Shahzabe Mahmood . Jarvis Consulting

I am a dedicated and detail-oriented Software Engineer with a Bachelor's degree in Software Engineering from Ontario Tech University. With hands-on experience in full-stack development, DevOps engineering, and database management, I am passionate about creating scalable and reliable software solutions. My experience spans across various projects, including automated testing frameworks, cloud services, and AI applications. I thrive in dynamic environments, leveraging Agile methodologies to deliver robust software solutions. I am particularly excited about using cutting-edge technology to solve real-world challenges and continuously improving my skills in the software industry.

Skills

Proficient: Python, Java, Cloud Engineering (AWS, GCP & Azure), Linux/Bash, RDBMS/SQL, Agile/Scrum, Git, Spark

Competent: JavaScript, Docker/Kubernetes, Automation Engineering (UiPath & Google App Scripts), Frontend Development (React, HTML/CSS), DevOps (CI/CD, Jenkins, GitLab CI)

Familiar: Web3/Blockchain, Artifical Intelligence Frameworks, PowerShell, ROS2/Autoware, C++

Jarvis Projects

Project source code: https://github.com/jarviscanada/jarvis_data_eng_ShahzabeMahmood

Cluster Monitoring System [GitHub]: Developed a Linux Cluster Monitoring tool to collect and track hardware specs and resource usage data from multiple nodes. Utilized Bash for scripting, Docker for PostgreSQL containerization, and Git for version control. Implemented two key scripts, host_info.sh for capturing static hardware information and host_usage.sh for real-time monitoring of CPU and memory usage. Designed to support cluster performance management and resource optimization for future planning.

Stock Quote Application [GitHub]: Engineered Developed a terminal-based Stock Quote App that simulates stock trading by integrating real-time and historical market data from the Alpha Vantage API. The app supports CRUD operations for stock quotes and user positions, using JDBC for database interaction with PostgreSQL, Maven for build automation, and Docker for containerization. The project follows the DAO and Repository design patterns, ensuring modularity and scalability by abstracting database access and enabling easy technology swaps. The app is tested with JUnit and Mockito for unit and integration tests, ensuring proper functionality and data integrity across database transactions. This solution is scalable, maintainable, and easily deployable.

Core Java - Grep App [GitHub]: Developed a high-performance, Java-based file search application inspired by the Linux grep command, designed for efficient pattern matching using Java Streams, file I/O, and regular expressions. Refactored the initial design to optimize memory usage with Java Streams' lazy evaluation, allowing on-demand processing and reducing memory overhead, enhancing scalability for larger datasets. Containerized the application with Docker for streamlined, cross-environment deployment, available on Docker Hub. Validated functionality with Java Unit Testing to ensure reliability and performance, making the application robust, lightweight, and deployable in diverse environments.

Python Data Analytics [GitHub]: Developed a data analytics pipeline to analyze transactional data for a UK-based online giftware retailer, leveraging Python, Pandas, NumPy, and Matplotlib to extract insights on sales trends, customer behavior, and marketing optimization. Conducted data cleaning, feature engineering, and exploratory data analysis (EDA) to identify revenue fluctuations, customer retention patterns, and seasonal sales trends. Implemented RFM (Recency, Frequency, Monetary) analysis for customer segmentation, classifying users into groups such as "Loyal Customers" and "At Risk" to enhance targeted marketing strategies. Ensured data integrity, visualization accuracy, and code modularity, delivering a reproducible and scalable analysis documented in Jupyter Notebook and deployed via GitHub.

Spark [GitHub]: Analyzed the World Development Indicators (WDI) and retail datasets using Zeppelin notebooks on Google Cloud Platform's Dataproc and Azure Databricks, respectively. Leveraged PySpark to efficiently process large-scale distributed data. For the WDI dataset, extracted key economic metrics such as GDP per country. For the retail dataset, analyzed critical sales insights, including total revenue, sales growth trends, and new monthly users, to inform business growth strategies.

Hadoop [GitHub]: Designed and implemented a scalable big data processing solution on Google Cloud Platform (GCP) using Dataproc. Integrated Apache Zeppelin for interactive analytics and leveraged the Hive interpreter for SQL-based querying on distributed datasets. This solution supports enterprise-level real-time analytics and efficient data processing.

Highlighted Projects

GameKnight - Video Game Library [GitHub]: Developed an application called GameKnight which is a game library web application that can store and manage a game library across different platforms. The application lets gamers filter their game libraries to find and remember games from their past and find the games they want to play in the future. The application is powered using Django and connects to a backend database which can be configured in the settings. MariaDB/MySQL was used in application testing, however other databases should work if connected to Django in settings.

Autonomous Vehicle Cruise Control: Engineered advanced autonomous vehicle software using the ROS2/Autoware stack, integrating cutting-edge machine learning algorithms to enhance system intelligence and decision-making capabilities. Developed a high-performance AI model that leveraged LiDAR sensors and depth cameras for real-time object detection, distance estimation, and environmental awareness. Optimized project workflows through Git-based version control and employed a Kanban board to ensure seamless collaboration, version management, and timely project execution within the simulation environment..

Professional Experiences

Software Developer, Jarvis (Sept 2024-present): As a Software Engineer at Jarvis Consulting, I contribute to the development of scalable software solutions, utilizing technologies such as Python, Java, cloud platforms (AWS, GCP, Azure), and Linux. I work on full-stack development, DevOps, and database management, delivering robust applications that follow best practices in modularity and maintainability. I collaborate with cross-functional teams to implement Agile methodologies and CI/CD pipelines, ensuring efficient and scalable software delivery. My work is focused on creating efficient, high-performance systems with a strong emphasis on testing and quality assurance.

Software Engnieering Intern, PwC (PricewaterhouseCoopers) (May 2022 - September 2023): Conducted systematic testing and analysis, utilizing testing methodologies and frameworks, on weekly software releases within a firm-wide digital asset repository to identify and rectify bugs and ensure software quality. Facilitated over 30 internal technical training sessions to upskill the team in software engineering, with a focus on UiPath, Python, Google Scripts, Alteryx, and PowerBI, enhancing their ability to develop and maintain software solutions. Implemented Agile methodologies, contributing to sprint planning, daily stand-ups, and the timely delivery of product increments. Managed relational databases, optimizing performance through SQL and overseeing database migrations for enhanced system efficiency.

Education

Ontario Tech University (2019-2024), Bachelor of Engineering (Honours), Software Engineering - Dean's List (2020) - Dean's List (2021) - Dean's List (2022) - Dean's List (2024)

Miscellaneous

- AWS Certified Cloud Practitioner (May 2024)
- AWS Knowledge: Cloud Esstentials (April 2024)
- Dog Trainer
- Fitness & Strength Coach
- Competitive gaming