

# Jugal Chitkara

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## EDUCATION

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**Computer Engineering BASc** at University of Waterloo Class of 2024

Relevant courses: Advanced Calculus 1 (Differential Equations), Algorithms and Data Structures (C++), Digital Systems, Materials Chemistry, Economics, Numerical Methods (MATLAB)

## SKILLS

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**Languages:** HTML, JavaScript, Python, TypeScript, CSS, C++, C#

**Frameworks/Databases:** NodeJS, Angular, React, Bootstrap, TensorFlow, SQL, MongoDB, Redis

**Tools/Tech:** Git, VSCode, XCode, MSSQL Server, Linux (Ubuntu), Bash, Postman, MS Suite, vim, MATLAB

## WORK EXPERIENCE

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**Superheat**, Kincardine, Ontario (Remote)

Web Developer

Sept 2020 – Dec 2020

- Altered multiple 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 after a project by automating data recovery method from proprietary hardware running C++ in the form of modifying TCP Socket, NodeJS, Redis communication.
- Modernizing outdated, decade-old **HTML5 + jQuery** app by recreating it with the **Angular 10** framework.

**Superheat**, Kincardine, Ontario

Web Developer

Jan 2020 – Apr 2020

- Worked on a team of 4 developers in an **Agile** environment to create features/releases and maintain a web application using **AngularJS** Framework for frontend and Loopback **NodeJS** framework for backend APIs.
- Created features such as new views for new data coming from the NodeJS backend and video upload functionality to the AngularJS app.
- Refactored 15-20 modules into components and altered templates to convert and modernize web app from **AngularJS** to **Angular**.
- Source control and management were done using **Bitbucket** and **Jira**.

**Framatome**, Kincardine, Ontario

Engineering Coop Student

Feb 2019 – June 2019

- Analyzed technical documents and design specifications for errors.
- Organized errors in MS Excel and presented findings to the manager.
- Introduced to **ASME** and **CSA** standards through analyzing documents to meet industry standards.

## PROJECTS

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**Custom Tools for Market Analysis,**

Python

- Streamlining my dad's investment workflow by converting his strategies into Python code. Using financial data from Yahoo via Pandas DataReader and Matplotlib to display charts with correct indicators.
- Portfolio optimization program for reducing portfolio risk while maintaining or improving returns. Takes a list of tickers being considered for long term investment, checks covariance, applies an algorithm to weight how much to buy of each stock. (WIP)

**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.