ARJUN DEVARAJAN

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EDUCATION

DUKE UNIVERSITY   *2014 – present*
- B.S. Computer Science, B.S. Physics
- Coursework: Intro to Artificial Intelligence (Python), Computer Architecture (C/MIPS), Data Structures and Algorithms (Java), Mobile and Web Applications (Swift/JavaScript/MongoDB), Electromagnetism and Optics, Mechanics, Linear Algebra, Multivariable Calculus, Probability, Ordinary and Partial Differential Equations

EXPERIENCE

Physao
October 2015 – present
- Android developer for a digital health startup that created a medical apparatus to track breathing patterns and abnormalities in a mobile application for asthmatics

Duke Energy Data Analytics Lab
Data+/Bass Connections
May 2015 – present
- Project estimating granular commercial/residential rooftop solar PV installation data
- Team developed a MATLAB GUI to create a training data set of solar panels and ground-truthed 19,000+ solar panels for current machine learning applications
- Author on research journal article being submitted to Scientific Data

NCSU Chemical Engineering Dept.
October 2012 – February 2014
- Researched the optimization and utilization of the biofuel chemical looping combustion process; won the Siemens Research Competition Semifinalist award

PROJECTS

Pacman AI
February 2016
- Solved multiple search problems for a Pacman game in a class project by implementing DFS, BFS, UCS, and A* algorithms, as well as various heuristics

Kaggle: Here Comes the Sun
January – February 2016
- Used MATLAB feature extraction and image classification tools for a machine learning competition to identify solar panels in satellite orthoimagery; placed 2nd

Ecodiversity (www.sifronb.com/hd)
November 2015
- Team used Polymer and ESRI's ArcGIS Javascript API for crowdsourcing and visualizing environmental biodiversity data; won the ESRI API Prize at HackDuke

Processor Design
October – November 2015
- Designed a full processor using Logisim with a single-cycle implementation of a MIPS-like, 16-bit, word-addressed RISC architecture for a class project

"What Does It Mean to be Human?"
July 2015
- Semifinalist in Bill Gates's and the Big History Project's "What Does It Mean to be Human?" contest: https://www.youtube.com/watch?v=eG_B-fxM0EU

Huffman Compression
April 2015
- Implemented the Huffman algorithm technique (using Java) in a class project to compress and decompress a bitstream text file with a trie data structure

Volyoome
November 2014
- Team created a Python PC app and corresponding website that adjusts computer volume based on external noise input; submitted both to the HackDuke competition

Depth-operating Prosthetic Sensor
January – June 2013
- Designed and built an arm sleeve that implemented Arduino to vibrate and warn the user in reaction to changes in infrared sensory input and movement

ACTIVITIES

The Cube: Duke's Incubator
January 2015 – present
- Leader of Duke's entrepreneurship living group that provides a networking platform and resources for innovators in the Duke community: http://www.inthecube.org/

SKILLS & INTERESTS

Proficient in: MATLAB, Java, MIPS, HTML, LaTeX
Familiar with: Python, XML, C, Swift, MySQL, JavaScript, CSS, D3.js, Maple
Software: Arduino, Git, Logisim, Polymer, Google Fusion Tables, Android Studio, Eclipse, Emacs, Sublime, Inkscape, Xcode
Interests: Space exploration, educational Youtube videos, augmented reality, political comedy, filmmaking, piano