Ruth Dolly Johnson

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Education

University of California, Los Angeles

Class of 2017

Mathematics of Computation

Minor in Bioinformatics

GPA 3.4

Alpha Lambda Delta Honor Society

Skills

C/C++

Python

HTML/CSS

Matlab

Other tools:
ReactJS, Shell/Bash, Autodesk

Coursework

Data Structures
Algorithms
Mathematical Modeling
Linear Algebra
Real/Complex Analysis
Numerical Methods
Statistics

>> Work Experience

Sandra National Laboratories | R&D Engineering Intern — June 16' - Current

- Doubled the accuracy of machine learning based algorithms used for anomaly detection using DBSCAN and One-Class SVM algorithms
- Created a Python library for gathering satellite data from online database, improving overall efficiency of data collection and analysis pipeline
- Implemented a UI for various tools of an enterprise software using ReactJS

Bogdan Population Genetics Lab | Undergraduate Researcher — March 16' - June 16'

- Created command-line tool to produce data visualizations of SNPs and functional annotations to assist with classification of causal SNPs for complex traits and diseases
- co-author (publication pending): *Improved methods for multi-trait fine mapping of pleiotropic risk loci*
- submitted abstract to ASHG Conference: *Visualizing correlated causal variants*

Center for Tropical Research | Undergraduate Researcher — Sept 15' - June 16'

- Utilized and updated software pipeline to filter reads, eliminate PCR duplicates, and identify loci through denovo-mapping techniques of various tropical species
- wrote shell scripts to parse output files to compare quality of data and analyze efficiency of hyper-parameters

Math 88S: Undergraduate Student Initiated Education | Instructor

- Facilitated and designed a 10-week undergraduate mathematics seminar designed to introduce students to higher level material in mathematics
- Topics included a general introduction to: graph theory, cryptography, game theory, constructing proofs, probability, and topology

Daily Bruin | Web Developer — Sept 15' - June 16'

- Developed front-end for news features and quarterly projects using Bootstrap, Foundation, jQuery, git, Handlebars
- Helped develop the main election page used to publish updates and candidate information for the 2016 USAC election

>>Projects

RoboHome | IDEA Hacks | Overall First Place Winners

- IoT themed smart home model with automatic lighting, doors, T.V., and shower controlled via Android app, Myo, and webpage; used Arduino Uno, C, JavaScript

HappyHour | Hack the North | Winner of Best Uber Hack

- Pebble watch application that monitors drink intake and calculates BAC level, and uses Uber API to enable user to get Uber information on their watch

MyoMessenger | Cal Hacks 2.0 | Top 4 Finalists

- Created a safer driving experience by using Myo armband to send messages through simple hand gestures and Muse's headband's accelerometer to detect when drivers were falling asleep