

# Omar Kahol

🏠 September 14th, 1998 | 🌐 website | 🐙 github | 🔗 linkedin

## Personal Profile

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I graduated in Aeronautical Engineering from Politecnico di Milano, with a specialization in aerodynamics. Through my coursework, I have developed both computational and experimental skills. Additionally, my participation in various multidisciplinary projects has helped me to cultivate a diverse set of horizontal skills that enable me to collaborate effectively across different fields and industries.

## Education

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### Alta Scuola Politecnica

Milano, IT

Honour's Programme - Double degree

Dec. 2021 - Feb. 2023

- **Project:** REGIM, analysis, development and testing of an electromagnetic regenerative shock absorber.
- **Courses:** Dynamics of Innovation, Design methods and processes, Decision Making, The Intangible Matter of Places, Communication Skills

### Politecnico di Milano

Milano, Italy

Aeronautical Engineering

Sep. 2020 - May 2023

- **Grade:** 110 cum Laude
- **GPA:** 29.75/30
- **Thesis:** Scaling Relations for the Geometry of Wire-to-Airfoil Atmospheric Ionic Thrusters.

### Università degli Studi di Padova

Padova, Italy

Ingegneria Aerospaziale - Aerospace Engineering

Oct. 2017 - July 2020

- **Grade:** 110 cum Laude
- **GPA:** 29.14/30
- **Thesis:** Parallel Computing techniques for Advection Diffusion Problems.
- Winner of the 2018 prize *Mille e una Lode*.

### Liceo Leopardi Majorana

Pordenone, Italy

Maturità Scientifica - Scientific Lyceum

Sep. 2012 - July 2017

- **Grade:** 100 cum Laude

## Work Experience

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### GoStudent

Online Job

Teacher

2021-2023

- **Activity** - Teacher of (high school and college level) mathematics, physics, computer science, fluid mechanics and flight mechanics.

### Vertiv

Tognana, Italy

Internship - HVAC Engineer

2018-2019

- **Period:** 6 months in total at the R&D office and laboratory.
- **Goal:** As part of my role, I utilize company software to perform thermodynamic calculations on the performance of HVAC machines. This involves analyzing the thermodynamic, hydraulic, aerodynamic, acoustic, and electric performance of the machines.
- **Tutors:** Prof.ssa Roberta Bertani and Ing. Mario Scattolin.
- **Technical Skills:** Thermodynamics, HVAC, python, data analysis.
- **Soft Skills:** Presentation skills, communication skills, team work.

## Projects and Activities

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### Skyward Experimental Rocketry

Milano, Italy

Politecnico di Milano

Oct. 2020 - Oct. 2021

- As a member of the CFD team, I conducted CFD simulations of Skyward's rockets at different mach numbers, both subsonic and supersonic, to analyze the forces and torques exerted on the body.
- As a member of the CFD methodology team, I developed a comprehensive framework for preprocessing, running, and postprocessing simulations. This involved creating Python libraries that automated the meshing process, set up the simulations, and analyzed the results.
- **Technical Skills:** CFD, OpenFoam, Python
- **Soft Skills:** Teamwork, Presentation skills, Report writing.

## Alba CubeSat

Università degli Studi di Padova

Padova, Italy

Jan. 2020 - June 2020

- I became a member of the OBTS team during the initial phase of this university project that aimed to launch a cubesat. As part of my role, I contributed to defining the mission goals and requirements, specifically related to the OBTS subsystem
- **Technical Skills:** OBTS, CubeSat
- **Soft Skills:** Presentation skills, Teamwork.

## ESA Ladybird Guide to Spacecraft operations

ESEC's Galaxia

Libramont, Belgium

Sept. 2019

- I was one of 30 students from across Europe chosen to participate in the European Space Agency's course on spacecraft operations. Throughout the program, I attended various lectures covering relevant topics, as well as completed a small project that applied the concepts I had learned.
- **Grade:** A
- **Technical Skills:** Spacecraft operations.
- **Soft Skills:** Teamwork, presentation.

## Oceans

Università degli Studi di Padova

Padova, Italy

Jan. 2018 - Jan. 2020

- I was a member of the on-board software team for the 'Oceans' project, which involved the design, construction, and testing of a sounding balloon equipped with cameras and computers capable of identifying and tracking vessels in the sea.
- I played a significant role in developing a Python-based machine learning software that successfully identified boats from the on-board camera images. Additionally, I created an algorithm capable of computing the coordinates of the recognized vessel, which was critical for tracking purposes.
- **Technical Skills:** Python, Image Recognition, AI.
- **Soft Skills:** Teamwork

## Skills

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**Programming** Python, C/C++, Matlab, Wolfram Mathematica, Java.

**Aerodynamics** CFD (OpenFoam), Experimental Techniques, Methodology, CAD.

**Soft Skills** Teamwork, Problem-solving, Presentation.

## Publications

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### JOURNAL ARTICLES

Scaling relations for the geometry of wire-to-airfoil atmospheric ionic thrusters

Omar Kahol, Marco Belan, Mattia Pacchiani, Domenico Montenero

*Journal of Electrostatics* 123 (2023) p. 103815. 2023

### CONFERENCE PROCEEDINGS

Design and test of autonomous scientific payloads for sounding balloons

C. Bettanini, P. Fiorentin, A. Dumitriu, E. Conte E. F. Accatino, E. Cagnato, O. Kahol, M. Ghedin, D. Celadin, N. Magro, M. Bedendo, A. Aboudan, G. Colombatti

2020 IEEE 7th International Workshop on Metrology for AeroSpace (MetroAeroSpace), 2020

## Languages

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**English** Professional proficiency

**Italian** Native proficiency

**References available upon request.**