Ajay Dheeraj

Education

Expected May 2021
Duke University, *Trinity College*, Durham, NC, GPA: 3.96/4.00
Degree: BS, Mathematics, Computer Science
Involved with Math Union(executive board/social chair), Duke Go Club(founder/president), Duke ACM Chapter, Chronicle Newspaper

Skills

Languages: Python, Java, bash, C   Tools: Git, Emacs, MATLAB

Work Experience

May-Aug.2018
Research Intern, *DOMath 2018 Program*, Duke University, Project: Local affinity construction for dimension reduction methods
Conducted collaborative research for eight weeks on non-linear dimensionality reduction using diffusion map technique
- Developed robust kernel function that improved upon existing kernels by reducing parameters but maintaining accuracy using a k-nearest neighbors approach
- Studied convergence of this kernel to Laplacian operator, numerically implemented algorithm through MATLAB, and tested kernel on MNIST data, yielding 95% accuracy in differentiation

May 2015-Sept.2016
Research Intern, *Icahn School of Medicine at Mount Sinai*, New York City
Conducted research for over 200 hours on fMRI optimization algorithms in smaller structures to improve regional mapping and signal analysis through bash and MATLAB scripting
- Created generalizable method for imaging sub-cortical structures using time series and anatomical data
- Increased signal ratios and more accurately confined the functional boundaries of the ventral tegmental area and nucleus accumbens in patient MRI scans

Projects

SmartAir, Health and Wellness Track at HackDuke 2017: Code For Good
- React Native app that monitors outside air quality in real-time based on location data
- Implemented through a REST API/Python+Flask backend
- Remotely controls on-premise Tesla using SmartCar SDK, depending on user-set air quality thresholds

Stella Hiring Bot, Macy's Challenge Winner at HackGT 4: New Heights
- Interview and hiring chat bot running on Node.js and hosted on Microsoft Azure web app platform
- Uses Microsoft Bot Framework/Text Analytics API to screen and recommend candidates for further interviews, streamlining Macy's hiring process for over 90,000 employees during holiday season

Spacial Bombardment, Honorable Mention, Data Treasure Hunting Category at Space Apps Next Gen NYC Hackathon
Interactive JS visualization of NASA meteor and fireball database from 2009-2015 using Google Maps API

Honors and Achievements

- 2017 Putnam Exam Top Third of Participants
- United States of America Computing Olympiad Gold Division
- 2016 American Invitational Mathematics Examination Qualifier
- Top 2.5% of Project Euler participants (>650,000 members)

+1 (516) 491 2070   ajay.dheeraj@duke.edu   www.ajaydheeraj.com
ajaydheeraj   in ajay.dheeraj