VERONICA MEDRANO

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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+ Human-in-the-Loop (HITL) off-nominal integrated software test scenarios to increase software validation test coverage for the Lunar Gateway Space Station
- 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