

# Veronica Medrano

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## PROFESSIONAL EXPERIENCE

### HARRIS CORPORATION, GEOSPATIAL SYSTEMS

**Clifton, NJ**

*Systems Engineer in Software Integration and Test*

*April 2017 – Present*

- Write test data generation scripts to verify GPS Navigation Display software against customer requirements
- Write Python application to simulate anomalies in GPS constellation to verify anomaly processor functionality
- Develop test procedures to execute GPS Navigation Display tests
- Developed automated programs to execute multiple test data generation scripts and load data into database
- Lead software development engineers in troubleshooting software test issues in the Front-End (User Interface) and Back-End (server/database)
- Modified test code using innovative mathematical approach to resolve issues with prior data sets
- Write Python program to parse through GPS Display test logs to verify critical statistical customer requirements

### BOEING NATIONAL SYSTEMS PROGRAMS

**Mexico City, MX**

*Lead Systems Engineer*

*August 2016– April 2017*

- Led team of engineers to execute implementation tasks with a high focus on requirements verification in support of gate closure for a closed area program
- Led team of approximately 30 multi-discipline engineers to successfully execute a hybrid (SRR, PDR, CDR) Technical Design Review, resulting in approved Program implementation plan
- Responsible for providing product and requirements verification status to the customer and program office on a weekly/daily basis
- Presented articulate Engineering Change Packages to Configuration Management personnel at Engineering Review Boards (ERBs); received positive team feedback on deliveries
- Accomplished quick turnaround of delivering system test updates for critical milestone; received recognition award
- Developed and formalized innovative peer review process for analyses; trained customers on the guidelines
- Established rigorous set of work product criteria and product tracking plan, resulting in exceedance of customer expectations
- Analyzed new subsystems and technologies, contributing to ability to post deliverables on behalf of Lead Engineers
- Served as liaison between suppliers, customers, and Boeing engineers in support of project deliverables

### BOEING SATELLITE SYSTEMS INTERNATIONAL

**Mexico City, MX**

*Integration and Test Engineer*

**Hermosillo, MX**

*May 2015– January 2016*

- Developed Aeronautical Operations Plan for the Mexican Air Force, outlining logistics and efficient flight paths in preparation for Mexsat satellite terminal testing in Mexico
- Tested Aeronautical terminal in testbed integration environment to ensure product readiness at customer site
- Coordinated with Boeing flight test managers in Washington regarding flight safety protocols and training requirements, proposing similar plans for flight test engineers in Mexico
- Collaborated with foreign customers on proposed test plans, resulting in approved flight test campaign
- Developed test procedures and satellite modem user manuals
- Oversaw critical process to ship Aeronautical terminal, RF components, and supporting items overseas, reporting directly to Program Manager on product tracking
- Conducted trade-off study to determine most viable headset for making phone calls during aircraft flight
- Led foreign customers in satellite procedural operations training
- Tested various terminal-types in fast-paced, on the field environment at customer sites and in vehicles, troubleshooting network and GPS issues where necessary

- Managed effort to fix defects on terminal SIM cards, saving the program valuable time and resources

## **BOEING SATELLITE DEVELOPMENT CENTER**

*Payload Systems Engineer*

**El Segundo, CA**

**Tysons, VA**

**Hagerstown, MD**

*January 2014– July 2016*

- Executed and debugged critical software-driven payload in-orbit and ground system tests for Mexsat-Morelos 3 satellite
- Developed spacecraft unit degradation analysis for Intelsat 29e in-orbit test cases to ensure in-orbit test phase readiness; received Boeing certificate for exceptional performance
- Guided test engineers in the execution of antenna troubleshooting tests at satellite ground station
- Monitored critical spacecraft commanding test conducted from Mission-Control
- Developed innovative fail-safe in-orbit payload analysis for Intelsat 29e, influencing future Intelsat in-orbit test campaigns
- Led Intelsat 35e payload engineering test team in closure of unit integration test phase
- Updated spacecraft telemetry and alarm limit files in preparation for multiple test phases
- Reviewed and analyzed payload test data and spacecraft telemetry, contributing to successful data sell-offs
- Configured payload RF switches in preparation for payload performance tests on the ground and in orbit
- Collaborated with team to test innovative MPA (multi-port amplifier) design in research and development lab
- Modified and analyzed payload repeater block diagram designs
- Developed communications link budgets and worst-case analyses to ensure satellite performance meet customer requirements
- Trained multiple teams in test processing skills

## **NATIONAL NANOTECHNOLOGY INFRASTRUCTURE NETWORK**

**Washington, DC**

### **HOWARD UNIVERSITY**

*June 2013-August 2013*

*Student Research in Growth and Characterization of Synthetic Diamond*

- Grew polycrystalline synthetic diamond using HVCVD (Hot Filament Chemical Vapor Deposition)
- Analyzed diamond structure using scanning electron and atomic force microscopes
- Constructed electrical contacts on diamond and analyzed its electrical properties
- Assisted other students in the instruction of device operation
- Presented research in Georgia Tech NNIN (National Nanotechnology Infrastructure Network) Convocation, resulting in publication of research in NNIN research journal

