

David Wang

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LANGUAGES: C++, C, TypeScript, JavaScript, Python, Java, HTML/CSS, SQL
TECHNOLOGIES: React, Node, Express, AWS, Azure, Dash, TensorFlow

WORK EXPERIENCE

FULL STACK DEVELOPER | ALCUMUS

Jan 2022 – Apr 2022 | Toronto, ON

- Integrated NX build system to reduce latency of pre-commit hooks by ~**88%** to save developer time
- Implemented password update flow for individual user accounts using Azure AD B2C custom policies
- Bolstered security of API endpoints by introducing conflict handling to prevent data collisions

IOT SOFTWARE DEVELOPER | MICROGREEN SOLAR

May 2021 – Aug 2021 | Richmond Hill, ON

- Built React app used by **1000+ monthly** customers for remote monitoring and control of off-grid solar systems
- Automated real-time data reception, created overlaying plots, and powered a registration service with AWS Lambda
- Designed GUI for customers to configure solar power generator when away from home using Material UI and MQTT

DATA ANALYTICS DEVELOPER | SOLARA DATA

Sep 2020 – Dec 2020 | Winnipeg, MB

- Created real time forecasts and anomaly detection capabilities with the ARIMA model and the Facebook Prophet library
- Built a Python application to analyze lake data from IoT sensors for sustainable development research
- Developed a UART driver in C for the MSP430 microcontroller that reads satellite data to locate users in remote locations

IT OPERATIONS ANALYST | COMPUGEN INC.

Jan 2020 – Apr 2020 | Richmond Hill, ON

- Maintained health of servers by monitoring and investigating alert history, regularity, and time elapsed
- Analyzed trends in backup job failures to mitigate future instances by accessing client cloud servers using RDP

EXTRACURRICULARS & PROJECTS

FIRMWARE DEVELOPER | WATERLOO AERIAL ROBOTICS GROUP

- Developed interchip communication of sensor fusion data to facilitate PID tuning of aircraft position
- Calibrated and configured magnetometer on BMX160 IMU for position and attitude calculations
- Wrote and integrated ultrasonic driver for takeoff and landing capabilities

SPACEAPPS HACKATHON | 1ST PLACE

- Created machine learning program in Python that predicts forest fires globally using provided CSA datasets
- Visualized a Real-time Choropleth map of carbon monoxide using the Cartopy library

OPENBOT ONLINE

- Built a miniature car that can be remotely controlled anywhere through a React webpage
- Utilized I2C communication, the MQTT IoT messaging protocol, Arduino, and Raspberry Pi

ULTRASONIC RADAR

- Developed a graphical user interface that visualizes objects detected by a semicircular radar
- Utilized the UART protocol, object oriented programming, and string buffering through the serial monitor
- Built with the Processing IDE, Ultrasonic Sensor (HC-SR04), and Arduino Uno

EDUCATION

UNIVERSITY OF WATERLOO | BSc IN COMPUTER ENGINEERING

Sep 2019 - May 2024 | Waterloo, ON

- Algorithms and Data Structures (C++), Systems Programming & Concurrency (C), Real-time Operating Systems (C), Fundamentals of Programming (C++), Database Systems, Computer Networks, Embedded Microprocessor Systems