

<b>Romain Di Costanzo - CEO</b>	<h1>Chief Executive Officer</h1>
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37 years old – French nationality

## SKILLS

<i>Functional skills</i>	<ul style="list-style-type: none"> <li>• <b>Software developer:</b> worked on various object orientated software development projects, in fast-paced environment, with V-model or Agile development processes.</li> <li>• <b>Numerical simulation expert:</b> Leader of a development team for an orbital debris evolutionary model (MEDEE)</li> <li>• <b>Code optimisation:</b> Investigation, solution design and implementation</li> </ul>
<i>Leadership</i>	<ul style="list-style-type: none"> <li>• <b>Team leader</b> on various R&amp;D project</li> </ul>
<i>Computing skills</i>	<ul style="list-style-type: none"> <li>• Unix/Linux, Windows</li> <li>• Java, C++, Python, Matlab</li> <li>• Version manager : GIT, SVN</li> </ul>
<i>Industrial skills</i>	<ul style="list-style-type: none"> <li>• Instrumentation development, electronic, test bench design</li> <li>• Computed Numerical Control machines (milling, 3D printers)</li> <li>• Computer-Aided Design (CAD): SolidWorks, Blender</li> </ul>
<i>Languages :</i>	<ul style="list-style-type: none"> <li>• French and English both fluent</li> </ul>

## PROFESSIONAL EXPERIENCES (details in the next pages)

<b>3 years</b>	(Sept 2017-now) - <b>Development of HYCCO</b> – Albi/Toulouse - France
<b>2.5 years</b>	(May 2015-Sept2017 - <b>University of British Columbia</b> – Vancouver - Canada
<b>8 months</b>	(Sept. 2014-Apr 2015) <b>CS (Communication et Systèmes)</b> – Toulouse - France
<b>8 months</b>	(Nov. 2013 – June 2014) - <b>University of Tasmania Hobart</b> – Australia.
<b>7 years</b>	(Sept 2007 – Sept 2013) - <b>CS (Communication et Systèmes)</b> Toulouse – France.

## EDUCATIONAL BACKGROUND

<b>2005-2007</b> Univ. Paul Sabatier - Toulouse	<b>Msc Space Sciences:</b> Space flight dynamics, Guidance Navigation and Control, Instrumentation, and Earth observation, Space Imagery, Space Telecommunication, localisation, GPS, Geodesy
<b>2002 – 2005</b> Univ. of Bordeaux 1 Univ. of Bristol (UK)	<b>BSc Mathematics and Theoretical Physics</b>

## PUBLICATIONS

**2019** – R. Pawlovicz et Al. - Lagrangian observations of estuarine residence times, dispersion, and trapping in the Salish Sea – Estuarine, Coastal and Shelf Science 225 (106246)

**2017** – R. Pawlovicz, R. Di Costanzo, M. Halverson – Advection Surface Area and Sediment Load of the Fraser River Plume Under Variable Wind and River Forcing – Atmosphere-ocean

**2014** - Dolado-Perez J.C, Revelin B, Di Costanzo R. – Sensitivity analysis of the long-term evolution of the space debris population in low-earth-orbit. (IAC-14-A6.2.3)

**2014** – P. Cefola, Z. Folcik, R. Di Costanzo – Revisiting the DSST Standalone Orbit Propagator - Advances in the Astronautical Sciences

**2013** – Verification of the Orekit Java implementation of the Draper semi-analytical satellite theory 23rd AAS/AIAA Spaceflight Mechanics Meeting At: Kauai, Hawaii

**2013** - Dolado-Perez J.C., Di Costanzo R., Revelin B. - MEDEE, a new evolutionary model - Sixth European Conference on Space Debris, ESA/ESOC Darmstadt, Germany

**2013** - Cefola, Bentley, Maisonobe, Parraud, Di Costanzo, Folcik, Verification of the Orekit Java Implementation of the Draper Semi-analytical Satellite Theory - AAS 13-398

## DETAILED PROFESSIONAL EXPERIENCES

### HYCCO

Sept. 2017 – now (3 years)

CEO	Project	Developing an innovative composite bipolar plate
	Duties	Partnership, project management, plus everything else that has to be done...
	Technical Env.	Composite fabrication, CNC Milling, test bench design, Mold design

### University of British Columbia – Earth Ocean and Atmospheric Science Department

May 2015 – Sept 2017 (2.5 years)

**EOAS**

Research assistant	Project	Satellite imagery of the Fraser river plume under various wind conditions
	Duties	Design, construction and deployment of a 100+ drifting buoys with GPS sensor. Development of an automatic live tracking system. Data analysis.
	Technical Env.	Instrumentation, drifting buoys construction, deployment at sea.

