

TRISHUL NAGENALLI

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Skills

SELECTED COURSEWORK

Data Structures & Algorithms

Computer Architecture

Linear Algebra & Differential Equations

Partial Differential Equations

Better Living Through Data Science

Mathematical Modelling in Biology

Semiconductors & Microelectronic Devices/Circuits

Intro to Probability

Introductory Electricity, Magnetism, and Optics

PROGRAMMING LANGUAGES

Python

Java

HTML5

JavaScript

CSS

C

MIPS

Arduino

R

Matlab

SOFTWARE SKILLS

OOP

Unix

Amazon MTurk

Dataset Construction

OpenCV

Dlib

jQuery

LANGUAGES

English

Kannada

Spanish

Interests

Robotics

Computer Vision

AI & Machine Learning

Martial Arts (Karate & Taekwondo)

Football (High School & NFL)

Education

Duke University

BS Computer Science 2020

BSE Electrical & Computer Engineering 2020

GPA: 4.0 | Garda Scholar | Dean's List with Distinction All Semesters

Relevant Employment

Duke Data Plus

Research Intern

- Researched methods to detect electricity access in developing countries using remotely sensed satellite data and machine learning
- Built a customizable platform to collect crowdsourced image annotations on Amazon Mechanical Turk using Python, HTML, Javascript, jQuery
- Partnered with Data Plus Program Faculty to use the above mentioned Amazon MTurk Tool to collect unrelated annotations of solar arrays from aerial imagery
- Collected and published a dataset of over 4000 annotated powerplants on Figshare
- Compiled and published a comprehensive dataset of geo-referenced satellite imagery and electrification data for over 30,000 villages in the Indian state of Bihar
- Featured on Duke Research Blog

Duke Energy Initiative

May 2017 to Aug 2017

Sapiro Labs

Research Intern

- Developing methods to prevent spoof attacks on facial detection systems
- Designed and built a two camera system to detect spoof attacks using depth perception
- Training an OpenCV support vector machine to process facial features detected using the Dlib CV library

Duke University

Feb 2017 to Present

National Institute of Standards and Technology

Research Intern

- Built a Python application that interfaces with the National Instruments Data Acquisition Board to conduct spectroscopy experiments on optical microresonators
- Used Object Oriented Programming, Threading, wxPython, NIDAQ Library

Gaithersburg, MD

Jun 2015 to Aug 2015

Projects

Duke Taekwondo Video Manager

- Took initiative to develop a system to easily view and analyze Duke Club Taekwondo sparring footage
- Current publicity chair for the club
- Using Youtube and Box Storage APIs with Python SDK

Nov 2017 to Present

SanFran AirBNB

- Deployed a web application to provide revenue estimates for AirBNB hosts renting property in San Francisco
- Implemented using client-side Javascript, HTML, CSS & Google Geolocation API. Used Python for data preprocessing
- Earned a spot in the Capital One Software Engineering Summit with this project

Nov 2017

EnerGenius

- Cofounded startup dedicated to enabling rapid entry of new customers into India's electrical grid.
- Using Python-flask, Heroku, and Twilio API to build an SMS based pay-as-you-go electricity payment scheme
- Finalist in the Hult Prize at Duke competition

Oct 2017 to Present

Integrated Design Challenge

- Designed, built, and programmed an Arduino-based robot to complete autonomous sensory, movement, and communication tasks
- Worked on two robot teams and collaborated with three others
- Developed asynchronous and distributed communications protocol used by all five robot teams

Mar 2017 to May 2017

Project Watt

- Built a web-app to help users make smart decisions about upgrading to energy efficient home appliances
- Utilized Python-flask micro web-framework and javascript
- Won Energy and Environment Track at HackDuke 2016

Nov 2016

Leadership

The Cube

- Member of Duke's Entrepreneurship Selective Living Group, the Cube.
- Executive Committee member for Entrepreneurship Summit held in April 2017. Recruited speakers from the Durham startup community and beyond

Mar 2017 to Present

VSNA National Convention - Committee Chair

- Chaired Spiritual Committee and Registration/Website Committee
- Collaborated with spiritual leaders from India to foster discussion regarding religious principles in America at convention in Dallas, TX

Mar 2017 to Jul 2017