Andrés E. Columna

Summary

Aspiring data scientist and developer with a background in Physics and Computer Science. Interested in Machine Learning and its application in Financial Markets. U.S. Citizen. I love hiking, mangos, and Python. Looking for SWE internships for Summer 2020. Click here to see the my résumé properly formatted as a web page.

Education

Michigan State University, Honors College & College of Engineering August 2017-Present

Honors College, B.S. Computer Science & Engineering, expected 2020

Minor in Physics

3.61 GPA

Society of Hispanic Professional Engineers

University of Michigan-Ann Arbor, College of LS&A

62 credits towards B.A. in Physics

Old Personal Website

Technical Experience

Languages and Technologies: C++ (and STL), Python (and Numpy, Pandas, Scikit-Learn), Wolfram Mathematica, SQL, Javascript, HTML, CSS, C, Bash Scripting, Regex, Hadoop, Hive, Java, Spanish, English.

Incoming Artificial Intelligence Software Developer and Consultant @ Accenture in NYC Summer 2019

Responsible for developing cognitive applications to solve business problems using leading AI technology frameworks.

Teaching Assistant for CSE 331: Algorithms and Data Structures. 2019-2020 School Year

Tasked with helping design projects for students taking MSU's algorithms course and the associated tests to grade. I'll also help answer student's questions.

UM Advanced Undergraduate Physics Laboratories 2016-2017 School Year

Assistant Engineer: Assembled and tested experiments meant to be conducted by students in Physics laboratory courses 341 and 441. Experiments include Michelson-Morley Ether Detection and Electron Spectrocospy

Haptics Lab @ UMich Mechanical Engineering Summer 2016

Developed handheld medical device designed to provide surgeons live feedback of the tensile strength of their sound surgical closures. Closed surgical wounds (particularly of the abdominal wall) can often burst post-operation when sutured too loosely, or alternatively, strangulate tissue (necrosis) if sutured too tightly. Using an Arduino microcontroller, I built a simple hall effect based magnetic sensor that is able to measure the tensile strength of sutures (Seen here). Using SolidWorks, also created a model of a 2.0 version (Seen here).

Selected Projects and Courses ⬡ (Github Link)

Can Twitter Sentiment Analysis help predict Nike stock price swings? October 2019

Collected sample of one year's worth of Twitter data (~ one terabyte). Applied Machine Learning Techniques using Python-Sciklearn to explore whether stock prices of sportswear industry companies (e.g., Nike, Adidas, Puma, and UnderArmour) can be predicted by analyzing the sentiment and volume of related tweets. Then compared the accuracy of Twitter-sentiment linear models compared to using the previous five days' price swings to predict future price swings.

Hot or Not: Can Professor Quality be Predicted? May 2017

Created a concurrent web scraper running on Amazon EC2 virtual machine instances to collect data from all big ten professors listed on (API-less) RateMyProfessor.com. Then used Python-Pandas stack and R to analyze the correlation between professor attractiveness rating and quality rating. (Link)

Computer Vision Sudoku Solver September 2018

Web Application that uses Mathematica's computer vision and machine learning libraries to detect and parse an image of a sudoku puzzle. Then uses Python, to solve the Sudoku puzzle from an image, using principles of constraint satisfaction and backtracking. Built for Mhacks 7.(Video Demo) (Link)

MSU-Themed Space Invaders Game September 2018

Coded a Visual Studio Application of over 20 classes in C++ to demonstrate proficiency in Object-Oriented programming concepts. These include inheritance, polymorphism, and encapsulation. (Video Demo)(Source Code)

Relevant Coursework

Courses: CSE 480 (Database Systems), CSE 482 (Big Data), CSE 431 (Algorithm Engineering), PHY 535 (Complex Network Theory), CSE 335 (Object-Oriented Software Development), CSE 320 (Computer Architecture), CSE 331 (Algorithms and Data Structures), CSE 232 (Intro to Programming II), PHY 411 (Computational Physics)

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