

Andrés E. Columna

Summary

Aspiring Software Engineer and Data Scientist. Student at Michigan State University. Particularly interested in Complex Networks Theory. U.S. Citizen. I like hiking, mangos, and Python.

Education

Michigan State University, Honors College & College of Engineering

August 2017-Present

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

3.72 GPA

Society of Hispanic Professional Engineers

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

August 2015-May 2017

62 credits towards B.A.

Technical Experience

Languages and Technologies: C++ (and STL), Python (and Numpy, Pandas), Wolfram Mathematica, Javascript (and JQuery), PHP, HTML, CSS, C, Bash Scripting, Spanish, English.

MSU Wonders Hall

2017-18 School Year

Night receptionist for North Wonders Hall Help Desk.

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 (attempt), Positron-Electron annihilation, and Gamma Ray Spectroscopy. Also contributed to the assembly of a single-atom Rubidium trap.

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 . Using SolidWorks, also created a model of a 2.0 version

Selected Projects and Courses

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.

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.

Relevant Coursework

Courses: CSE 320 (Computer Architecture), CSE 331 (Algorithms and Data Structures), CSE 232 (Intro to programming II), PHY 411 (Computational Physics) , CSE 477 (Web Application Development), CSE 491 (Machine Learning), PHY 535 (Complex Network Theory), CSE 335 (Object-Oriented Software Development.)

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