JOSHUA MONTOYA

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EDUCATION

Master of Computer Science (In Progress) Graduating 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 - 2023

- Created species-segmented images of the Wasatch Mountain Range using open-source aerial imagery, self-labeled ground truth data, and a 3D convolutional neural network-based model in Python. A Dash web app was created to display the resulting prediction map.

Self-Driving PiCar - 2022

- Programmed a motorized toy car mounted with a Raspberry Pi, ultrasonic sensor, and camera to navigate a route while avoiding obstacles and obeying a limited set of traffic laws using TensorFlow for object recognition.

Plant Monitoring IoT Device - 2022

- Designed a battery-powered plant 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.

Weather Sentiment Analyzer - 2022

- 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.

Bloodstream Peptide Detection - 2015

- Designed a Python-based web app to monitor output from 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
Reliability 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, hardware or software failure modes, and their effects from component to system level, contributing to increased system reliability.
- Regularly worked with and presented 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 tracking the real-time location of a catheter through the blood vessels using special cameras and a Windows user interface for monitoring. The device and app were shown to successfully track the catheter in a demonstration in September 2014.

SKILLS

- Python, Scikit-learn, Keras, TensorFlow, OpenCV, NumPy, Pandas, Dash, Plotly, Flask, Node.js, D3.js, Blender, C++, C, C#, R, Java, JavaScript, HTML, SQL
- Coursework in Statistical Modeling, Machine Learning, Computer Vision, Natural Language Processing, Cloud Computing, Visualization, Data Mining, and Data Cleaning topics.
- Proficient in Spanish language.