## **L-3 COMMUNICATIONS MISSION INTEGRATION DIVISION**

**Greenville, TX**

*Senior Co-op Electrical Design engineer*

*January 2012-August 2012*

- Collaborated with a team of eight engineers to design the lighting system of a special mission aircraft
- Analyzed switch/relay circuit schematics and wire harnesses
- Coordinated with electronics parts vendors to verify characteristics and quality of parts
- Presented system designs to lead engineers and Program Office
- Successfully developed Bill of Materials (BOMs)

## **SPACE ENGINEERING INSTITUTE**

**College Station, TX**

*Student Research in Space Based Solar Power*

*January 2009-May 2011*

- Worked with diverse team to create a satellite module that can test the retrodirective beam control method of sending microwave power back to Earth
- Created layout of spacecraft power system
- Tested RF design that models the retrodirective system in lab
- Utilized Simulink to design satellite phase conjugation algorithm model
- Presented research to NASA JSC mentors

## **ADDITIONAL EXPERIENCE**

### **EMBEDDED SYSTEMS DESIGN**

**Los Angeles, CA**

*Hobbyist*

*March 2015-July 2015*

- Built and tested robot using Python programming language and Raspberry Pi microprocessor
- Added user control functionality to robot by running device using keyboard presses

- Utilized mobile shell client to command robot via iPhone
- Implemented sound board using Python and Raspberry Pi; succeeded in playing back sound with push buttons
- Enhanced troubleshooting skills using Linux commands on LXTerminal

### **THE GREEN PROGRAM**

**Reykjavik, IS**

*Student and Capstone Project Leader*

*August 2013*

- Conducted experiential hands on site visitations to renewable energy facilities
- Collaborated with diverse capstone team to design an autonomous control system that would decrease the risk of electrocution from solar panels during a fire, resulting in positive feedback for idea originality
- Gained global perspective and enhanced intercultural communication skills

### **SENIOR DESIGN PROJECT**

**College Station, TX**

*Student Researcher*

*January 2013-August 2013*

- Coordinated with Electrical and Aerospace Engineering teams to design a reliable power distribution system for a spacecraft that can land near an asteroid
- Created one line-diagram of secondary AC power system
- Created designs of a backup power system in case of emergency; utilized Autocad for final design
- Volunteered to present all team designs to the Aerospace Engineering Department and industry leaders

### **AGGIE-CHALLENGE TEXAS A&M ENGINEERING PROJECT**

**College Station, TX**

*Student Research in Enhanced Lithium-Ion Battery Performance*

*January 2013-April 2013*

- Coordinated with mechanical and chemical engineering students to design potentially transparent batteries; awarded 2<sup>nd</sup> place at Texas A&M Engineering Project Showcase
- Built and analyzed electrical charging and discharging test circuit for various battery electrodes

## **EDUCATION**

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### **TEXAS A&M UNIVERSITY**

**College Station, TX**

*Bachelors Degree in Electrical Engineering*

*December 2013*

- Graduated in top 10% with 3.4 GPA

## **HONORS**

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- Boeing NSP Recognition Award for Successful ECP-086 Technical Design Review *January 2017*
- Boeing NSP Recognition Award for Quick Turnaround of System Test Updates for Upcoming Critical Milestone *January 2017*
- Boeing Recognition Program Certificate for Spacecraft Redundancy Management *February 2016*
- Research on Growth and Characterization of Synthetic Diamond Research published in National Nanotechnology Infrastructure Network Research Experience for Undergraduates (NNIN REU) Journal *August 2013*
- 2<sup>nd</sup> place for research on transparent batteries, Texas A&M AggieE-Engineering Project Showcase *April 2013*

## **ACTIVITIES**

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- Building Neural Network to recognize human hand digits *8/2017–Present*
- Attended web application and deep learning introduction class *7/2017*
- offered in New York City; created web application using Python web framework (Django)
- Reading to Kids Volunteer; reading to Kindergarten students in Los Angeles *9/2016–12/16*
- School on Wheels, tutor for homeless child *6/2015–11/2015*
- Volunteer: Big Brothers Big Sisters of the Brazos Valley *6/2011–6/2013*
- Writing poetry, short stories, and vignettes
- Playing piano; ten years of classical piano training

## **TECHNICAL SKILLS**

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- Python, UNIX/LINUX, Bash/Batch Programming, SQL, Awk, XML, Grep, Django, C++, JAVA, R, Xilinx (Verilog), MATLAB (Simulink, Simscape), VBA (Visual Basic for Applications), Mentor Graphics, PSpice, LabVIEW (NI Elvis), Microsoft Office (Excel, Word, PowerPoint, Visio, Outlook)