WORK EXPERIENCE

from March 2014 — Experiment Manager

of 3GM radio science experiment onboard the ESA/JUICE mission:

- Definition of scientific and instrument performance requirements
- Instrument development
- Technical reviews (IPRR, ICR, IPDR & ICDR) and analyses

Business or sector Project Control, Space missions

from 2014 to 2015 — Project Engineer

"HERO – High performance time & frequency link" - ESA/ESTEC ITT AO17583/13/NL/HB

- Review of scientific requirements for the STE-Quest mission
- Definition of microwave links specifications
- Numerical simulations

Business or sector R&D, Space missions

from 2010 to 2014 — System Engineer / Post Doc researcher

Sapienza, University of Rome, Radio Science Lab, 18, via Eudossiana, 00084 Rome, Italy

- flight dynamics and orbit determination for interplanetary missions
- software tools development (Python/Shell, FORTRAN)
    - mission analysis
    - tools for automated statistical data analysis
- architectural design of advanced tracking systems for spacecraft navigation (Doppler, ranging and DDOR)
- error budget analysis and modeling

Partially funded by ESA/ESOC ITT AO/1-6221/09/F/MOS - "ASTRA - Interdisciplinary study on enhancement of end-to-end accuracy for spacecraft tracking techniques"

Business or sector R&D, Spacecraft Communications, Tracking systems and data analysis

from 2009 to 2010 — Project Engineer

ESA/ESTEC ITT AO/1-5915/08/NL/AF - Radiocomm signals: "A new way of probing the surface of planets"

- architectural design of a mission analysis software simulator (Matlab)
- Ka band link and noise budget modeling
- software debugging, testing and validation

Business or sector Spacecraft communications

from 2006 to 2011 — PhD Student and Research assistant

Sapienza, University of Rome, Radio Science Lab, 18, via Eudossiana, 00084 Rome, Italy

- orbit determination of the Cassini spacecraft (in collaboration with Cassini FD team):
    - modeling and estimation of the non-gravitational accelerations
    - software development for data analysis
    - data reduction and calibration (batch, sequential and multi-arc filtering)
    - simulations of planetary geodesy experiments

Business or sector R&D, Orbit determination, Planetary Geodesy and Physics

EDUCATION AND TRAINING

2016 **International School of Space Science: “Planetary Interiors”, L’Aquila, Italy (September 12-16)**

Gran Sasso Science Institute, Viale Francesco Crispi 7, 67100 L’Aquila, Italy

- Observational Background - Methods and Measurements – Instrumentation and Missions

2007-2011 **PhD in Aerospace Engineering - "The non-gravitational accelerations of the Cassini spacecraft and the nature of the Pioneer anomaly"**

Sapienza, University of Rome, 8, via Eudossiana, 00084 Rome, Italy

- Orbit Determination – Data reduction and filtering – Fundamental physics

2010 **ISAEA (International School of Aerospace Engineering Applications) 1st edition: “Estimation Theory”, Bertinoro, Italy (July, 12-16)**

- Kalman filtering – Inertial navigation

2006 **MSc in Aerospace Engineering - Thesis: "Pioneer anomaly detectability with planetary probe measurements"**

Sapienza, University of Rome, 8, via Eudossiana, 00084 Rome, Italy

- Application of general perturbative methods (Lagrange/Gauss equations) and special techniques (Encke method) to planetary orbiters - Spacecraft trajectory propagation

PERSONAL SKILLS

Mother tongue(s): Italian

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
French	A1	A2	A2	A1	A2
Portuguese	B1	A2	B1	A2	A2

Communication skills
- Excellent on composing presentations for engineering and scientific audience
- Very confident on speaking in public
- Excellent on technical writing

Computer skills
- FORTRAN 77/90 - Matlab - C++ - Shell and Python scripting - Orbit Determination Programs (DPTraj and MONTE, of JPL property) - MS Office - LaTeX - Gnuplot - Spice/NAIF - PHP - MySQL - Unix/Linux - Windows and Mac OS platforms

Other skills
- Musician, Free climber, Martial arts and swimming teacher

Driving license
- Car: B Motorbike: A3