Joshua Mac

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Technical Skills

Programming Languages: JavaScript, Python, C/C++, SQL (PostgreSQL, MongoDB), HTML, CSS, VB.NET
Frameworks and Tools: React, NodeJS, Flask, Selenium, Pytest, Docker

Experience

Software Engineer

TELUS | September 2024 – January 2025

TELUS | January 2023 – August 2023

- Designed and implemented Oasis, an integrated tool utilizing React and VB.NET, to streamline project organization, wireline management, and network operations at TELUS
- Leveraged Python libraries such as NumPy and Pandas to analyze and integrate real-time network operations data, monitoring wirelines and networks efficiency, identifying potential bottlenecks and presenting actionable insights to team
- Automated regression testing with Selenium, reducing manual testing efforts by 50% and improving defect detection rates by 40%

Full Stack Engineer

Mitsubishi | May 2022 – January 2023

- Developed and maintained the company's Component Tracking Tool application using React and Flask, enhancing component tracking and authentication for specific operators
- Streamlined testing for the Component Tracking Tool using Pytest, ensuring seamless integration across React and Flask components
- Conducted monthly updates on component performance by extracting data from Oracle database and presenting insights through Excel's advanced visualization for operators and clients

Projects

Traffic Violation Detection with Machine Learning and AI

- Deployed and deployed a robust machine learning pipeline utilizing YOLOv5 for speed sign detection and a ResNet-18 model for speed zone classification. Integrated the system into real-world camera footage, effectively detecting speed signs and assisting in monitoring and regulating vehicle speeds
- Collected and augmented a collection of images using a GAN model to produce 8000 images, implementing data cleaning and preprocessing procedures to ensure dataset quality

Movie Recommender Application with RESTful API and Authentication

- Developed a full-stack movie recommendation application using React, NodeJS, Express and PostgreSQL, creating a scalable backend with a well-optimized database schema to handle user data and a responsive frontend with real-time suggestions
- Integrated The Movie Database API (TMDB) to create a dynamic recommendation engine with real-time data processing and filtering

Education

Queen's University, Kingston, ON
Bachelor of Applied Science, Computer Engineering

- **Relevant Courses**: Data structures, Object Oriented Programming, Fundamentals of Software Engineering, Algorithms, Computer Vision, Machine Learning and Deep Learning, Engineering Design and Practice