

# Jordi Vila

ELECTRICAL ENGINEER · TELECOMMUNICATIONS AND SPACE SYSTEMS FOCUS

Maryland. United States of America

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*"Luck is when determination meets opportunity."*

## Experience

### NASA - Goddard Space Flight Center

Washington D.C. metro area, USA

SPACE SYSTEMS ENGINEER - ASTROPHYSICS DIVISION

Apr. 2014 - Present

- Working on a Stratosphere Balloon Telescope: BETTII scheduled to Launch Fall 2016.
- Attitude control systems lead engineer : Developed the Pointing & Position estimator algorithm based on the Kalman filter running on FPGA that uses gyroscopes, starcamera, accelerometers and other input sensors to command different actuators in order to point the telescope in space and precisely track stars.
- Built a software and hardware testbed for the Telemetry System infrastructure.
- Hands-on project : worked on the GPS system (NMEA), PCB Boards design, power distribution system, energy consumption and temperature monitoring systems and software for super-sensitive star detectors, among others.

### Phoenix Drone

Washington D.C. metro area, USA

OWN PROJECT

Dec. 2015 - Present

- Developed the full software infrastructure for a quadcopter flight controller based on the atmega2560 microcontroller.
- Next steps include: PCB design using EAGLE, development of autopilot guidance system with package drop capabilities and battery-charging station.

### Airbus - SUPAERO

Toulouse, France

AERONAUTICAL ENGINEERING STUDENT TRAINEE

Sept. 2013 - Mar. 2014

- Image processing for Drones. Project based on the Sobel algorithm, which detects the outline of the drones' nearby objects.
- Space - Earth optical communications link. Innovative project dealing with channel modeling, signal characterization, network architecture and Matlab simulation.

### ATOS - Tempos21

Barcelona, Spain

SOFTWARE ENGINEER

Feb. 2012 - Aug. 2012

- Working at the Research & Development department under the international project ADAPTA evaluating the feasibility for android mobile applications to work with Linked Data.

### ATOS - London 2012 Olympic Games

Barcelona, Spain

TELECOMMUNICATION ENGINEER STUDENT

Oct. 2011 - May 2012

- Developed a complex android application for London 2012 Olympic Games. Ranked 5th out of 77 teams around the world.
- App based on a match-making geolocation chat. Java application coding, server coding, user interface design, business model, monetization of the idea and promotion. Click to see videos on  : Example of use & Tutorial.

## Skills

**Programming** Java, Android SDK, C/C++, Atmel AVR microcontrollers, git version control, i<sup>2</sup>c protocol.

**Applications** LabVIEW FPGA, Express PCB, atom, Eclipse, OMNeT++, Matlab, Photoshop, Slack.

**Lab. Equipment** Analog and Digital circuit design, oscilloscope, spectrometer, optical equipment, RF & Bluetooth communications.

**Languages** English, Spanish, French and Catalan. Italian (Beginner).

## Education

### Higher Institute of Aeronautics and Space (ISAE - SUPAERO)

Toulouse, France

AERONAUTICAL ENGINEERING. SUPAERO 3RD YEAR GRADUATE PROGRAM

Aug. 2013 - Mar. 2014

- Selective education establishment outside the main framework of the French university system, dependent of the Ministry of Defense.
- Field of study: Embedded Systems. Specialization: Space communications, navigation and satellite networks.

## Polytechnic University of Catalonia (UPC -ETSETB)

MSC TELECOMMUNICATIONS ENGINEERING

*Barcelona, Spain*

*Sept. 2011 - Jun. 2013*

- Master Thesis with Honors (9.5/10): Telemetry System of the Balloon Experimental Twin Telescope for Infrared Interferometry (NASA).

## Polytechnic University of Catalonia (UPC -ETSETB)

BSC ELECTRICAL ENGINEERING

*Barcelona, Spain*

*Sept. 2008 - Jun. 2011*

- Focused on Signal Processing, Radio communications, Telematics, Internet of Things, Optical Communications and Antennas.

## Volunteering & Writing

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### Horizon Horseback Safaris and Ishestar

*South Africa, Botswana and Iceland*

HORSEBACK SAFARI GUIDE

*Summers 2009, 2010 & 2011*

- Volunteering as a tourist guide on horseback trails in Iceland (2013), South Africa and Botswana (2011 and 2009).
- Responsible for the training and preparation of more than 80 horses. Horse Guide for safaris at reserve of Lindani and Dinaka (South Africa) and Mashatu Valley (Botswana).

### Ecuestre Horse Magazine & family-run business Equitur

*Sahara Desert and African Savanna*

ENDURANCE PROGRAM TESTER AND FREELANCE JOURNALIST

*2008-2012*

- Tested endurance horseback trails in the Sahara Desert (Tunisia) as well as in the African Savanna's remote areas (South Africa, Botswana and Zimbabwe) and did equestrian reports published in different specialized magazines in Spain and Mexico.

### Union Bank of Switzerland (UBS)

*Barcelona, Spain*

MARKET ANALYST

*Aug. 2008*

- Conducted a comprehensive study on the cost and quality of life in Barcelona city for UBS Magazine.

## Committees

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| 2016 | <b>SPIE</b> , Member of the International society for optics and photonics.  | <i>Washington D.C.</i> |
| 2013 | <b>EUROAVIA</b> , Member of the European association of aerospace students.  | <i>Toulouse</i>        |
| 2011 | <b>Aucoop</b> , University association dedicated to cooperation and development of technology in rural areas. Participating in a project to install Wi-Fi repeaters in México and Bolivia. | <i>Barcelona</i>       |
| 2010 | <b>Student Organization</b> , Member of the of Academic Committee of Evaluation of the Telecommunication Engineering School.   | <i>Barcelona</i>       |