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Gianfranco Di Domenico

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Space Engineer

BIO

Born in: Sant'Antimo, NA, Italy
On: Feb 22nd, 1997
Living in: Via Pietro Marussig, 4
Milano, MI, Italy, 20154

I am a 26 years old Space Engineer looking for opportunities to apply my skills and knowledge in software and hardware development for space assets and support facilities. I am driven by curiosity, innovation, and the quest for a better world. My strengths are creativity, intuition, and problem-solving. I value teamwork and always try to deliver the best results. I always put much care into my job, analyzing all the possible paths and going into the very details. Thinking out of the box always represents an option to me.

SOFT SKILLS

Communication · Teamwork · Leadership · Flexibility
Problem-Solving · Creativity · Work ethic · Attention to details

MISC

Basketball die-hard
Played competitively for more than 10 years.

Avid traveler
Visited more than 20 countries in Europe and worldwide

Piano enthusiast
Started academically, continued self-taugth

Driving License
Obtained in May 2015 (7 years)

PASSIONS

Space · Basketball · Piano · Tech · Nature · Travel · Art · Food · Design · DIY

EDUCATION

PhD Student in Aerospace Engineering — **feb 2021 - current**
Politecnico di Milano - DART Lab
Development of hardware-in-the-loop simulations within the ERC-funded EXTREMA project to aid research on autonomous GNC capabilities for deep-space CubeSats.

MSc in Space Engineering 110/110 CUM LAUDE — **sep 2018 - dec 2020**
Politecnico di Milano
M.Sc. thesis: *Development of a hardware-in-the-loop simulation framework for interplanetary transfers on smaller timescales.* Supervisor: prof. F. Topputo.

MSc in Aerospace Engineering 110/110 CUM LAUDE — **dec 2021**
Politecnico di Torino
Double degree obtained in the context of the Alta Scuola Politecnica program.

Alta Scuola Politecnica WITH MERIT — **dec 2018 - oct 2020**
Politecnico di Milano | Politecnico di Torino
Excellence program, sponsored by the two universities, aimed at developing skills, knowledge, and teamwork throwgh multidisciplinary courses and projects.

BSc in Aerospace Engineering 110/110 CUM LAUDE + SPECIAL MENTION — **sep 2015 - sep 2018**
University of Naples 'Federico II'
Final thesis title: *Numerical Simulation and Ballistic Analysis of a Compact Paraffin-Based Hybrid Rocket*. Supervisor: prof. R. Savino.

LANGUAGES

English C1 CEFR
TOEFL iBT: 106/120

Español A2 CEFR
DELE Nivel A2

SKILLS

Programming
I am proficient in MATLAB, Python, C++, C. I have good web programming skills: HTML, CSS, JavaScript, PHP. Minor experience with frameworks such as NodeJS and React.

Embedded systems
I am confident in programming embedded systems (ESP32, STM32, Arduino) and interfacing with ICs. I have basic PCB design skills and have successfully designed and implemented custom circuit boards for various applications.

Simulation software
I am confident in using Simulink and its toolboxes (e.g., Simscape) to develop models and perform simulations of complex systems. I have intermediate skills in using the ANSYS suite for multi-physics finite element analysis (FEA).

Other
I have experience in using software for different applications, such as 3D modeling (Solidworks, CATIA), graphics (Adobe Photoshop, Illustrator), video editing (Final Cut Pro, ffmpeg), productivity suites (MS Office, iWork, Google Docs).

RESEARCH ACTIVITY

European Research Council
Established by the European Commission

- EXTREMA
- GUIDO

The ERC-funded EXTREMA project: achieving self-driving interplanetary CubeSats
G. Di Domenico et al. *Modeling and Optimization in Space Engineering*, Springer. In Press (March 2023). DOI: 10.1007/978-3-031-24812-2_6

STASIS: an Attitude Testbed for Hardware-in-the-Loop Simulations of Autonomous Guidance, Navigation, and Control Systems
G. Di Domenico, F. Topputo. *73rd International Astronautical Congress (IAC 2022)*, September 2022, Paris (France).

Current Status of the EXTREMA Simulation Hub: First Steps Towards Deep-Space Missions with Autonomous Cubesats
A. Morselli, G. Di Domenico, et al. *5th COSPAR Symposium*, 2023 [Abstract accepted].

Toward Self-Driving Interplanetary CubeSats: the ERC-Funded Project EXTREMA
G. Di Domenico et al. *72nd International Astronautical Congress (IAC 2021)*, October 2021, Dubai (UAE).

The EXTREMA Orbital Simulation Hub: A facility for GNC testing of autonomous interplanetary CubeSat
A. Morselli, G. Di Domenico, et al. *4S Symposium*, May 2022, Vilamoura (Portugal).