

PERSONAL INFORMATION

Fabrizio Stesina



📍 DIMEAS – Dip. Di Ingegneria Meccanica e AeroSpaziale
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- ORCID: 0000-0002-1984-8533
- Google scholar profile: [F. Stesina - Google Scholar](#)
- Scopus: 9943274600

Male | Date of birth 21/05/1980 | Nationality Italian

Enterprise	University	EPR
<input type="checkbox"/> Management Level	<input type="checkbox"/> Full professor	<input type="checkbox"/> Research Director and 1st level Technologist / First Researcher and 2nd level Technologist / Principal Investigator
<input type="checkbox"/> Mid-Management Level	<input type="checkbox"/> Associate Professor	<input type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input checked="" type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

SSD: ING/IND05

WORK EXPERIENCE

10/21 – today

Assistant Professor (Ricercatore a tempo determinato di tipo A)

Politecnico di Torino, Department of Mechanical and Aerospace Engineering

- Responsible for ESA-uProp programs sponsored by the European Space Agency (ESA) for the development of test platforms for the verification of miniaturized electrical propulsion systems
- Responsible for GNC in SROC (Space Rider Observer Cube) program, sponsored by ESA for the development of a small satellite able to perform proximity operations, rendezvous and docking maneuvers with Space Rider
- Responsible of SINAV (Soluzioni Innovative per la Navigazione Autonoma Veloce) project, funded by Agenzia Spaziale Italiana (ASI) for the development of new technologies to support the navigation of martian rovers.
- Director of the DIANA students Team of Politecnico di Torino
- Responsible of the Spacecraft Development Unit of the CubeSat students Team at Politecnico di Torino
- System Engineers in international projects (such as MESPAC that investigates the use of satellites for marine applications and WIVERN2 focused on remote sensing applications), funded by ESA
- Author of 10+ publications in international journal and international congresses proceedings"
- Member of national and international associations: IEEE (International Electrical and Electronics Engineers, since 2014), and AIDAA (Associazione Italiana di Aeronautica e Astronautica, since 2005))

Sector: Education and Research in Aerospace Engineering

01/20 – 09/21

Researcher (CoCoCO)

Politecnico di Torino, Department of Mechanical and Aerospace Engineering

- Responsible of the activity for ESA-uProp program sponsored by the European Space Agency for the development of test platforms for the verification of miniaturized electrical propulsion systems
- GNC engineer in international programs for interplanetary small-sats missions
- Author of 10+ publications in international journal and international congresses proceedings

Sector: Education and Research in Aerospace Engineering

- 01/14 – 12/19 **Post-Doc Research Fellow**
 Politecnico di Torino, Department of Mechanical and Aerospace Engineering
- AIV manager and Director of Operations for the CubeSats mission e-st@r-2 of Politecnico di Torino
 - AIV manager of the ESA-Prop project sponsored by the European Space Agency for the development of test platforms for the verification of miniaturized electrical propulsion systems
 - Senior member of the CubeSat Team of Politecnico di Torino
 - Avionics Engineer of ARTE, payload operated by astronauts on board the International Space Station in 2016 and 2017
 - GNC Engineer in national programs for design and development of control systems of spacecraft involved in space mission of rendezvous and docking with non-cooperative targets
 - Author of 20+ publications in international journal and international congresses proceedings
- Sector: Education and Research in Aerospace Engineering
- 01/11 – 12/13 **PhD Candidate**
 Politecnico di Torino, Department of Mechanical and Aerospace Engineering
- Research on Aerospace Engineering, working on the definition of methodologies for the design and verification of Guidance Navigation and Control System for space applications
 - Student Leader of the CubeSat Team of Politecnico di Torino
 - Author of 10+ publications in international journal and international congresses proceedings
- Sector: Education and Research in Aerospace Engineering
- 01/05 – 12/10 **Assistant Professor (Ricercatore a tempo determinato di tipo A)**
 Politecnico di Torino, Department of Aerospace Engineering
- System and Test Engineer in Research projects on autonomous and unmanned ground and aerial vehicles
 - Member of the research team “Integrated Systems for the Security” at SiTI (Istituto Superiore sui Sistemi Territoriali per l’Innovazione)
 - Member of the research team “ASSET (AeroSpace System Engineering Team) of the Department of Aerospace Engineering at Politecnico di Torino
 - Co-founder of the company SPAIC s.r.l.
- Sector: Education and Research in Aerospace Engineering

EDUCATION AND TRAINING

- 04/14 **PhD graduation**
 PhD Graduation in Aerospace Engineering, PhD Thesis title: “Design and Verification of Guidance Navigation and Control systems for space applications” (Advisor: Prof. Sabrina Corpino). Politecnico di Torino (Italy)
- Main skills:
- Knowledge of methods and tools for the design and verification of advanced and complex systems
 - Knowledge of the procedures and standards applicable along the life cycle of a space system (i.e. ECSS standards)
 - Capability to define and execute Assembly, Integration and Verification (AIV) Plans.
 - Specific knowledge for design and verification tools for small satellites missions
 - Knowledge of most space systems: general characteristics and disciplines involved in their design
 - Knowledge of the most important techniques to study and design safety and reliability
 - Knowledge on Unmanned Ground-Sea-Aerial Vehicles, and their on-board systems (Guidance, Navigation and Control System, Propulsion System, Communications System)
- 02/05 **Engineering Career qualification, Politecnico di Torino (Italy)**

