10 / 2021 **Autonomous Robots: Kalman Filter**
Udemy

02 / 2021 **ROS For Beginners (ROS Noetic, Melodic, Kinetic)**
Udemy

07 / 2020 **Graduation to Professional Engineer (Italian legislation)**
24 July - I session - University of Trento

12 / 2018 **Safety in the laboratory**
University of Trento

12 / 2015 **Council of Europe Level B1 (PET)**
Cambridge English, University of Cambridge

driver's license B

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