JOSHUA MONTOYA

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EDUCATION

Master of Computer Science (In Progress)   Expected Graduation December 2023
University of Illinois Urbana-Champaign

Bachelor of Science in Electrical and Computer Engineering   Graduated April 2015
Brigham Young University

PROJECTS

Machine Learning-Based Forest Mapping
- Created species-based segmented images of the Wasatch Mountain Range using open-source aerial imagery, a 3D convolutional neural network-based model, and self-labeled ground truth data, resulting in a species prediction accuracy of over 70% on unseen images. A Dash web app was created to display the resulting prediction map.

Weather Sentiment Analyzer
- Flask-based web app created to determine public sentiment about current local weather in 48 selected United States metropolitan areas, leveraging both the Twitter and National Weather Service APIs, D3.js for data visualization, and open-source sentiment analysis libraries.

Soil Monitoring IoT Device
- Designed a battery-powered soil monitoring device for household plants that sends periodic data via Bluetooth for display in an iOS app, coded using Python, Swift, and the Arduino IDE.

Bloodstream Peptide Detection
- Designed a Python-based web app to operate a medical device with the goal of detecting peptide biomarkers that indicate bacterial infections in the bloodstream.

WORK EXPERIENCE

L3Harris Technologies, Inc., Salt Lake City, UT | Remote   October 2015-Present
Systems Engineer
- Employed statistical models to predict the probability of successful equipment operation in secure communication systems of extensive circuits and software, aiding in improved designs tailored for specific mission scenarios.
- Determined and analyzed identifiable electrical or thermal overstress in a system, potential hardware or software failure modes, and their effects from component to system level, contributing to increased system reliability.
- Worked extensively with the same team for 8 years, building essential teamwork skills, and regularly working with and presenting to program managers and customers to ensure requirements were met within desired timeframe.

Teleflex Inc., Reading, PA   May 2014-August 2014
Intern, Advanced Engineering
- Developed a device and Windows desktop app tracking a catheter through the blood vessels. C code was developed to monitor the real-time location of the catheter using special cameras and display it in a user interface. The device and app were demonstrated to successfully track the catheter in an animal study in September 2014.

SKILLS AND RELEVANT INFORMATION

- Direct programming experience with assembly, C++, C, C#, Python, R, Java, JavaScript, Swift, HTML, VBA, MATLAB.
- Relevant coursework includes Statistical Modeling, Machine Learning, Computer Vision, Natural Language Processing, Cloud Computing, Visualization, Data Mining, and Data Cleaning topics.
- Project experience includes use of Scikit-learn, Keras, Tensorflow, OpenCV, NumPy, Pandas, Docker, Django, React, AWS IoT, Dash, Flask, Node.js, D3.js, Plotly, Blender, Git, GitHub.
- Proficient in Spanish language.