

# MALHAR SHAH

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## WORK EXPERIENCE

### IBM – Software Developer

May 2023 – Present

Java, Python, Docker, OpenShift

- Orchestrated the development and testing for new **LTPA cookie** features in **WebSphere Application Server (WAS)**, driving a **20% enhancement** in authentication efficiency.
- Strengthened the security infrastructure of WAS Liberty Servers by refining implementations of **Kerberos** and **SPNEGO** protocols, effectively mitigating potential vulnerabilities and ensuring robust authentication processes.
- Proactively identified and resolved **> 150 build breaks** and **defects**, ensuring uninterrupted operation and bolstering system reliability.

### IBM – Backend Developer Intern

May 2021 – Apr 2023

Java, Python, Docker, Kubernetes, OpenShift, MySQL

- Engineered internal developer tools/applications utilized by **300+ WAS engineers**, streamlining processes and amplifying productivity.
- Deployed **Docker** containerized WAS applications on Red Hat **OpenShift**, substantially boosting system availability and leading to a **65% reduction** in service downtime.
- Migrated **microservices** to **Kubernetes clusters**, optimizing container orchestration **efficiency** and overall system management.
- Implemented a **computer vision** hand gesture recognition system for rover control using **OpenCV** achieving **> 90% accuracy**.
- Showcased IBM's latest products at the DevNexus Java developer conference, delivering insights and fostering industry collaboration.

### MeshMD Inc – Software Quality Assurance Intern

May 2020 – Aug 2020

Java, Selenium, TestNG

- Streamlined SDLC by **15%** via an automated testing process, facilitating efficient identification and prioritization of defects/bugs.
- Created and executed **> 500 test cases**, procedures, and test plans leading to improved application performance and experience.
- Identified workflow issues and resolved **> 200 defects** through systematic software testing, including penetration and negative testing.

## EDUCATION

### University of Toronto – B.A.Sc. in Computer Engineering & Minor in Artificial Intelligence

Sep 2018 – Apr 2023

- Relevant Coursework:** Software Engineering, Operating Systems, Computer Security, Computer Networks, Intro. to Machine Learning, AI Fundamentals, Data Structures & Algorithms, Databases

## PROJECTS & AWARDS

### Speech Evaluation Web Application – Hack the North 2022

Sep 2022

Python, Flask, JavaScript, React

- Employed a **generative NLP model** along with image and audio processing tools to analyze live speech metrics, offering personalized actionable feedback for enhancing the user's presentation.
- Instituted **topic extraction** and abstractive **content summarization** with a **75% success** rate using Cohere's **semantic search** model, enabling the identification of key ideas and detection of improper speech patterns.
- Implemented eye tracking and **sentiment analysis** capabilities with **> 81% accuracy** via **TensorFlow** to measure engagement levels.

### Vaccine Distribution Prioritization Tool – Hack the North 2020++ (Vonage API Challenge Winner)

Jan 2021

Python, JavaScript, Node, Express, React

- Processed patients' health data using **Pandas** and **Sklearn** to prioritize vaccination based on risk levels with an **accuracy** of **86%**.
- Launched and configured a live database using the **Droptbase API** and established communication with patients via the **Vonage API**.

### Fraudulent Transaction Detection Web Application – DeltaHacks VI (Best Finance Hack)

Jan 2020

Python, Flask, HTML, CSS, Bootstrap

- Utilized the **scikit-learn** library to train a machine learning model for detecting potentially fraudulent transactions, achieving an **accuracy** of **> 85%** with a public dataset of users' previous banking history.
- Stored user transactions in a **MongoDB** database and gathered new verified transactions to revise and augment the performance.

## SKILLS

- Languages:** Java, C++, Python, JavaScript, TypeScript, C, SQL, GraphQL
- Frameworks:** Flask, TensorFlow, PyTorch, Scikit-learn, Pandas, Node.js, React, Express
- Technology/Tools:** Git, Docker, Kubernetes, OpenShift, MongoDB, PostgreSQL, MySQL, NLTK, Firebase, AWS, Selenium, TestNG, MATLAB, Prometheus, Android Studio, GDB

## LEADERSHIP

### University of Toronto Machine Intelligence Student Team – External Associate

Sep 2019 – Apr 2020

- Collaborated with AI and Machine Learning industry leaders to deliver insightful presentations for **3** student conferences

### Volunteer Engineering Experience Program – Project Management Team Member

Sep 2018 – Apr 2019

- Conducted analytical research at storage facilities and executed sustainable warehouse floor plans.
- Contributed to **20%** dead space **reduction** and upgraded productivity via layout planning methods using **MATLAB** and SketchUp.