Jugal Chitkara

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EDUCATION

Computer Engineering BASc, University of Waterloo, Class of 2024
Relevant courses: Algorithms and Data Structures (C++), Concurrent Programming (C), Numerical Methods (MATLAB), Digital Systems (Assembly), PCB Design and Prototyping, Statistics

SKILLS

Languages: HTML, JavaScript, Python, TypeScript, CSS, C++, PHP
Frameworks/Databases: NodeJS, Angular, React, TensorFlow, SQL, MongoDB, Redis, Apache
Tools/Tech: Git, Linux, Postman, MS Suite, MATLAB, phpMyAdmin

WORK EXPERIENCE

Cachelan, Markham, Ontario
Software Engineer Intern **Apr 2021 – Aug 2021**

- Designed and developed a full **LAMP Stack** feature to adhere to client's specifications. Integrated with **MailGun API** to automate emails to clients for data entered or deleted on web page.
- Architected an internal tool for labelling images using **Python** and **Tkinter** for GUI.
- Designed and prototyped a machine learning classifier to distinguish whether the site is snow covered. Employed **Scikit Learn** Library and **Scikit Image** for image processing.
- **Automated the site integration to reduce time from a day to less than 30 minutes** by writing Python scripts.

Superheat, Kincardine, Ontario
Web Developer **Sept 2020 – Dec 2020**

- Altered communication streams to transfer temperature and system data from hardware through **NodeJS** webservers and **Redis** to fit specifications requested by the frontend development team.
- **Decreased turnover time from over a day to less than an hour** for delivering charts to the client upon project completion by automating data recovery method from proprietary hardware running C++ by modifying TCP Socket Communication, NodeJS Servers, and Redis communication.
- Modernized outdated, decade-old **HTML5 + jQuery** app used for rig control and site monitoring by recreating it with the **Angular 10** framework.

Superheat, Kincardine, Ontario
Web Developer **Jan 2020 – Apr 2020**

- Worked alongside 4 developers to create features for our web application such as writing new views for new data and implementing video upload functionality.
- Maintained current industry standards by refactoring 15-20 modules into components and altered templates to convert and modernize web app from **AngularJS** to **Angular.**
- Updated Loopback **NodeJS** APIs and altered SQL models to securely fetch necessary data.
- Utilized **Bitbucket** for source control and **Jira** for task management in an **Agile** environment.

PROJECTS

PID Controlled Ball on Beam Balance
Arduino/C++

- Designed and implemented a system that uses PID control principles to balance a ball on a beam.
- Used ultrasonic sensor to find the ball on beam and used a servo motor to adjust the angle.
- Control principles can be applied to aircraft/drone stabilization or lane assist in automated vehicles.