Hrishabh Mahaju

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SUMMARY

I am a Data Science graduate student at the University of New Haven, CT, with over two years of experience in software engineering. Experienced in web development, data engineering, software optimization, and research, I have hands-on experience with production-level real-time projects involving large-scale data. I am passionate about developing solutions that integrate software engineering, data analysis, data engineering, machine learning, and visualization to help organizations unlock the full potential of their data.

EDUCATION

University of New Haven - Tagliatela College of Engineering **West Haven, CT**
Master of Science in Data Science *Aug 2024- May 2026*
Coursework: Python Programming, Algorithms, Math for Data Scientists, Intro to AI, Machine Learning, Distributed and Scalable Data Engineering with AWS, Natural Language Processing, Deep Learning, Computer Vision, Power BI.

Pokhara University - Cosmos College of Management and Technology **Lalitpur, Nepal**
Bachelor's in Computer Engineering *Sept 2016 - July 2022*
*Coursework: Data Structures and Algorithms, Object Oriented Programming with C++, Computer Networks, Artificial Intelligence (**AI**), Discrete Mathematics, Data Communication and Networking, Java Programming, Web Programming, Database Management System, Software Project Management, Data Mining and Warehousing*

SKILLS

- ***Languages:*** *Python, JAVA, JavaScript, Typescript, SQL*
- ***Frameworks:*** *Pandas, Numpy, Scikit-Learn, NLTK, PyTorch, Tensorflow,* Keras, *OpenCV*
- ***Web-Frameworks:*** *Spring Boot, Django, Flask, Angular, ReactJS, NextJS, NodeJS*
- ***Database & Cloud:*** *Firebase, MongoDB, MySQL, AWS*
- ***Design & Tools:*** *Power BI, ggplot2, Seaborn, Excel, Photoshop, Canva, Lightroom*
- ***Version Control:*** *Git/GitHub, GitLab*

WORK EXPERIENCE

YCO Pvt. Ltd., Nepal Stock Exchange (NEPSE) Project **Kathmandu, Nepal**
Software Development Engineer in Test *Jun 2023 - Jun 2024*
Technology Used: ***Python, Selenium, JMeter, Bash Scripting, Burp Suite, Postman, Excel, SharePoint, Scrum***

- **Managed and optimized** the **Fund Management System and Trade Management System (microservices-based application)**, ensuring **high availability, scalability, and security**, while leading **technical discussions**, coordinating **cross-functional teams**, and serving as the key liaison between **development, QA,** and **business stakeholders** to align technical solutions with business objectives.
- Assumed **product ownership responsibilities**, driving **feature enhancements**, prioritizing **backlogs**, and aligning development with business needs.
- Contributed to **software architecture design, API integrations, and system optimizations** for **high-frequency trading operations.**
- Improved **software performance by 50%** through **comprehensive functionality, performance, and regression testing**, identifying and resolving issues throughout the **software development lifecycle (SDLC)**.
- Participated in **design reviews and risk assessments**, identifying potential **quality issues** and recommending improvements, resulting in increased product robustness.
- Conducted **root cause analysis (RCA)** investigations for defects and issues, providing **actionable solutions** and preventing future occurrences.

Associate Software Development Engineer | Project Trainee |Intern *Oct 2021 - May 2023*
Technology Used: ***Java, Spring Boot, Angular, MSSQL, Redis, Docker, Birt Reporting, Jasper***

- **Applied High Availability (HA) architecture** to the **NEPSE Website**, implementing a **multi-server communication solution** using **Spring Boot**, improving **system reliability and user engagement by 30%** in a **high-traffic** environment.
- **Refactored and optimized the Role-Based Access Control (RBAC) logic** for the **NEPSE Website (**www.nepalstock.com**)** to enhance security and user management.

- **Designed and optimized SQL stored procedures,** enabling efficient **data retrieval, API development, and integration** for real-time user-facing applications.
- Implemented **caching mechanisms** using **Redis**, reducing database load and improving response times for frequently accessed data.
- Worked on **microservices-based architecture**, gaining expertise in **broadcast, multicast communication patterns**, and **inter-service messaging** for **scalability** and **fault tolerance**.
- **Containerized** and **deployed** services using **Docker**, enhancing portability, scalability, and deployment efficiency across different environments.
- **Developed and customized** reports using **BIRT** and **Jasper Reporting**, enabling comprehensive data visualization and business analytics for stakeholders.

Motorable Local Roads Bridge Program (MLRBP) **Lalitpur, Nepal**
Freelance Web Developer *Apr 2024 - May 2024*
Technology Used: ***ReactJS, React-Leaflet, NextJS, GeoJSON, MariaDB, Docker, MsExcel***
Website: https://webmap.lrbpnepal.org

- **Led the design and development** of the **interactive website** for the **Motorable Local Roads Bridge Program (MLRBP)**, enabling visualization of completed and ongoing bridge projects across Nepal**.**
- **Implemented dynamic mapping features** using the **React-Leaflet** library and **GeoJSON**, allowing users to interactively view bridge locations and project progress on an intuitive map interface.
- **Directed data management efforts**, including **data cleaning, schema creation**, and **organization of thousands of bridge-related data records** for optimal display and filtering.
- **Developed and optimized backend services** with **MariaDB**, designing efficient **database schemas** to handle large datasets and ensuring fast query responses for real-time data updates.
- **Containerized the application** with **Docker**, streamlining deployment and ensuring consistency across development, testing, and production environments.
- **Collaborated with stakeholders** to define project requirements and ensured the website aligned with the goals of the **MLRBP** to improve local infrastructure visibility.
- **Utilized MS Excel** for preliminary data analysis, cleaning, and transformation before integrating into the website.

ACADEMIC PROJECTS

Real-Time Website Traffic Analytics Using Distributed and Scalable AWS Cloud Services | University of New Haven

- Implemented a real-time data engineering pipeline designed to simulate and analyze website traffic logs using cloud-native technologies. Inspired by real-world software engineering practices, the pipeline demonstrates how log analysis can provide operational intelligence to support the Software Development Life Cycle (SDLC).

DocuMate: AI-Powered PDF Assistant with RAG | University of New Haven

- Developed a smart assistant using Large Language Models (LLMs) and Retrieval-Augmented Generation (RAG) to answer questions about uploaded PDF files. Users can interact via a conversational interface to get contextual, accurate responses from their documents.

N-Queens ML Challenge | University of New Haven

- Developed an interactive N-Queens puzzle game using machine learning and reinforcement learning, built with a focus on AI-powered gameplay and smart difficulty scaling.

Alzheimer's Disease and Healthy Aging Data | University of New Haven

- Developed a data analysis project leveraging Python for trend analysis, confidence interval computation, and K-Means clustering on Alzheimer's Disease data from the BRFSS survey.

E-Health Care Chatbot with Mental Health Consultant using Decision Tree Algorithm| Cosmos College of Management and Technology

- Designed and developed an AI application that interacts with the user to predict the disease and recommend possible treatment after a series of yes/no questions with the help of Decision Tree Algorithm with Python.