victor.gandarillas@icloud.com • (305) 586-9256 • https://vgandari.GitHub.io • U.S. Citizen

Victor Gandarillas

Aeronautical Engineer

Education

admitted **University of California San Diego** — Jacobs School of Engineering
Master of Science in Mechanical and Aerospace Engineering — San Diego, CA

Dec 2013 **Purdue University** — College of Engineering
Bachelor of Science in Aeronautics and Astronautics — West Lafayette, IN

Skills

C/C++, MATLAB & Simulink, Perl, Python, AGI STK, Lua, IDL, Git – (Windows, UNIX)

Experience

Jul 2014 – Oct 2015 **Lockheed Martin Aeronautics** — **F-35 Joint Strike Fighter (JSF)**
Aeronautical Engineer, Asc., Flying Qualities IPT — Patuxent River, MD

- Monitored test flights in Control Room for F-35B/C variants
- Designed and wrote test plan for C-variant aircraft
- Analyzed flight test data and control law architecture
- Developed (MATLAB, Perl, Lua) tools for predictions and post flight analyses
- Investigated landing gear and hydraulic subsystem anomalies (Utilities and Subsystems IPT, systems engineering)

Jun 2012 – Aug 2012 **Jet Propulsion Laboratory (JPL)** — **Orbiting Carbon Observatory (OCO)**
Undergraduate Research Assistant *(http://vgandari.github.io/JPL.html)* — Pasadena, CA

- Researched vicarious calibration of GOSAT satellite sensors
- Measured test site reflectance values for experiment
- Processed MODIS satellite images (IDL) of test site
- Calculated calibration scale factors from satellite image and test site data

Jan 2012 – May 2012 **NASA Dryden Flight Research Center** — **Intelligent Control for Performance**
Co-op, Operations Engineering *(http://vgandari.github.io/NASA.html)* — Edwards, CA

- Led flight operations for F-18 Full-scale Advanced Systems Testbed (FAST)
- Performed hazard analysis on flight test instrumentation for FAST experiments
- Wrote procedures, work orders, test waivers, Mission Rules, Go/No-Gos, and F-18 Fact Sheet
- Designed flight hardware for F-18 and F-15 research testbeds
- Developed F-15B TN836 Experimenters Handbook with team of research engineers

Jan 2011 – May 2011 **Simulation Engineering** — **Automatic Ground Collision Avoidance Software Testing**

- Tested (C++) Trajectory Prediction Algorithm for Small UAV GCAS
- Exposed corner cases to cover TPA trigger domain
- Built Hardware-in-the-Loop (HIL) simulation for Piccolo Autopilot
- Integrated FlightGear interface for HIL simulation via RS-232 serial communication
- Operated UAV ground support equipment for avoidance maneuver characterization

May 2010 – Aug 2010 **Controls and Dynamics** — **Orion Pad Abort 1 (PA-1) Flight Data Analysis**

- Reconstructed PA-1 ANTARES simulation with flight data for Constellation Program
- Simulated Monte Carlo dispersions of simulation with day-of-flight models
- Evaluated flight data (MATLAB) and determined true aerodynamic drag to be lower
- Presented results of simulation validation to team

Aug 2009 – Dec 2009 **Operations Engineering** — **T-34 Pacer Modification**

- Modified instrumentation pallet (Pro/ENGINEER) for T-34 aircraft
- Prepared documents and drawings in compliance with configuration control processes
- Compiled records of F-18 Technical Directives for aircraft maintenance history

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Other Projects

Jan 2014 **Three axis spin stabilized spacecraft simulation**

Jun 2014 **sc_attitude and other projects on GitHub** *(http://github.com/vgandari/)*

- Built numerical simulation of three-axis spin stabilized spacecraft
- Modeled spacecraft as rigid body in circular orbit around a point mass
- Developed visualizationo of angular velocity with respect to body frame

Aug 2013 **"Annihilation of Angular Momentum Bias and Velocity Pointing Errors"**

Dec 2013 **Principles of Dynamics** *(http://vgandari.github.io/School.html)*

- Reproduced two papers on spacecraft rotation dynamics
- Analyzed angular momentum bias, velocity pointing errors for Galileo and STAR48B
- Tested assumptions about stability for two different burn schemes

Jan 2013 **"Low Earth Orbit Rendezvous"**

May 2013 **Modeling and Simulation** *(http://vgandari.github.io/School.html)*

- Developed real time simulation of autonomous CubeSat-sized satellites (NASA JSC/Metecs tool; C-like)
- Analyzed sensitivity of Hill-Clohessy-Wiltshire equations to initial conditions
- Designed human-machine interface (HMI) and orbit/attitude controllers
- Integrated 3-D visualization video capability (via Tcl/Tk) between VSG Avizo and simulation real time data feed

Jan 2013 **"Project Prometheus - Manned Mission to Phobos"**

May 2013 **Spacecraft Design** *(http://vgandari.github.io/School.html)*

- Led conceptual design meetings with small teams
- Developed concepts for launch vehicles, reentry vehicles and orbiting spacecraft
- Presented Phobos mission concepts of operations
- Designed communications architecture for manned (Mars colonization) mission to Phobos
- Calculated link budget for Mars/Phobos vehicles