

# Viraj Mavani

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## SYNOPSIS

AI & Data Science Professional with a Master's in CS (AI Specialization) and expertise in Python, SQL, and Machine Learning. Proven track record in developing complex data acquisition pipelines through advanced web scraping and reverse engineering. Specialized in leveraging AWS/Azure cloud services for scalable data processing and deploying automated AI solutions.

## EDUCATION

**WESTERN UNIVERSITY, ON, CA | M.SC. IN COMPUTER SCIENCE (AI SPECIALIZATION)** | GPA: 3.58/4.0    **SEPT 2024 – SEPT 2025**  
**ATMIYA UNIVERSITY, IN | B.TECH. IN COMPUTER ENGINEERING** | GPA: 3.62/4.0    **JULY 2019 – APR 2023**

## SKILLS AND KNOWLEDGE

**Languages:** Python (Primary), SQL, Java, C#, JavaScript, VBA, HTML/CSS  
**Data Science & AI:** Machine Learning (Regression, Classification, Clustering), LLM, NLP, Deep Learning, Computer Vision  
**Libraries:** Pandas, NumPy, Scikit-learn, TensorFlow/PyTorch, Matplotlib, Seaborn  
**Data Engineering:** Web Scraping (Selenium, Scrapy, BeautifulSoup), ETL Pipelines, Data Mining  
**Cloud & Tools:** AWS (Lambda), Azure, Docker, Tableau/PowerBI, CI/CD, Git, Jira

## WORK EXPERIENCE

**WESTERN UNIVERSITY, London, ON | Graduate Teaching Assistant**    **Jan 2025 – Apr 2025**

- Mentored 200+ students in "CS2034b– Data Analytics: Principles" delivering technical tutorials on Python, Pandas, and Machine Learning.
- Facilitated hands-on labs focused on EDA, data cleaning, and statistical modeling to ensure practical competency.
- Clarified complex analytics concepts, improving academic success and overall course satisfaction scores.

**DEXOC SOLUTIONS, Gujarat, India | Full Stack Developer**    **Sept 2023 – Jul 2024**

- Developed 15+ high-performance scraping systems using Python, extracting millions of data points for international client analytics; utilized reverse engineering techniques to bypass anti-scraping with 99.9% uptime.
- Architected end-to-end full-stack solutions using Python, .NET Core, and AngularJS, optimizing scalability for data-intensive web applications.
- Engineered AWS Lambda functions to automate data processing and storage, significantly improving cloud infrastructure and data pipeline efficiency.
- Collaborated in an Agile environment to deliver technical specifications, focusing on system reliability and data integrity.

**FSP MEDIA, Gujarat, India | Software Developer**    **Mar 2023 – Aug 2023**

- Designed and developed .NET-based backend applications for diverse industries, ensuring modular architecture and timely project delivery.
- Partnered with stakeholders to translate business requirements into technical specifications and functional solutions.
- Enhanced system reliability & code quality by implementing comprehensive unit testing and rigorous debugging protocols.

## PROJECTS

**Tomato Leaf Disease Detection** | Python, TensorFlow, ResNet50, CNN, Keras

- Developed a custom CNN achieving 96.3% test accuracy for tomato diseases; optimized for resource-constrained devices.
- Applied transfer learning via ResNet50 and data augmentation to improve model generalization and reduce overfitting.

**ML-Powered Taxi Fare Prediction** | LightGBM, Docker, XGBoost, Scikit-learn

- Implemented an ML-based prediction system using LightGBM, achieving an  $R^2$  score of 83.9%.
- Developed a Docker-based pipeline to automate data extraction from map images, streamlining the ingestion of travel features.

**Distributed Web Scraper (MPI)** | Python, mpi4py, CloudScraper, Distributed Computing

- Engineered a distributed scraper using MPI for parallelism to efficiently handle large-scale data extraction.
- Integrated modular scheduling and checkpointing to ensure high reliability and deduplication across multi-process runs.

## CERTIFICATES

**MACHINE LEARNING SPECIALIZATION** | STANFORD UNIVERSITY & DEEPLARNING.AI

- Includes: Supervised Learning, Advanced Learning Algorithms, and Unsupervised & Reinforcement Learning

**GENERATIVE AI WITH LARGE LANGUAGE MODELS** | AWS  
**NEURAL NETWORKS AND DEEP LEARNING** | DEEPLARNING.AI  
**PYTHON FOR EVERYBODY SPECIALIZATION** | UNIVERSITY OF MICHIGAN  
**Web Scraping in Python Certification** | Udemy