### CS Communication & Systèmes – Space Flight Dynamics Department

Sept. 2014 – Apr. 2015 (8 months)

Consultant	Client	<b>CNES</b> (French Space Agency)
	Project	<b>Creation of a space objects database</b> containing every single object that ever been into space. Identification of reliable sources, database feed
	Duties	Database model definition, database creation, update procedures
	Technical Env.	Linux Ubuntu, Curl, shell scripts

### UNIVERSITY OF TASMANIA – Solid Earth Geophysics and Geodesy Department

Nov. 2013 – June 2014 (8 months)

Research assistant	Project	<b>Analysis of GPS buoy plus Inertial Navigation System (INS) data</b> collected from GPS equipped buoy deployed in Tasmania. Precise Point Positioning and differential GPS processing combined with INS data.
	Duties	State of the art, GPS and IMU data processing, buoy deployment
	Technical Env.	Windows and Linux GIPSY-OASIS, Novatel Inertial Explorer, Matlab, bash shells.

### CS Communication & Systèmes – Space Flight Dynamics Department

June 2012 – Sept. 2013 (1 year, 3 months)

Senior Consultant	Client	<b>CNES</b> (French Space Agency)
	Project	<b>MEDEE (Modelling the Evolution of Debris on Earth's Environment):</b> Presently, the low earth orbit space objects density is high enough to potentially lead to an uncontrolled collisional cascading effect if future major break-ups occur. In this context, we have developed a statistical model to simulate the space environment evolution to guarantee the sustainability of space activities.
	Duties	State of the art, implementation of available literature algorithm, numerical simulation, parallel computation and code optimisation. Results analysis, sensibility analysis.
	Technical Env.	Windows: Java, Eclipse, Junit, Scilab, Maven. Simulations run on the CNES computing Unix cluster.

Feb. 2012 – June 2012 (5 months)

Consultant	Client	<b>CNES</b> (French Space Agency)
	Project	<b>SDF: Development of a 3D space debris density model analysis tool:</b> designed to analyse and study space debris flux and spatial densities.
	Duties	State of the art, model implementation, validation
	Technical Env.	Windows, Java, Eclipse, Scilab, Maven.

Aug. 2011 – Feb. 2012 (7 months)

Consultant	Client	<b>Eumetsat / ESA</b>
	Project	<b>Implementation of a semi analytic propagator into an open source library: OREKIT</b> (ORbits Extrapolation KIT)

	Duties	State of the art, model design and integration process. Development, validation, and technical report writing.
	Technical Env.	Java, Eclipse, JUnit, Scilab, Maven

Apr. 2011 – Aug. 2011 (5 months)

Consultant	Client	<b>CNES</b>
	Project	<b>Development of an analysis tool to study collision risk at launch</b>
	Duties	Algorithms definition, validation and non-regression testing.
	Technical Env.	Java, Eclipse, JUnit, Scilab, j3d, Maven

Dec. 2010 – Apr. 2011 (5 months)

Technical leader	Client	<b>CNES</b>
	Project	<b>SimuRF: Adding new functionalities to a radio-frequency simulator</b>
	Duties	Technical leader (graphical and algorithmic). Managed a team of 3 (technical support, present and defend design solutions to the client).
	Technical Env.	Eclipse RCP, Java, Wind Word Java, EMF, Spring, JUnit, jFreeChart, Maven

March 2008 – Dec. 2010 (2 years 9 months)

Consultant	Client	<b>CNES</b>
	Project	<b>ISIS: Development of a Java space flight dynamics library:</b> Java library specifically designed for satellites simulator purpose. Agile development process.
	Duties	Developer. Integration of the library into several mission simulators.
	Technical Env.	Windows, Eclipse, Java, MagicDraw (UML), Spring, JUnit, Maven, Agile process

Sept. 2007 – March 2008 (7 months)

Consultant	Client	<b>CNES</b>
	Project	<b>Maintenance of ground segment product</b> for the Essor, Parasol, Demeter satellites
	Duties	Bug correction, non-regression testing, adding new functionalities,
	Technical Env.	Fortran 77/90, bash shells, Linux RedHat