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GitHub: <https://github.com/jshehan29>

Professional Profile: <https://jshehan29.github.io/portfolio>

Summary

Aspiring software engineer and data professional with over seven years of full-time engineering experience and a passion for developing innovative solutions to complex problems. Experience leading research and development efforts and collaborating across multiple functions and departments to design complex systems. Experience presenting technical solutions to existing and potential customers and developing technical reports to describe solution performance. Experience developing Python, MATLAB, and VBA code for analysis and data processing in a professional environment. Continuing to develop skills in SQL, JavaScript, HTML, AWS, PySpark and Machine Learning acquired through the UCF Data Analytics and Visualization Boot Camp.

Education

Data Analytics and Visualization Boot Camp – Certificate, August 2021

University of Central Florida, Orlando, FL

Ph.D. in Electrical Engineering, December 2018

University of North Carolina at Charlotte, Charlotte, NC

Dissertation: *Broadband and Reconfigurable Filtering Antennas for Next Generation Mobile Wireless Comm. Systems*

Master of Science in Electrical Engineering, December 2013

University of North Carolina at Charlotte, Charlotte, NC

Bachelor of Science in Electrical Engineering, December 2011

University of North Carolina at Charlotte, Charlotte, NC

Technical Skills

Languages: Python, MATLAB, VBA, SQL, HTML, JavaScript, R

Tools: Microsoft Office Suite, PostgreSQL, Tableau, Amazon AWS, Apache Spark, Flask

Professional Experience

Airgain, Inc., Senior Staff Engineer

May 2020 – Present

- Develop new internal capabilities by creating Python scripts to analyze antenna data and generate output files to be used with customer design software
- Manage design projects and coordinate with sales to address customer inquiries related to product development
- Maintain design documentation in compliance with internal Corporate Quality Management System guidelines
- Create technical reports detailing antenna performance and present results to customers

Quintel USA, Inc., Director of Engineering, Research and Development

February 2020 – May 2020

- Developed Excel VBA scripts in coordination with operations team to analyze correlation between multiple antenna test setups for production process improvements
- Implemented measurement log and data recording process to streamline antenna measurement
- Designed test fixture and developed Excel VBA scripts for dielectric material characterization
- Coordinated with overseas operations team to address manufacturing issues

L3Harris Technologies, Inc. (formerly Harris Corp.), Antenna Systems Engineer

January 2019 – January 2020

- Secured internal research funding and led development efforts for programs exploring additive manufacturing technologies for RF/antenna applications
- Served as integrated product team (IPT) lead on phased array research and development program
- Developed Python and MATLAB code for antenna analysis and data processing
- Mentored department interns and junior engineers

Amphenol Antenna Solutions, RF Project Engineer

February 2016 – December 2018

- Led design efforts for low-cost, manufacturable, high-performance antennas for macro, small cell, and DAS applications
- Delivered customer presentations detailing product capabilities and gathered feedback for future development
- Established RF material characterization procedure using MATLAB to bring new capabilities to the division
- Developed evolutionary algorithm in MATLAB to extract RF filter parameters

Harris Corporation, Antenna Systems Engineer

January 2014 – January 2016

- Developed Visual Basic scripts to run within HFSS (antenna design software) for phased array analysis
- Designed antennas for various frequency bands and applications using a variety of software packages
- Created MATLAB scripts to perform analysis and automate tasks for antenna design software
- Led redesign and test effort for a satellite antenna system resulting in awards for my team

Selected Coding/Analytics Projects

Amazon Vine Reviews Analysis | https://github.com/jshehan29/Amazon_Vine_Analysis.git

- This project investigated positivity bias in Amazon Vine reviews using PySpark in Google Colaboratory. The review data was pulled from the Amazon reviews S3 bucket in AWS, and AWS was used to store the PostgreSQL database containing the tabulated data. The reviews were separated based on their payment status, and the percentage of 5-star reviews were calculated for paid vs. unpaid reviews.
- Tools/languages used: PySpark, Google Colaboratory, Amazon AWS, PostgreSQL

Predicting Sales with Machine Learning | https://github.com/SindieCastro/Predicting_Sales_Using_Machine_Learning.git

- This project used binary classification machine learning to predict video game sales in Europe based on a variety of features such as sales, platform, and genre. This was a group project where I was responsible for the machine learning portion of the project. Multiple machine learning models were investigated including Logistic Regression (LR), Random Forest (RF), Support Vector Machine (SVM), Neural Networks (NN), and Voting Classifiers composed of LR, RF, and SVM models. The final model chosen for the project was LR due to low computational overhead and a prediction accuracy of around 88%. Investigation of the class prediction probability densities revealed potential overfitting on one of the classes but resulted in good prediction accuracy on the validation data, nonetheless.
- Tools/languages used: Python, Jupyter Notebook, PostgreSQL

BLS Data Explorer | <https://github.com/jshehan29/bls-data-explorer.git> | <https://bls-data-explorer.herokuapp.com>

- This is a personal project that I started after completing the UCF Data Analytics and Visualization Boot Camp. This project pulls data from the Bureau of Labor Statistics (BLS) website using the BLS API, stores that data in a PostgreSQL database, and uses Flask to create a web application to display plots for the Consumer Price Index (CPI) and Producer Price Index (PPI) over the last 10 years. Eventually, the app will incorporate machine learning to perform time-series forecasting so the user can forecast CPI or PPI over some future period. More datasets will also be included in the future. The web application and database are hosted on Heroku.
- Tools/languages used: Python, Jupyter Notebook, Flask, PostgreSQL, SQLAlchemy, HTML