

Edoardo Del Vecchio

Engineer, PhD Student

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Experiences

2021 – **PhD Student**, *Aeronautical and Space Engineering*

Sapienza University of Rome, Rome - Italy

(Supervisor: prof. Antonio Genova)

2022 – **Research Fellow**

Department of Mechanical and Aerospace Engineering, Sapienza University of Rome, Rome - Italy

○ Research Activity: *Radio science data analysis and orbit determination of the Bepi-Colombo spacecraft during Venus and Mercury flybys*

(Scientific Supervisors: prof. Antonio Genova, prof. Luciano Iess)

2021 – 2022 **Post Graduate Research Fellow**

Department of Mechanical and Aerospace Engineering, Sapienza University of Rome, Rome - Italy

○ Research Activity: *Analysis and processing of imaging and altimetric data for space geodesy and orbit determination of NASA's mission Europa Clipper*

(Scientific Supervisor: prof. Antonio Genova)

Education

2022 **Professional Qualification as Industrial Engineer**

2017 – 2020 **Master of Science**, *Space and Astronautical Engineering*, 110/110 cum laude

Sapienza University of Rome, Rome - Italy

○ Curriculum: Missions

○ Thesis: *Path Planning and Stereo Vision-based Map Update for NASA's Mars 2020 Perseverance Rover*

(Supervisor: prof. Antonio Genova)

2014 – 2017 **Bachelor of Science**, *Aerospace Engineering*, 109/110

Sapienza University of Rome, Rome - Italy

○ Thesis: *Effects of Saturn System's Plasma Environment on Cassini's Radio Signals*
(Supervisor: prof. Luciano Iess)

○ Activities:

- 6th AVIO Mini-Rocket Contest (2017)

Certifications

2021 PEGASUS Certificate, European Network of Excellence in Aerospace Engineering Education

Publications

- 2022 Genova, A., Goossens, S., **Del Vecchio, E.**, Petricca, F., Beuthe, M., Wieczorek, M., Chiarolanza, G., di Achille, G., Mitri, G., Di Stefano, I. and Charlier, B., 2022. *Regional variations of mercury's crustal density and porosity from MESSENGER gravity data*. Icarus, p.115332.

Conference Papers

- 2022 **Del Vecchio E.**, Petricca F., Genova A. *Processing of Altimetric Data for Precise Orbit Determination* in the International Astronautical Congress (IAC) 2022, Paris, France, September 18 - 22, 2022.
- 2022 **Del Vecchio E.**, Petricca F., Genova A., Mazarico E., *Geophysical Investigations of Celestial Bodies through the Combination of Radio Science and Altimetric Crossover Data* in the European Geosciences Union (EGU) General Assembly 2022, Wien, Austria, May 23 - 27, 2022.
- 2021 **Del Vecchio E.**, Petricca F., Genova A., *Path Planning and Stereo Vision-based Map Update for NASA's Mars 2020 Perseverance Rover* in the Italian Association of Aeronautics and Astronautics (AIDAA) XXVI International Congress, Pisa, Italy, August 31 - September 3, 2021.
- 2019 Petricca F., **Del Vecchio E.**, Fiore M., Lazzaro A., Valeriani A., Pollice L., Gaudenzi P., *Experiencing a Concurrent Engineering environment for the preliminary design of a mission to Titan* in the Italian Association of Aeronautics and Astronautics (AIDAA) XXV International Congress, Rome, Italy, September 9 - 12, 2019.

Projects

2018 – 2019 **MEET**, *Mini-landers for Environment Experiments on Titan*

Teamwork design of a space system for a mission aimed at the study of Titan's geology, atmosphere and hydrocarbon lakes by orbital and in situ investigation, in order to answer the questions left by Cassini-Huygens. Intense synergistic utilization of different Concurrent Engineering tools, integrating a modern CE software. System criticalities identification, feasibility analysis and tradespace exploration.

Skills

Programming Languages Python, MATLAB, C++

Softwares Mission Analysis Operations and Navigation Toolkit Environment (MONTE), GEO-DYN, Cosmographia, Gazebo, PyTorch, TensorFlow, IDM-CIC, IDMView, SketchUp, Solid Edge, Previsat, SaVoir, NASA's Eyes, SAOImage

Languages

Italian Native speaker

English Very good speaking and writing