James **McDougall**

Computer Engineer – Networks, Security, and Blockchain Enthusiast

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Education

University of California, San Diego — *La Jolla, CA*

B.S. in Computer Engineering — *Expected June 2021*

- RA for one year in Warren College

Skills

Programming Python, C/C++, TensorFlow, Java, JavaScript, ReactJS, Latex
Tools Kubernetes, Docker, Flask, Apache Nifi, Azure, Bash, Git, Linux, Redfish, VS Code
Clubs Late Night Hacks, AlchemyX Startups

Experience

Software Engineering Intern at **Cirrascale Cloud Services** *June-August 2019*

- Designed an ETL (Extract, Transform, Load) diagram using Apache Nifi for transferring data from AWS buckets to local cloud storage.
- Using Docker containers and Azure, designed and implemented components of a data pipeline for self-driving cars including model inferencing, training, and simulation of driving conditions.
- Using Kubernetes, Horovod, and MPI, deployed TensorFlow containers to a multi-GPU, multi-node cluster.
- Created a power management tool for reporting server power and temperature using Redfish REST API and Python, displaying graphs of server usage on an Emoncms dashboard; delivered to client.

Computer Science Tutor in the **UCSD CSE department** *January 2019-June 2019*

- Undergraduate TA for CSE 100 (Advanced Data Structures in C++), CSE 95 (CSE Tutor Training).
- Used C++11 debugging skills to assist students in the lab; explained data structures and algorithms.

Data Analyst in the **UCSD CSE department** *August 2018*

- Performed statistical analyses (t and z tests) on data from a computer science education research project in a Jupyter Notebook using Python, Pandas and organized results in a research paper.

Projects

FileBlocks using **Python, on Github('FileBlocks')** *In Progress*

- My current project goal is to create a distributed file system using blockchain and other cryptographic techniques to secure my friends' and family's files.

Personal Website using **JavaScript**, **ReactJS, on Github('website')** *September 2019*

- Built a webpage using ReactJS front end on Github pages.

Cat Messages using **Flask**, **Python, on Github('Cat Messages')** *August 2019*

- Using the Flask microframework and Twilio API, built a small web app to text random cat messages to users.

Chicago Crime Analysis using **Jupyter, Python, Pandas, on Github('Project')** *January 2019*

- Using Pandas to organize and a Binomial regression to analyze open source data, predicted likelihood of arrest from district and crime type.

ServerPi using **PHP, Raspberry Pi, Nginx** *December 2018*

- Using Nginx as a web server on a Raspberry Pi and PHP as a backend language, created a web interface for upload and storage of family photos.

Ultrasonic Sensing Robot (MAUSR) using **Python, Raspberry Pi, on Github** *August 2017*

- Using Python on a Raspberry Pi, manipulated motors to change direction based on ultrasonic sensor data