

Andrea Carlo MORELLI

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Citizenship: Italy



Research interests

Interplanetary CubeSats, Autonomous spacecraft GNC, Trajectory optimization, Astrodynamics

Education

Politecnico di Milano Milan, Italy
Ph.D. in Space Engineering Feb 2021 – Present
Supervisor: Professor Francesco Topputo
ERC-funded project EXTREMA

Politecnico di Milano Milan, Italy
M.Sc. in Space Engineering, Grade: *110/110 cum laude* Sep 2018 – Dec 2020
Thesis: *Robust Design of Low-Thrust Minimum-Fuel Space Trajectories by Combination of Sequential Convex Programming and Homotopic Approach*
Supervisor: Professor Francesco Topputo

Politecnico di Torino Turin, Italy
M.Sc. in Aerospace Engineering, Grade: *110/110 cum laude* Sep 2018 – Dec 2020
Thesis as above, double degree program
Supervisor: Professor Sabrina Corpino

Alta Scuola Politecnica Milan & Turin, Italy
Diploma in Innovation subjects Dec 2018 – Oct 2020
Thesis: *Design of a Machine Learning-Based Technology to Enable Optical Communication in Space*
Supervisor: Professor Sabrina Corpino

ISAE - Supaero Toulouse, France
Erasmus+ student, GPA: *3.96/4.00* Aug 2019 – Mar 2020

Politecnico di Milano Milan, Italy
B.Sc. in Aerospace Engineering, Grade: *110/110 cum laude* Oct 2015 – Sep 2018

- Trainings** **School of Entrepreneurship & Innovation** Turin, Italy
Entrepreneurship/Entrepreneurial Studies Jan 2019 – Jun 2020
Project: *Movers, a Mobility As a Service Platform*
- Univesidad Politécnica de Madrid** Madrid, Spain
ATHENS Program Mar 2018
Course: *Geometric and Numerical Methods in Control Theory*
- Research experience** **Engineering Extremely Rare Events in Astrodynamics for Deep-Space Missions in Autonomy (EXTREMA)**
PI: Professor Francesco Topputo Feb 2021 – Present
The EXTREMA project, awarded with a Consolidator Grant worth 2M€ by the European Research Council (ERC), aims at enabling autonomous deep-space CubeSats Guidance, Navigation, and Control.
- Publications** **Autonomous Artificial Intelligence-Aided Ground Pointing System for Optical Communication in Low Earth Orbit Nano-Satellites**
R. Masiero, A. C. Morelli, A. Rosso, T. Tassi, F. Ferrari, S. Palladino, and A. Forestieri
71st International Astronautical Congress, Dubai (UAE), Oct 2020
- Skills** **Digital skills**
Proficient in: Matlab, Latex
Familiar with: Simulink, Solidworks, Solidedge, Inventor
Learning: Python, C++
- Languages**
Mother tongue: Italian
Proficient in: English
Intermediate in: French
- Certifications** **TOEFL iBT**
Grade: 110/120, Level C1
Date: Nov 2020
- TFI - Test de Français International**
Grade: 670/990, Level B2
Date: Apr 2019