James **McDougall**

Computer Engineer – Networks, Systems, Machine Learning

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Description automatically generated JamesMcDougallJr

**Education**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**B.S. in Computer Engineering,** University of California, San Diego. Expected June 2021 (GPA: ~3.5/4.0)

**Experience**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Software Engineering Intern** at[**Centauri Corp**](https://www.centauricorp.com/)using **Python, Tensorflow**

***June – August 2020***

* I will be developing two neural networks for a computer vision project this summer

**Software Development Intern** at[**San Diego Supercomputer Center**](https://sdsc.edu/)using **Bash, Jupyter, Slurm**

***September 2019-Present***

* Designed a secure Jupyter Notebook service on the supercomputer using a reverse proxy server
* Wrote a Bash script to interact with the proxy server and submit a job to the supercomputer’s scheduler

**Software Engineering Intern** at[**Cirrascale Cloud Services**](https://cirrascale.com/)using **Docker, Kubernetes, Tensorflow**

***June-August 2019***

* Designed an ETL diagram using Apache Nifi for transferring data from S3 buckets to local storage
* Created a Docker container to start a Jupyter Notebook to allow users to efficiently test inferencing accuracy of different Tensorflow models on an image directory
* Wrote a script which took as input a Tensorflow model directory and used that model to detect humans in a driving simulation to control the direction of a car
* Created a Kubernetes pod spec to start an eight GPU cluster for object detection model training
* Created a cluster management tool for reporting server power and temperature using Redfish API and Python, ported to a dashboard API to display graphs of server usage; delivered to client

**Computer Science Tutor** at **UCSD CSE Department**

***January 2019-June 2019***

* Undergraduate TA for Advanced Data Structures in C++ and tutor training courses
* Used C++11 debugging skills to assist student in the lab; explained data structures and algorithms

**Projects**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[**ClubHouse**](https://club-house-sad.herokuapp.com/) using **JavaScript, Flask, Docker, Heroku, Postgres**

* Using a Flask server hosted on Heroku, implemented an API in Python for adding events to Postgres database, verifying user status, and getting images
* Templated web components in HTML for login page, new user, dashboard, and club pages
* Using Fetch API and JQuery, implemented page logic using GET and POST requests

[**Security Camera**](http://berserkcomputing.com:65535/) using **Flask, Nginx**

* Using a Flask server on a Raspberry Pi and an Nginx to proxy through my router, created a video stream and exposed it through my personal domain so I can view my front door from anywhere

[**Ultrasonic Sensing Robot**](https://github.com/JamesMcDougallJr/mausr)using **Python, Raspberry Pi**

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

**Skills**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Tech Stack:** Python, C/C++, Java, JavaScript, React, Docker, Kubernetes, Flask, Bash, Git

**Clubs:** Late Night Hacks, AlchemyX Startups

**Awards/Other:** Eagle Scout, Resident Assistant