RICCARDO APA

Aerospace Engineer & Co-Founder

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30 October 1996

ABOUT ME

Driven by curiosity and a deep passion for the space sector, I strive to advance scientific innovation through both research and entrepreneurship. As co-founder of ASTRO s.r.l., my ambition is to transform advanced technological ideas into impactful, commercially viable products that shape the future of space economy.

RESEARCH AND PROJECTS

- Advanced Space Tethers for Remote Sensing Operations

  June, 2023 - August, 2025 Politecnico di Torino

  Supported by two Proof of Concept grants, the project involves testing and validating a patented technology for the control and stabilization of tethered space systems for remote sensing applications.
- Machine Learning models for space applications

  October, 2020-March, 2021 Thales Alenia Space

  The project involved creating and explaining Machine Learning and Neural Network models to extract information from images of the Earth and Sun.
- Combined Optical and Radar Measurements for IOD

  March-June, 2020 ISAE-Supaero

  This project, developed within the PIR (Projet Innovation-Recherche), involved analyzing an optical and radar system for detecting space objects to enhance space surveillance.

AWARDS

- PEGASUS AWARD: The European Network of Excellence in Aerospace Engineering Education
- 3AF AWARD: Association Aéronautique et Astronautique de France

PUBLICATIONS

- **Patent**
  Apa R., Aliberti S., Matonti C.L., Romano M., *Metodo ed Apparato per la Stabilizzazione di Formazioni di Satelliti* (2023).
- **AAS/AIAA Astrodynamics Specialist Conference**
  Apa R., Kaminer I., Hudson J., Romano M., *Orbital Logistics: Optimal Planning to Service Multiple Satellites in LEO through Mixed Integer Linear Programming and Q-law* (2023).
- **43rd IEEE Aerospace Conference**
  Apa R., Quadrelli M.B., Beauchamp R.M., *Dynamics and Control of Helical Arrays in Low Earth Orbit* (2022).
- **8th ESA Space Debris Conference**
  Apa R., Bonaccorsi S., Pirovano L., Armellin R., *Combined Optical and Radar Measurements for Orbit Determination in LEO* (2021).

JOB EXPERIENCE

- Co-Founder & COO

  ASTRO s.r.l.

  July, 2025-present
- Visiting Ph.D.

  Technical University of Munich (TUM)

  May-July, 2025
- Visiting Ph.D.

  Naval Postgraduate School

  July-September, 2023
- Teaching Assistant

  Politecnico di Torino

  March-July, 2023
- Internship - Astrodynamics Specialist Engineer

  NASA - JPL

  April, 2021 - September, 2022

EDUCATION

- Ph.D. in Aerospace Engineering

  Politecnico di Torino

  2022 - present
- Diplôme d'Ingénieur

  ISAE-SUPAERO

  2018 - 2021
- MSc in Space Engineering

  Politecnico di Torino

  2018 - 2021

  Grade: 110/110 cum laude
- Bachelor's Degree in Aerospace Engineering

  Politecnico di Torino

  2015 - 2018

  Grade: 110/110 cum laude

- **IWSCFF 2022**
  Apa R., Mao P., Quadrelli M.B., Beauchamp R.M., *Effective Sensitivity Analyses of Radar Systems in Formation Flying using Differential Algebra* (2022).
- **74th International Astronautical Congress**
  Matonti C.L., Apa R., Romano M., *New results on the mass/cost-optimization analysis of a planetary sunshade system* (2023).
- **75th International Astronautical Congress**
  Apa R., Hudson J., Romano M., *Low-Thrust Propulsion and Drift Orbit Optimization for Multi-Client Servicing Missions in Low Earth Orbit* (2024).
  Vergari P., De Matteis M., Quadrelli M.B., Blomquist R., Rossi F., Apa R., Aliberti S., Romano M., *Modeling and Analysis of Tethered System Dynamics for Venus Aerobots and Towed Probes* (2024).
- **76th International Astronautical Congress**
  Apa R., Hudson J., Romano M., *Trajectory Optimization for Low-Thrust Multi-Platform Servicing Missions in Elliptical Orbits: A Fourier-Based Approach* (2025).
- **Acta Astronautica**
  Apa R., Kaminer I., Hudson J., Romano M., *Optimal low-thrust orbital transfer for servicing multiple satellites in elliptical orbits*, *Acta Astronautica* (2024). `https://doi.org/10.1016/j.actaastro.2024.12.030`
- **Journal of the Astronautical Sciences**
  Apa R., Bhattacharjee S., Hudson J., Romano M., *Optimal Multi-Client Trajectory Planning for A Low-Thrust Servicing Satellite in the Presence of Perturbations*, *J. Astronaut. Sci.* 72, 7 (2025). `https://doi.org/10.1007/s40295-025-00487-6`

LANGUAGES

• Italian • English • French • Spanish • Russian