UMESH JADHAV

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OBJECTIVE

Software Developer with **2 years** of experience transitioning into **Data Science/Machine Learning roles**; recently completed **M.S. in C.S. focusing on Interactive Intelligence**. Demonstrated expertise in building end-to-end machine learning systems through multiple advanced projects in **financial forecasting, risk assessment, and explainable AI**, complemented by production software engineering & deployment experience.

SKILLS

ML/AI :	PyTorch, sklearn
Programming :	Python, Object oriented programming
Web Frameworks:	Flask, FastAPI
Database/Cloud :	MS SQL Server, Azure Storage
MLOps :	Docker, MLFlow, REST APIs, Git
Data Engineering :	Pandas, NumPy, D3.js

EDUCATION

Master of Computer Science, Georgia Institute of Technology, USA *Jan 2022 - Jul 2025*
Relevant Coursework: Machine Learning, Data Analysis & Visualization, Machine Learning for Trading, Database Systems & Design, Software Development Process.
CGPA : 3.63/4.00

Bachelor of Engineering (IT), VPPCOE & VA, University of Mumbai, IN *Jun 2015 - Oct 2020*
CGPA : 8.00/10.00

PROJECTS

Automated Loan Assessment System with Explainable AI (*Active Development*)
Python, FastAPI, sklearn, SQL Server, ASP.Net Core 9.0, Docker

- Developed full-stack loan assessment platform with **ASP.NET Core** frontend and **FastAPI** ML microservices for real-time risk prediction.
- Built a **data preprocessing pipeline** for automated data transformation, batch loading and feature engineering for model training using **unbalanced dataset**.
- Engineered ensemble ML models achieving **83% recall and 85% precision** using **Random Forest + SMOTE** hybrid sampling strategies.
- Implemented **SHAP explanations** for transparent decision-making and containerizing with **Docker for Azure deployment**.

Predicting S&P 500 Index using Ensemble Machine Learning (Try it here)
Python, Flask, NLP, Pytorch, sklearn, D3.js

- Developed a **Flask App** with **Voting-Based Ensemble forecasting model** combining Gradient Boosting, Random Forest, and RNN/LSTM to predict S&P 500 index movements(numeric data) based on macroeconomic indicators(numeric data), and news sentiment features(NLP).
- Optimized model weights using linear programming, **reducing forecast error rates by 20%** compared to standalone methods
- **Visualized** global index correlations and built dashboards (bivariate charts, sentiment vs % change, historical vs predicted) using **D3.js** to support explainability and decision-making.

Company Bankruptcy Prediction – Comparative Model Optimization (Complete Analysis here)
Python, PyTorch, sklearn, MLFlow

- Developed Proof of Concept **ANN models** with **dimensionality reduction** (PCA, ICA) and **clustering** (K-Means, EM) for bankruptcy risk assessment.
- **Optimized model performance by 20–27%** through ICA, and achieved **complete elimination of Type-II errors** using EM clustering over K-Means.
- Delivered a more accurate and reliable bankruptcy risk assessment framework, enhancing interpretability for financial decision-makers.

EXPERIENCE

Associate System Engineer, IBM India Pvt Ltd, Mumbai, IN *May 2022 - May 2024*
C#, ASP.NET Core, Entity Framework Core, SQL Server, Azure Storage, REST API

- **Developed data-intensive** ASP.NET applications, **optimizing transaction processing pipelines** and reducing wallet **recharge time by 60%**.
- Engineered document management systems using **Azure Blob Storage and SQL Server**, supporting VKYC onboarding for **500K+ customers**.
- Built **real-time monitoring with data visualization** using ASP.NET and jQuery, improving system **response time by 75%** through proactive issue detection.
- Maintained and enhanced **production web systems** handling financial transactions, improving system reliability and **customer retention by 25%**.
- Collaborated with **cross-functional teams** to participate in **full SDLC** and analyze requirements, implement scalable solutions and ensuring smooth functioning of the project.