Michael DaRocha

4B Computer Science, University of Waterloo

1michael.darocha@gmail.com

(647)-638-2991

www.michaeldarocha.com

Skills

Languages: HTML • CSS • JavaScript • SQL • Python • Java • TypeScript • Bash • C# • C++ • C

Technologies: Angular • React • Redux • Bootstrap • Express • PostgreSQL • MySQL • .NET

Infrastructure: Docker • Azure • AWS • Git • GitHub Actions

Experience

Data Science & Advance Analytics Co-op

TD Banking Group

September 2022 – December 2022

- Planned and developed a React based web application used for project tracking
    - Implemented frontend utilizing React, Redux, Bootstrap, and Recharts
        - Utilized Axios and Redux middleware for fetching project data via HTTP requests
        - Used Redux Toolkit to define the store, slices and reducers for state storage
        - Ensured mobile friendly user interface by utilizing Bootstrap's grid system
        - Used components from Bootstrap and Recharts to display project data
    - Implemented REST API utilizing Node.js, Express and mysql2
        - Implemented CRUD operations for project data manipulation
        - Created a connection pool for faster response times
        - Designed REST API utilizing MVC architectural design pattern
    - Implemented database utilizing MySQL
        - Wrote SQL scripts for database initialization
        - Designed database utilizing Microsoft Visio
- Assisted with the development and modernization of an internal Angular web application
    - Updated various web components utilizing HTML, CSS and Typescript
    - Improved efficiency of Java based backend code for faster querying of MongoDB
    - Updated database schema utilizing the Mongoose library
    - Utilized commands to edit MongoDB data to reflect organizational structure changes
- Gathered, analyzed and summarized data utilizing Anaconda Python and Jupyter Notebook
    - Utilized the Pandas library to group, merge and calculated statistics for email data
    - Constructed a decision tree based on Excel email data utilizing Pandas and NumPy
- Constructed a calendar scheduling application utilizing Confluence
    - Used HTML, CSS, JavaScript, and jQuery for implementation of UI and behaviour
    - Implemented handlers for making AJAX calls to a REST API for calendar event deletion

Co-op Analyst – Systems Engineering

Toyota Motor Manufacturing Canada

September 2021 – March 2022

- Lead developer for web application used to generate internal delivery lists
    - Planned and designed application following Agile development practices
    - Created mockups for web application using Balsamiq
    - Designed and implemented SQL scripts to generate Postgres database used for storing delivery list data. Ensured design complied with 3NF
    - Created ASP.NET Core middleware used for communication between Angular and Postgres. Defined necessary CORS policies
    - Implemented various Angular components and services for displaying of webpages and communicating with middleware. Used the library PrimeNG
    - Prevented race conditions caused by database updates via Angular callback functions
    - Created documentation outlining important definitions and functionalities of the project
- Assisted with the debugging and improvement of various inhouse applications
    - Fixed UI bugs using HTML, CSS, and JavaScript
    - Used jQuery library to implement a combo box to improve UI usability
    - Created Azure pipelines, GitHub actions and Dockerfiles
    - Built a scheduler within a Spring Boot application for file deletion
- Designed Power BI database using star schema to generate reports for Azure work items
    - Worked with Azure DevOps Services REST API to extract work item data
    - Provided training and guidance to the co-op student who took over this project
- Debugged and improved Python script used to detect defects with machine learning
    - Worked with raspberry pi camera module to ensure sufficient image quality
    - Added additional functionality allowing for video footage to be fed into a Darknet neural network using the OpenCV module
- Researched and compared Azure and GitHub pipeline technologies. Presented findings to upper management using nontechnical language

Engineering Undergraduate Research Assistant - Blockchain Application Developer

University of Waterloo

January 2021 – April 2021

- Assisted in creating an online Blockchain based voting system
- Implemented Shamir's Secret Sharing algorithm for use in vote casting within the application
- Generated pseudo-random prime numbers utilizing OpenSSL
- Wrote Bash scripts used for RSA encryption and decryption of voter data
- Implemented data structure utilized for storage of large unsigned numbers.

Education

Candidate for Bachelor of Computer Science, Honours Co-Op, University of Waterloo, Waterloo, ON, September 2018 – present. Expected graduation date: May, 2023.