

# MUHAMMAD SHAH

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## EDUCATION

### UNIVERSITY OF WATERLOO

Bachelor of Applied Science Computer Engineering

Coursework: Distributed Computing, Computer Security, Real-Time Operating Systems, Data Structures & Algorithms, Database Systems

Sept. 2017 - May 2022

## SKILLS

**LANGUAGES AND FRAMEWORKS:** C/C++, C#, Python, JavaScript, Java, SQL

**TECHNOLOGIES:** Node.js, React/Redux, ASP.Net, Angular, Firebase, MySQL, AWS, Redis, Selenium, Flask, Kafka, Thrift, Spark, Zookeeper, Azure

**TOOLS:** Git, Docker, Ansible, Jenkins, JMeter, Maven, SVN, Elasticsearch

## EXPERIENCE

### Dealer-FX, *Full Stack Software Developer Intern*

Sept. 2020 - Dec. 2020

- Implemented front-end UI components that streamlined vehicle identification and registration for a major web app using .NET Core and Azure AppService
- Developed REST APIs connecting to microservices for several new backend components for vehicle and user transactions
- Programmed API Health Check endpoints using C# for testing operational status of microservices and RESTful APIs
- Investigated database bug for malformed vehicle data and implemented MySQL script that queried and joined table to correct table entries for +1000 vehicle data entries
- Designed JMeter load tests for scaling API endpoints to cut back Azure Cloud server cost by 10%

### Extreme Networks, *Wireless Software Developer Intern*

Jan. 2020 - Apr. 2020

- Built wireless access point analysis app in Python that provided performance metrics and tracked downtime of wireless access points as well as implemented system that automated the container-orchestration of the application using Docker
- Integrated Pinpoint Application Performance Management tool to monitor process resource load usage across entire application system architecture
- Developed Python script to tail log files of APs to Redis Server using PubSub pattern for fast messaging between APs and Server
- Supported AWS EC2 instances and test suite using Python, Ansible, and Jenkins by updating scripts and code to run 20% faster

### CGI Inc., *DevOps Engineering Intern*

May 2019 - Aug. 2019

- Developed internal reports tool with Python, MySQL, and Grafana that fetched REST API data to track group and individual activity which reduced weekly meeting time by 2 hours each week
- Automated code deployments and AKS server environment deployments by writing Infrastructure as Code using Ansible, Docker and Azure Container Instances
- Supported several apps by creating pipelines with code quality checks and automated testing

### ADP, *Software Developer Intern*

Sept. 2018 - Dec. 2018

- Devised an automatic testing framework using Selenium for testing over 10+ web apps that was key to modernizing testing practices
- Optimized complete end to end testing with email MSTest report for several apps, cutting testing time by 75%
- Automated 3-stage pipelines for apps processes using Jenkins, Groovy and Powershell

### Cedarbrae Medical Center, *Software Developer Intern*

Jan. 2018 - Apr. 2018

- Designed a WordPress website using tools in PHP, JavaScript, Bootstrap and CSS
- Scaled a clinic's computer network by 30 client nodes by securely creating subnetworks for the client

## PROJECTS

### FoodSnap | React Native, Node.js, Firebase, TensorFlow JS

- Designed mobile application aimed at reducing food waste by posting information to different slack groups
- Implemented user authentication backend using Firebase and designed UI of the mobile application and deployed using Expo and Heroku

### Real Time Operating System on De1-SoC board

- Collaboratively programmed and designed a single-core RTOS for a De1-SoC board with ARM and C
- Implemented functionality of memory allocation, IPC, and MLQ for priority-based and real-time system scheduling

### Bicycle Sensor Microcontroller | C, Diptrace, TI MSP430

- Collaboratively engineered PCB and MCU for an object collision detection system to warn riders of oncoming traffic