

# Andrés E. Columna

## Summary

Aspiring Software Engineer and Data Scientist. Student at Michigan State. Particularly interested in complex networks theory. U.S. Citizen (No visa required.) I like hiking, mangos, and building things.

## Education

### Michigan State University, College of Engineering

August 2017-Present

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

3.52 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, R, 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?

September 2012 - May 2013

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 2012 - May 2013

Application using Mathematica computer vision and C++, to solve a Sudoku puzzle from an image. Used graph algorithms learned from CSE 331. Built for Mhacks 6.

### Courses

September 2012 - May 2013

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 (Network Theory), CSE 335 (Object-Oriented Software Development.)

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