



# Francesca Rossetti

## WORK EXPERIENCE

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[ 01/03/2022 - Current ]

### **Aerodynamics Course Teaching Assistant**

*Department of Mechanical and Aerospace Engineering, Sapienza University of Rome*

University teaching assistant of the course "Aerodynamics" of the Bachelor's Degree in Aerospace Engineering.

[ 10/2021 - 02/2023 ]

### **CFD Applied Research - Consulting Activity**

*Department of Mechanical and Aerospace Engineering, Sapienza University of Rome*

Consulting support activities for Avio S.p.A.:

- From 10/2021 to 07/2022: CFD Sloshing Analyses of VEGA-E Cryogenic Propellant Tanks
- From 12/2022 to 02/2023: CFD Analyses of M60 Engine Cooling System

These activities have been carried out with Pointwise meshing tool and Ansys Fluent solver.

## EDUCATION AND TRAINING

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[ 01/11/2020 - Current ]

### **Ph.D. in Aeronautics and Space Engineering (XXXVI cycle)**

*Department of Mechanical and Aerospace Engineering, Sapienza University of Rome*

Study of the behavior of cryogenic propellants in space tanks through computational fluid dynamics (CFD) simulations.

[ 09/2016 - 10/2020 ]

### **Master's degree in Space and Astronautical Engineering**

*Sapienza University of Rome*

**Final grade:** 110/110

**Thesis:** "Parametric study of the heat transfer enhancement in LRE combustion chambers by longitudinal wall ribs".

[ 09/2013 - 12/2016 ]

### **Bachelor's degree in Aerospace Engineering**

*Sapienza University of Rome*

**Final grade:** 110/110

**Thesis:** "Manovre di rendez-vous su una sonda interplanetaria".

[ 09/2008 - 06/2013 ]

### **High School Diploma**

*Liceo Scientifico Guglielmo Marconi*

**Address:** 00034, Colleferro (RM)

**Final grade:** 100/100

## LANGUAGE SKILLS

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**Mother tongue(s):** Italian

**Other language(s):**

### English

**LISTENING** B2 **READING** B2 **WRITING** B2

**SPOKEN PRODUCTION** B2 **SPOKEN INTERACTION** B2

### French

**LISTENING** B2 **READING** B2 **WRITING** B2

**SPOKEN PRODUCTION** B2 **SPOKEN INTERACTION** B2

*Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user*

## DIGITAL SKILLS

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Matlab | Python | Microsoft Office | LaTeX | Windows | Chemical Equilibrium Applications (CEA) NASA Software | European Computer Driving Licence - ECDL

### CFD Simulations

Ansys Fluent

### Meshing Tools

POINTWISE | ANSA

### Postprocessing

Tecplot 360

## **PUBLICATIONS**

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[ 2022 ]

**Stella, F., Cimini, M., Dünder, B., Rossetti, F., Barbagallo, D., Neri, A., & Bernardini, M. "Numerical Analysis of the Free-Fall Behavior of a Space Launcher Fragment". Journal of Spacecraft and Rockets (2022), p. 1-13.**

[ 2023 ]

**Rossetti, F., Pizzarelli, M., Pellegrini, R., Cavallini, E., & Bernardini, M. "Setup of a numerical methodology for the study of active-pressurization of cryogenic tanks". Aerospace Europe Conference 2023 – 10<sup>TH</sup> EUCASS – 9<sup>TH</sup> CEAS (2023).**

**Cimini, M., Rossetti, F., Della Posta, G., Stella, F., & Bernardini, M. "CFD Analysis of the Lateral Sloshing Phenomenon inside an Aerospace LH2 Cryogenic Tank". Aerospace Europe Conference 2023 – 10<sup>TH</sup> EUCASS – 9<sup>TH</sup> CEAS (2023).**

**Rossetti, F., Pizzarelli, M., Pellegrini, R., Cavallini, E., & Bernardini, M. "Numerical Tank Self-Pressurization Analyses in Reduced Gravity Conditions". XXVII AIDAA Congress (2023).**

## **HONOURS AND AWARDS**

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[ 15/10/2013 ]

**Certificate of honor: "Alfiere del Lavoro". Awarding institution: President of the Italian Republic Giorgio Napolitano.**

## **CERTIFICATIONS**

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[ 17/05/2022 - 21/06/2022 ] **Basic introduction to ANSA and META for CFD Certificate**

[ 02/06/2021 ] **Tecplot 360 Basics Certification**

[ 23/10/2020 ]

**Pegasus Certificate - The European Network of excellence in Aerospace Engineering Education**

[ 28/05/2013 ] **First Certificate in English- Council of Europe Level B2**

[ 24/08/2012 ] **Diplôme d'études en langue française (DELFF) B2**

[ 31/01/2011 ] **Certificato European Computer Driving Licence (ECDL)**

Roma, 23/10/2023