SYED WAJIH RIZVI

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University of Waterloo | B.A.Sc. in Mechanical Engineering with Minor in Computing | Class of 2023

PROFESSIONAL SUMMARY

Full-Stack developer with experience building scalable applications using React, Typescript, NodeJS, and MongoDB. Proficient in designing RESTful APIs, implementing responsive front-end components, and optimizing backend services for performance. Adept at leveraging Python for automation testing, ensuring reliable and efficient software solutions.

WORK EXPERIENCE

Ford Motor Company | Lead Software Automation Engineer *2023-Present | Kanata, ON*

- Developed hundreds of test cases using **Python's Slash Testing Framework** that adhered to software release requirements
- Streamlined and developed the test automation of multiple components through functional, integration, and hardware tests
- Refactored and structured scalable code following proper **Object Oriented** paradigms
- Maintained a component code coverage of over **90%** and a branch coverage of over **95%** on all product code
- Provided **100% rainy day** coverage across all testing requirements
- Reduced code duplication to **under 2%** across all managed repositories using SonarQube
- Interacted with **Linux** via **UbuntuVM** from a Window's Host to simulate a vehicle environment to execute tests
- Worked with **ara.Com** library to utilize proxies in test cases as well as mock skeletons to perform several test scenarios
- Managed test case information and tracked results with **TestRails** and followed appropriate defect lifecycle using **JIRA**

Ford Motor Company | Embedded Bluetooth Software Automation Engineer *2021-2023 | Waterloo, ON*

- Developed test cases that covered various Bluetooth protocols using **Python's Slash Testing Framework**
- Programmed unit tests in Python to mock several API calls and ensure a minimum **90%** code coverage
- Optimized Jenkin nodes to improve Sanity run time by nearly **28%**
- Developed APIs and CLI tools that provide several text analysis methods for log files
- Debugged automation scripts through log files, breakpoints, and GUI inspection
- Utilized **Appium** to conduct automation tests and analyze **android** applications
- Performed version management using Git Bash and contributed to company's Continuous Integration Pipelines

RECENT PROJECTS

GameCom | *Typescript, React, NodeJS, MongoDB* *2025*

- Built website providing detailed information on **millions** of video games using **React TypeScript, Node.js**, and **MongoDB**
- Configured several API endpoints using **Express.js** to handle **CRUD operations**, reducing response time by over **70%**
- Connected backend to MongoDB, optimized database queries with Mongoose, and utilized asynchronous queries for speed
- Utilized React Query to implement **infinite queries**, cache API responses, and reduce network usage by **90%**
- Designed and implemented fluid, responsive animations using **Framer Motion**, enhancing user engagement
- Developed custom query hooks for efficient data fetching from IGDB, resulting in real-time updates
- Implemented **JWT-based authentication** to secure restricted endpoints, preventing unauthorized access
- Utilized promises for server calls to implement asynchronous code

CScape | *Typescript, NodeJS, MongoDB, Python* *2024*

- Built a website that provides information on **millions of cities worldwide**, enabling users to plan customized tourist trips
- Integrated **Google Places API** to fetch data on destinations like restaurants, hotels, amusement parks, and more
- Developed reusable, highly performant React components using **MaterialUI,** ensuring a seamless user experience
- Implemented the **OpenWeather API** to display live weather data and 7-day forecasts for any city
- Utilized **Zustand** to manage global state efficiently, preventing prop drilling and improving component scalability
- Integrated **OpenAI's API** to dynamically generate city descriptions, enhancing user engagement with personalized content
- Designed a scalable MongoDB schema with optimized queries using Mongoose for fast and efficient data retrieval
- Implemented **JWT-based authentication** to secure user login and restrict access to certain CRUD operations
- Used **Google's Distance Matrix API** for an optimized **Traveling Salesman algorithm**, reducing travel time and distance
- Developed a responsive layout compatible with mobile, tablet, and desktop devices, ensuring accessibility across platforms

iPhone 16 Showcase | *Typescript, HTML, CSS*

- Developed interactive iPhone models using **ThreeJS** which could be modified based on size, color, and variant
- Built Apple inspired video carousels with beautifully animated progress bars and proper control buttons
- Implemented several sections of the website including a navbar, hero, banner, action, and footer section
- Utilized **GSAP** to build seamless animations and transitions for visually appealing user interface
- Created responsive image component to display different images based on screen width

Autonomous Mecanum Wheeled Robot | Python, Linux, Raspberry PI, Excel *2023*

- Programmed an autonomous omni-directional robot using **Python** with **multiprocessing** for motor control, sensor data collection, and **localization**
- Developed algorithms to filter noisy data using statistical methods and implemented odometric models for navigation
- Applied **Object Oriented** design principles to create scalable clean code and utilized Git to manage project versions