

# VERONICA MEDRANO

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**Portfolio:** <https://vnoelifant.github.io/>

## PROFESSIONAL EXPERIENCE

### QUALIFIED TECHNICAL SERVICES

**Houston, TX**

*NASA Gateway L2 Flight Software Test Engineer*

*June 2022 – Present*

- Developed a Python application to manipulate and merge over 200 test procedures in one file to enable efficient filtering of desired data; saved project 45 hours of manual test procedure assessment work
- Wrote 20+ off-nominal integrated software test scenarios to increase software validation test coverage
- Presented solution to streamline software testing processes using pytest-bdd behavior-driven (BDD) framework that would cut the execution and setup time by 2x compared to previous projects
- Collaborated with external software development team to setup a RESTful API interface for test environment using an RPM (Red-Hat Package Manager); reduced lab environment setup time by 40 hours

### MRI TECHNOLOGIES

**Houston, TX**

*NASA Viper Rover Avionics Systems Engineer, FPGA Verification Lead*

*March 2020 – June 2022*

- Received NASA Excellence Recognition Award for developing the Viper Rover Avionics ICD (Interface Control Document) and V&V (Verification and Validation) plan to meet aggressive project deadlines
- Developed and maintained automated workflow for verifying and validating Motor Controller FPGA design code using Jenkins Pipeline scripts, VUnit (HDL unit testing framework), and Subversion
- Entrusted by NASA customer lead with overseeing Avionics team of 20 during his 3-month leave; reported weekly status/schedule to Rover Project Management, managed staffing/tasking, drove technical issues to closure
- Streamlined task management processes using JIRA and Confluence integration

### HARRIS CORPORATION, GEOSPATIAL SYSTEMS

**Clifton, NJ**

*Software Systems Engineer*

*April 2017 – April 2018*

- Developed test data generation scripts and SoapUI mock web service responses to verify display software for GPS OCX (Global Positioning System Next Generation Operation Control System)
- Wrote Gherkin-based human readable test procedures and associated Python code under a BDD (Behavior-driven development) framework
- Led 6 software engineers in successful completion of integration and test phase under tight schedule; assisted with debugging in the Front-End (User Interface) and Back-End (server/database)
- Wrote portable Python program to parse metric data log dates dynamically, measure plot times, and analyze statistics to verify a critical display software performance requirement

### BOEING SATELLITE SYSTEMS

**El Segundo, CA**

*Lead Systems Engineer, Integration and Test Engineer*

*January 2014 – April 2017*

- Awarded for leading team of approximately 30 multi-discipline engineers to execute a hybrid (SRR, PDR, CDR) Technical Design Review within schedule and budget for a closed area program
- 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
- Reviewed and analyzed Inmarsat and Intelsat satellite payload test data and telemetry, contributing to successful data sell-offs
- Executed and debugged critical software-driven payload in-orbit and ground system tests for Mexsat-Morelos 3 satellite
- Tested various Mexsat terminal-types in fast-paced, on the field and testbed environments at customer sites in Mexico

### L-3, MISSION INTEGRATION DIVISION

**Greenville, TX**

*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

## **PROJECTS**

### **PYBITES PDM (PYTHON MENTORING PROGRAM)**

**Houston, TX**

*Python Web Application Developer*

*September 2022 – Present*

- Developed an application that enables users to easily search for a movie or TV Show to watch based on various criteria
- Developing an application that allows a user to conveniently search for charities based on philanthropic interests

### **NAO AND COZMO, ROBOTS THAT INFER YOUR FEELINGS, MSR PROGRAM**

**Evanston, IL**

*Graduate Student Researcher, MSR Final Project*

*June 2019 – December 2019*

- Developed a speech and tone recognition system on the Nao robot that successfully infers a human's feelings without having to ask the human directly; utilized Naoqi and IBM Watson APIs
- Enhanced final project by adding facial expression recognition and a smiley face on Cozmo's OLED screen

### **SAWYER, THE ARTIST, MSR PROGRAM**

**Evanston, IL**

*Graduate Student Researcher*

*December 2018*

- Programmed Sawyer the Robot to detect and draw faces using ROS; team awarded first place in Robotics competition
- Developed the face detection algorithm using Python and Haar Classifiers in OpenCV

### **REAL-TIME MULTIMODAL SIGNAL PROCESSING**

**Evanston, IL**

*Graduate Student Researcher*

*May 2019*

- Developed a Python application to process multimodal signals (physiological with audiovisual) into SSI (Social Signal Interpretation), a framework that offers tools to record and analyze human behavior in real-time
- Integrated a real-time emotion recognizer based on acoustic properties of speech using the tool emovoice

### **MINI ROBOT CAR WITH PYTHON AND RASPBERRY PI**

**Los Angeles, CA**

*Hobbyist*

*May 2015-July 2015*

- Built and tested robot using Python and Raspberry Pi
- Implemented user control functionality by running device via keyboard and mobile device

## **EDUCATION**

### **NORTHWESTERN UNIVERSITY, MS IN ROBOTICS, GPA: 3.27**

**Evanston, IL**

*September 2018 – September 2019*

### **TEXAS A&M UNIVERSITY, BS IN ELECTRICAL ENGINEERING**

**College Station, TX**

*Graduated in top 10% with 3.4 GPA*

*September 2008 – December 2013*

## **SKILLS/TOOLS**

- Systems Engineering, Test Automation, Agile (Scrum), CI/CD
- Python, Django, VHDL, Verilog, Gherkin, Batch/Bash Scripting, Groovy, SQL
- pytest, pytest-bdd, Jenkins, VUnit, RESTful Web Services, SoapUI, Gitlab
- Git, Github, Subversion (SVN)
- Jira, Confluence
- Robot Operating System (ROS), Gazebo, Rviz, V-REP, OpenCV, SSI (Social Signal Interpretation)
- Embedded Programming (PIC, Raspberry Pi, Arduino)
- HTML, CSS, JavaScript, Tailwind CSS, Bootstrap, jQuery
- Windows, Linux (Ubuntu, Red-Hat, CentOS)

## **ACTIVITIES/INTERNATIONAL EXPERIENCE**

- Led Robotics team in demoing Sawyer, The Artist project to high school and middle school girls at Northwestern Career Day for Girls on February 23, 2019
- **New York/Chicago Cares:** Delivered meals to homeless/disabled communities, motivated children to prepare for Special Olympics, entertained homeless children of battered mothers seeking employment
- **The Green Program in Iceland:** Collaborated with diverse capstone team to design autonomous control system that would decrease the risk of electrocution from solar panels