Veronica Medrano

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EDUCATION

NORTHWESTERN UNIVERSITY, MS IN ROBOTICS (MSR) **Evanston, IL**

Relevant Course Topics *September 2018 – Present*

Robotic Manipulation, Mechatronics, Embedded Systems, Computer Vision, AI, Machine Learning, Deep Learning

TEXAS A&M UNIVERSITY, BS IN ELECTRICAL ENGINEERING **College Station, TX**

September 2008 – December 2013

SKILLS/TOOLS

- Python, Ubuntu Linux, Robot Operating System (ROS), OpenCV, Rviz, Gazebo, Git/Github, Sentiment Analysis, Scikit-learn, NLTK, Watson APIs, Bash/Batch, C/C++, V-REP, Javascript/Node.js, SQL, SPARQL/ DBPedia, OpenCyc, RDFS/OWL, XML, Awk/Grep, Django, R, Embedded Programming (PIC, Raspberry Pi, Arduino), MATLAB/Simulink, Mathematica, LaTeX, VisualStudio

PROFESSIONAL EXPERIENCE

HARRIS CORPORATION, GEOSPATIAL SYSTEMS **Clifton, NJ**

Software Systems Engineer *April 2017 – April 2018*

- Developed Python test data generation scripts and automated procedures to verify software for GPS OCX (Global Positioning System Next Generation Operation Control System)
- Led 6 software engineers in successful completion of integration and test phase for GPS display software under tight schedule; assisted with debugging in the Front-End (User Interface) and Back-End (server/database)

BOEING SATELLITE SYSTEMS **El Segundo, CA**

Lead Systems Engineer, Integration and Test Engineer *April 2017 – April 2018*

- Awarded for leading team of approximately 30 multi-discipline engineers to execute a Technical Design Review within schedule and budget for a closed area program
- Accomplished quick turnaround of delivering system test updates for critical milestone; received recognition award
- Executed and debugged critical software-driven payload in-orbit and ground system tests for Mexsat-Morelos 3 satellite
- Led Intelsat 35e payload engineering test team in closure of unit integration test phase
- Tested various Mexsat terminal-types in fast-paced, on the field environment at customer sites in Mexico
- Managed effort to fix defects on Mexsat terminal SIM cards, saving the program valuable time and resources
- Developed communications link budgets and worst-case analyses for multiple satellites, resulting in award for exceptional performance

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

TJBOT: A CARING ROBOT, MSR PROGRAM **Evanston, IL**

Graduate Student Researcher *January 2019 – Present*

- Building a caring, emotionally intelligent robot using IBM's TJBot and Watson services
- Developing Node.js application to interface with following Watson services: Speech to Text, Text to Speech, Tone Analyzer, Watson Assistant (conversation building tool), Visual Recognition

COMPUTER VISION: ANALYZING HUMAN EMOTIONS **Evanston, IL**

Graduate Student Researcher *January 2019 – Present*

- Conducting literature survey investigating the impact of multi-modal (facial, audio, body gestures) systems on human emotion recognition

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 Classifers in OpenCV

PREDICTING MENTAL DISORDERS IN TWEETS, MSR PROGRAM **Evanston, IL**
Graduate Student Researcher *December 2018*
- Developed Python program to predict mental disorders in tweets
- Utilized Python's natural language processing module (NLTK) to clean tweets with a focus on textual indicators of depression
- Extracted features from tweets using Bag of Words, TF-IDF and word2vec methods
- Ran features and Naive Bayes machine learning classifier through SciKit Learn Pipeline module

TRACKING OBJECTS USING ROS AND PYTHON, MSR HACKATHON **Evanston, IL**
Graduate Student Researcher *September 2018*
- Programmed a webcam mounted on a servo motors to track the motion of a ball using ROS, Python, and OpenCV

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

HONORS

- Sawyer, The Artist awarded first place in Northwestern robot manipulation competition *December 2018*
- 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*
- 2nd place for research on transparent batteries, Texas A&M AggiE-Engineering Project Showcase *April 2013*

ACTIVITIES/INTERNATIONAL EXPERIENCE

Volunteering
- 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
- Chicago Cares: Serve meals to homeless at St Paul's Church every Saturday; entertain children in homeless shelter every Thursday
- New York Cares: Delivered meals to homeless and disabled, motivated children to prepare for Special Olympics
- Reading to Kids Volunteer, Los Angeles: read to Kindergarten students in Los Angeles
- School on Wheels, Los Angeles: tutored homeless child
- Big Brothers Big Sisters of the Brazos Valley: Big Sister during college

The Green Program in Iceland (Summer 2013)
- Conducted experiential hands on site visitations to renewable energy facilities
- Collaborated with diverse capstone team to design autonomous control system that would decrease the risk of electrocution from solar panels

The Arts
- Writing poetry and performing at open mics; playing piano-ten years of classical training