



ALESSIO PICCOLO

Aerospace Engineer

PROFILE

MSc Aeronautical and Astronautical engineer. I am currently pursuing a PhD at the Faculty of Aerospace Engineering at the University of Rome - La Sapienza. The focus is on CFD analysis of supersonic flows exploiting parallel computing and GPUs. Strong knowledge also of structural analysis and optimization. Fluent in writing and speaking English. Open to work abroad.

DIGITAL SKILLS

Software

- MSC Patran
- Microsoft Office
- SolidWorks
- OpenFOAM
- STAR-CCM+
- Xfoils
- Machine learning
- MSC Nastran
- CATIA
- Matlab
- Simulink
- LaTeX
- Abaqus
- HyperWorks

Programming Languages

- C
- Python
- Fortran
- C++

LANGUAGE SKILLS

Italian: mother tongue
English: IELTS Certificate B2

PERSONAL INFORMATION

Date of birth: 04/22/1996, Caserta, Italy
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WORK EXPERIENCE

Structural Aerospace Engineer

(Sep 2020 - Oct 2021) Composite Research, Turin (IT)

- **Research and development** activities on **innovative materials**
- **Non-linear analysis** on the innovative materials developed by Composite Research
- Developed a new type of wingsuit by the use of the **composite material** MadFlex developed by Composite Research focusing on **FEM non-linear analysis** and **CFD** analysis
- Production of different types of **prototypes** made of composite material
- Experience in the **manufacturing** of composite material and **materials testing**

Mechanical Engineer

(Oct 2019 - Sep 2020) Team PolitOcean, Turin (IT)

- Development of a new **ROV** frame on the basis of **topological optimization** and structural analysis
- **CAD** modeling and design of new ROV configurations
- **CFD** analysis of ROV propellers
- Pool tests

EDUCATION

La Sapienza - University of Rome (Italy)

(Jan 2022 - present) PhD in Aerospace Engineering

The project aims to develop innovative techniques for the **numerical simulation** of **high-speed aerodynamic** problems in the aerospace field, with special reference to both fixed and rotary wing vehicles. The emergence of **shock waves** makes the prediction of motion fields problematic through standard analysis techniques, based on stationary solvers and **RANS** modeling. **Unsteady solvers** based on advanced turbulence modeling, like **DES** family, are indispensable, combined with the use of high fidelity numerical techniques.

Project objectives are as follows:

- implementation of advanced discretization techniques in pre-existing software
- implementation of advanced turbulence models (DES)
- coupling of the fluid dynamics solver with the structural solver
- software implementation on computing platforms based on the use of graphics accelerators (**GPU**)

Polytechnic University of Turin (Italy)

(Sep 2018 - Apr 2021) MSc in Aeronautical and Astronautical Engineering

Grade: 109/110

Aerospace structure track

Thesis: "Preliminary design of deployable Martian habitat made by innovative material"

Polytechnic supervisor: Giacomo Frulla

Polytechnic co-supervisor: Enrico Cestino

Composite Research external supervisors: Nicola Giulietti, Eugenio Fossat

La Sapienza - University of Rome (Italy)

(Oct 2015 - Nov 2018) BSc in Aerospace Engineering

Grade: 103/110

Thesis: "Mirror trajectories in space mission analysis"

Sapienza supervisor: Mauro Pontani

Aeronautical Technical Institute - Villaggio dei ragazzi (Italy)

(Sep 2010- Sep 2015)

Grade: 100/100