

Employment History

Software Developer	TCM Technologies LTD	September 2020 - Present
<ul style="list-style-type: none">• Maintain and Improve Bell Telecommunications' internal and external SCADA web applications• Utilize jQuery, Handlebars, and Angular for Frontend development, NodeJS, MongoDB for Backend development• Reduce web map usage and geocoding service costs by replacing Google maps with Leaflets maps and plugins• Create Cron Jobs to automate system maintenance and to write MongoDB scripts to update and modify large file		
Linux Automation QA, Co-op	T2 Systems, Inc.	October 2017 - August 2018
<ul style="list-style-type: none">• Designed and executed both manual and automation test cases for verification and regression testing, worked closely with developers to track, report, and fix bugs• Implemented and improved automation tests for SW application on Linux platform using Python Unittest framework• Participated in sprint planning and retrospective, and worked in Agile environment with Agile development tools, such as Bitbucket, Jira• Created a mock web server using Python Flask framework to handle HTTP requests and to test applications with specific responses		

Education

Bachelor of Applied Science, Simon Fraser University, Burnaby
January 2015 – August 2019
Mechatronic Systems Engineering

Technical Projects

Personal Website: <https://jackneng.github.io> (for additional information and projects)

E-Commerce Site

- Developed a web server and created crud methods for an e-commerce site to persist data to online database
- Implemented user authentication for customers with the use of Spring Security and JWT token provider
- Designed a single-page website for customers to do shopping online with pagination and sorting on client side
- Created a database to store all the products, customer, and cart data with MySQL and Amazon RDS service
- Utilized: Java Spring Boot, Spring Security, JWT, JavaScript, React, MySQL, MySQL Workbench, AWS RDS

Menu Hosting Service

- Developed a web server for restaurants to post their happy hour/special menus online using Python Django
- Created a user authentication for restaurant to register and login with the use of Python Knox framework
- Designed a user friendly website for people to check out the restaurants' menus and contact info using JavaScript React, Redux and Axios frameworks
- Utilized: Python Django, Django REST, Knox, JavaScript React, Redux, Axios, SQLite

iPark IOT Parking System

- Designed the electrical structures of a scalable sensor-indicator circuit with limited pins of GPIOs on NodeMCU
- Developed an embedded Arduino program to transfer ultrasonic sensor data and signal LEDs
- Integrated the embedded program with the Firebase API to transfer real-time data between the microcontroller and the web app created with JavaScript React
- Utilized: NodeMCU, Arduino, sensors & actuators, JavaScript React

Real-Time and Embedded Control Systems

- Utilized the I2C protocol to interface and transfer the gyroscope and accelerometer data to the Tiva C microcontroller
- Converted the sensor raw data to angle and to adjust the PWM output signals to control the speed of motors through a H-bridge motor driver
- Automated the motors of the self-balancing robot using control loop feedback system and made use of the PID algorithm to increase the response time and eliminate the steady state error
- Utilized: C, I2C protocol, Tiva C microcontroller, H-bridge, PID controller

Skills

Software: (proficient): Python, JavaScript, Git, Embedded system (familiar): Java, C/C++, SQL, Algorithms & Data Structures