





# Gianmarco Calabrese

*Mechanical Engineer Student*

## Education

2020 **Master in Mechanical Engineering** *ETH, Eidgenössische Technische Hochschule Zürich.*

Nuclear Energy Systems, Introduction to Aircraft and Car Aerodynamics, System Modeling, Wind Energy, Renewable Energy Technologies, Technology and Policy of Electrical Energy Storage, Aircraft Aerodynamics and Flight Mechanics, CO<sub>2</sub> Capture and Storage and the Industry of Carbon-Based Resources, Gasturbinen: Prozesse und Verbrennungssysteme, Compressible Flows.

2017 - 2020 **Bachelor in Mechanical Engineering** *UniGe, University of Genoa, Italy.*

Analysis I and II, electrical engineering, computer science, general mechanics, thermodynamics, control systems, fluid dynamics, materials science, internal combustion engines, turbines and compressors.

## Selected Projects

July 2022 **Semester Project - A framework for Life Cycle Assessment of synthesizing heterogeneous catalysts for CO<sub>2</sub> hydrogenation**

Constructing an LCA model on Activity-Browser using Brightway2 to evaluate the environmental impacts related to the synthesis of catalysts.

July 2020 **Bachelor Thesis - Fluid flow on a micro-structured rough wall**

Development of equivalent or effective conditions to be applied at a certain distance from the real rough wall to replicate its effect (Navier-Stokes equations and FreeFEM++).

May 2020 **Multidisciplinary project - Combined Cycle Power Plant Simulation**

EES simulation of a pilot-scale combined power plant integrated with solar energy for electricity and heat production. Analysis and parameter improvements for off-design working conditions.

## Technical Skills

Hard Skills & Tools Complete Office pack, Latex, C++, FreeFEM++, Activity-Browser, COMSOL, Python, AutoCAD, EES, VBA Excel, Brightway2, Grapher (Apple), Matlab, Adobe Photoshop, Adobe After Effects

Languages Italian (native), English (C1), Spanish (A2)

## Relevant Extracurriculars

2016 **Voluntary Work - CoL (Ligurian Cancer Center), Genoa, Italy.**

50 hours of initial course for information and educational activities as a volunteer and successive volunteering activity.

Actual Mixed Martial Arts fighter, passionate about sports cars and motorcycles, drums player.