Antonio Pucciarelli

Aerospace engineer

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SUMMARY

Five years ago, I moved from Salerno to Milano with the intent of building my career in the aerospace field. I started the MSc pointing to have a good comprehension of internal and external flows, so I decided to create a personalized learning track based on CFD, turbomachinery design and flows modeling. Over the next few years, I intend to develop as aerospace engineer in the field of turbulence modeling and combustion processes analysis, modeling and optimization. I am also interested in external aerodynamics, its modeling and the study of aeroelastic effects.

PROJECTS

Injector study and liquid jet breakup process in liquid rocket engines

May 2021 - Jun 2021

Politecnico di Milano, Milano - ITA
Study of injectors' properties and possible combustion chamber interactions. Analysis of conical jets, sprays and atomization process [link].
NASA CEA · Python · LaTeX

Weissinger model • Study and modeling

Dec 2020 - Jan 2021

Politecnico di Milano, Milano - ITA
Study of steady incompressible flow around aircraft wings using Weissinger model. Worked on code scripting and its validation [link].
MATLAB · git · LaTeX

Hess-Smith model • Study and modeling

Jul 2020 - Dec 2020

Politecnico di Milano, Milano - ITA
Study of flow around airfoils at steady and incompressible regime using Hess-Smith model. Coding fast and efficient script for modeling the problem [link].
Fortran · BLAS · LAPACK · CMake · gnuplot · git · LaTeX

Pratt & Whitney RL10A-3 • Cooling jacket analysis and modeling

May 2020 - Jun 2020

Politecnico di Milano, Milano - ITA
Technical research on P&W RL10A-3 engine. Study of the heat exchange process phenomena and problem modeling. Analysis and comparison of results with collected data [link].
MATLAB · NASA CEA · Fortran · git · LaTeX

PERSONAL PROJECTS

- **Wrapping techniques** between NASA CEA and Python [link].
- **Airfoil generator** program, easy and accessible way to make airfoils [link].
- **OpenFOAM airfoil's** blockMesh generator [link].

SKILLS

Languages OpenFOAM, Fortran, Python, C++, C, CMake, MATLAB, Bash, LaTeX, gnuplot
Tools git, NumPy, SymPy, Pandas, FEniCS, vim, BLAS/LAPACK
Softwares NASTRAN, NASA CEA, xFoil, Femap, SolidWorks, SolidEdge, Inventor, xflr5, ParaView

EDUCATION

Aeronautical engineering

Track Combustion/rocket & aerodynamics
Duration Mar 2021 - up to now

Master degree, Politecnico di Milano - Milano, ITA
Thesis CFD based, subject to be defined

Aerospace engineering

Final grade 101 / 110
Duration Sep 2017 - Sep 2020

Bachelor degree, Politecnico di Milano - Milano, ITA
Thesis Prova finale, consisting of 3 projects:

- Aerospace propulsion project 30L / 30
- Orbital dynamics project 30 / 30
- Technology and aerospace materials project 24 / 30

PERSONAL GOALS

- **Pollution** reduction.
- **Electric** transition.
- **Hydrogen** transition.
- **Green fuels** transition.
- Manufacturing **sustainability**.

COURSES MARKS

Master degree • Aeronautical engineering	**120 CFU**	**26.78 / 30**
○ **Combustion in thermochemical propulsion**	8 CFU	28 / 30
○ **High-tech startups: creating and scaling up I**	6 CFU	26 / 30
○ **Numerical modeling of differential problems**	6 CFU	30L / 30
○ **Turbulence: physics and modeling**	8 CFU	26 / 30
○ **Structural dynamics and aeroelasticity**	10 CFU	25 / 30
Bachelor degree • Aerospace engineering	**180 CFU**	**27.54 / 30**
○ **Analisi e geometria 1**	10 CFU	27 / 30
○ **Analisi e geometria 2**	10 CFU	29 / 30
○ **Calcolo numerico ed elementi di analisi**	10 CFU	27 / 30
○ **Dinamica di sistemi aerospaziali**	8 CFU	27 / 30
○ **Elettrotecnica e elettronica applicata**	10 CFU	27 / 30
○ **Fisica tecnica**	10 CFU	27 / 30
○ **Fluidodinamica**	10 CFU	21 / 30
○ **Fondamenti di automatica**	8 CFU	28 / 30
○ **Fondamenti di chimica**	7 CFU	24 / 30
○ **Fondamenti di fisica sperimentale**	12 CFU	27 / 30
○ **Fondamenti di meccanica del volo atmosferico**	5 CFU	28 / 30
○ **Fondamenti di meccanica strutturale**	10 CFU	26 / 30
○ **Fondamenti di sperimentazione aerospaziale**	6 CFU	20 / 30
○ **Impianti e sistemi aerospaziali**	8 CFU	25 / 30
○ **Informatica**	6 CFU	25 / 30
○ **Introduzione all'analisi di missioni aerospaziali**	2 CFU	30 / 30
○ **Istituzioni di ingegneria aerospaziale**	8 CFU	26 / 30
○ **Meccanica aerospaziale**	10 CFU	27 / 30
○ **Metodi di rappresentazione tecnica**	7 CFU	29 / 30
○ **Modellazione di strutture aerospaziali**	6 CFU	22 / 30
○ **Propulsione aerospaziale**	7 CFU	23 / 30
○ **Tecnologie e materiali aerospaziali**	7 CFU	24 / 30
○ Prova finale di **analisi di missioni aerospaziali**	1 CFU	30 / 30
○ Prova finale di **propulsione aerospaziale**	1 CFU	30L / 30
○ Prova finale di **tecnologie e material aerospaziali**	1 CFU	24 / 30

LANGUAGES

Italian Native speaker.

English Proficient user. Able to satisfy most work requirements with language that is often acceptable and effective.

○ **TOEIC**	860 / 990	**B2** level
· Listening section	445 / 495	
· Reading section	415 / 495	
○ **PET**		**B1** level