09/04 MS Degree

MS degree in Information Technology Engineering. MS Thesis title: "Controllo robusto: progettazione in forma digitale ed esempi" - Robust control: digital design and applications (Advisor: Prof. D. Carlucci). Politecnico di Torino (Italy)

Main skills:

- Knowledge and ability to design automated control systems
- Knowledge and ability to design basic electronic circuits and hardware interfaces
- Ability to program in C/C++ language, for micro-controllers with real time operative systems (RTOS)

WORK ACTIVITIES

Main projects

Organization of and participation in 21 funded research programs / projects with international and national entities such as ESA, ASI, JPL, Thales Alenia Space, ALTEC, Argotec srl, Tyvak Int.srl, Aviospace, MIT (Boston, US), TU Delft (NL), Politecnico di Milano, Università di Bologna, Università di Padova, Università la Sapienza DI Roma, Università Federico II di Napoli.

Most relevant projects:

- Space Rider Observer Cube, SROC (ESA, Tyvak Int, UniPD)
- ESA-uProp (ESA)
- Soluzioni Innovative per la Navigazione Autonoma Veloce (SINAV) (ASI, Thales Alenia Space, Altec)
- Educational Cubesats - E-st@r projects (ESA)
- ARTE, payload on ISS (ASI, Argotec)
- CApture and DE-orbiting Technologies, CADET (Aviospace)
- PRIN 2003 on Autonomous Vehicles Control (Università la Sapienza, UniNa Federico II)

Tutoring activities

- Lecturer in Courses of Aerospace System Engineering in the Bachelor and Master Degrees in Aerospace Engineering). Total hours (2008 – now): 400+
- Tutor of 10+ Master Theses and 2 Bachelor Theses, co-tutor of 20+ Master Degree Theses

Awards

ASN "Abilitazione Scientifica Nazionale" for Associate Professor (2020-2029)

Editorial activity

- Member of the Editorial Board of "Avionics and Control System", Cambridge School Publishing
- Guest editor for the MDPI journal "Aerospace", co-responsible for the special issue "Interplanetary small satellites"
- Guest editor for the MDPI journal "Aerospace", co-responsible for the special issue "On-Board Systems Design for Aerospace Vehicles"

Invited presentations

Invited speaker at:

- EPIC Workshop 2019_roundtable on CubeSat & EP (2019)
- 3rd, 4th and 5th Int. WS on Verification and Testing of Space Systems (2013,2016,2019)
- AICQ - La Qualità nell'Aerospace (01/19)

Patents

Patented Radio amateur

ADDITIONAL INFORMATION

Publications

Total number of publications in peer-review journals: 20

Total number of citations: 265

H index (Scopus): 10

Total number of publications in journals belonging to the first Scopus quartile (or in A class): 6

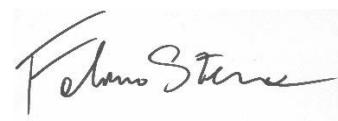
Relevant Publications:

- Stesina F., Corpino S., Novara C., Russo S., **Docking Manoeuvre Control for CubeSat**, *Journal of the Astronautical Sciences*, Volume 69, Issue 2, pp 312 – 334, April 2022, DOI 10.1007/s40295-022-00307-1
- Corpino S.; Stesina F., **Inspection of the cis-lunar station using multi-purpose autonomous Cubesats**, *ACTA ASTRONAUTICA*, 2020, pp. 591-605, Vol.175, ISSN:0094-5765, DOI:10.1016/j.actaastro.2020.05.053
- Stesina, F., **Validation of a test platform to qualify miniaturized electric propulsion systems**, *AEROSPACE*, 2019, Vol.6, ISSN:2226-4310, DOI:10.3390/aerospace6090099,
- Corpino S.; Mauro S.; Pastorelli S. Stesina F.; Biondi G.; Franchi L.; Mohtar T., **Control of a**

Noncooperative Approach Maneuver Based on Debris Dynamics Feedback, *JOURNAL OF GUIDANCE CONTROL AND DYNAMICS*, 2018, pp. 431-448, Vol.41, ISSN:0731-5090, DOI:10.2514/1.G002685,

- Cresto Aleina S.; Viola N.; Stesina F.; Viscio M.A.; Ferraris S., **Reusable space tug concept and mission**, *ACTA ASTRONAUTICA*, 2016, pagine 21-32, Vol.128, ISSN:0094-5765, DOI:10.1016/j.actaastro.2016.07.003,
- Viscio M.A.; Viola N.; Corpino S.; Stesina F.; Fineschi S.; Fumentì F.; Circi C., **Interplanetary CubeSats system for space weather evaluations and technology demonstration**, *ACTA ASTRONAUTICA*, 2014, pagine 516-525, Vol.104, ISSN:0094-5765, DOI:10.1016/j.actaastro.2014.06.005
- Corpino S.; Stesina F., **Verification of a CubeSat via Hardware-in-the-loop Simulation**, *IEEE TRANSACTIONS ON AEROSPACE AND ELECTRONIC SYSTEMS*, 2014, Vol.50, ISSN:0018-9251, DOI:10.1109/TAES.2014.130370

Torino, 23/06/2022

A handwritten signature in black ink, reading "Fabrizio Stesina". The signature is written in a cursive style with a large initial 'F' and 'S'.