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Professional Summary

Results-oriented Machine Learning Engineer and Data Analyst experienced in data preprocessing, model design, and deployment of production-grade ML pipelines. Strong grasp of data analysis, feature engineering, and model optimization using Python, Scikit-learn, TensorFlow, and XGBoost. Skilled in SQL, cloud integration, REST API development, and performance tuning. Proficient in C/C++, Java, Go, and Linux-based systems. Strong in DSA and OOP, with proven ability to build scalable, reliable, and explainable solutions across AI-driven systems.

Work Experience

- **Cognifyz Technologies** — Remote
  Machine Learning Engineer Intern — *Feb 2025 – Jul 2025*
  - **Model Development:** Designed ML models for restaurant rating prediction using Scikit-learn and Pandas; improved RMSE by 18% with advanced feature engineering and scaling.
  - **Classification Pipeline:** Trained Logistic Regression, Random Forest, and XGBoost classifiers achieving 89% accuracy via cross-validation and parameter optimization.
  - **Automation and Deployment:** Automated data preprocessing and model evaluation pipelines with REST API integration, reducing manual effort by 40% and improving response time by 25%.
  - **Collaboration and Workflow:** Applied Agile and version control using Git, JIRA, and CI/CD pipelines ensuring reproducible and efficient development cycles.

Projects

- **Anti-Money Laundering Detection System**
  Python, XGBoost, MEALPY, PSO, GWO, NumPy, Pandas, Matplotlib
  - **Model Implementation:** Analyzed 32 million transactions of IBM AML dataset and developed fraud detection model with imbalance handling (SMOTE) and categorical encoding.
  - **Optimization Algorithms:** Enhanced XGBoost with PSO and GWO optimizers improving precision by 20% and recall by 24%.
  - **Explainability and Compliance:** Used SHAP and LIME for model interpretation ensuring transparency for financial compliance teams.
  - **Production Deployment:** Deployed the containerized model through Docker with REST endpoints for real-time prediction and monitoring.
- **Concurrent Chat Application**
  Go, TCP/IP, Concurrency, Channels, Goroutines, Docker, Distributed Systems
  - **Scalable Architecture:** Built concurrent chat server handling 200+ simultaneous client connections using goroutines, channels, and event-driven message broadcasting.
  - **Latency Optimization:** Reduced end-to-end message latency by 30% through buffered channels, connection pooling, and efficient synchronization primitives.
  - **Fault Tolerance:** Implemented heartbeat checks and automatic reconnection flows achieving 99.9% uptime with graceful handling of dropped connections.
  - **Resource Efficiency:** Optimized CPU/memory consumption enabling stable multi-threaded performance on low-compute servers and edge-hosted environments.

Education

- **Madhav Institute of Technology & Science (MITS)** — Gwalior, MP
  B.Tech in Artificial Intelligence and Machine Learning — CGPA: 7.1/10 — *Nov 2021 – Jun 2025*

Technical Skills

- Programming: Python, C/C++, Java, Go, JavaScript/TypeScript, SQL, Bash
  ML AI: TensorFlow, PyTorch, Scikit-learn, XGBoost, NumPy, Pandas, OpenCV, MEALPY
  Development: REST APIs, Flask, React, gRPC, WebSockets, Redis, Database Design, API Integration
  DevOps Tools: Git, Docker, Linux, CI/CD, VSCode, Postman, JIRA, Cloud (AWS/GCP), Virtualization
  Concepts: Data Structures, Algorithms, OOP, System Design, OS, DBMS, CN, Data Preprocessing
  Additional: Data Visualization, Feature Selection, Model Monitoring, Optimization, Leadership, Teamwork

Achievements and Certifications

- **Problem Solving:** Solved 200+ algorithmic problems on LeetCode, GFG, and CodeStudio demonstrating analytical reasoning.
- **Certification:** Completed Blockchain and Its Applications (NPTEL, IIT Kharagpur) with verified certification.
- **Research Publication:** Submitted research paper – Dual-Stage Predictive Model for ICU Risk Stratification, ICSISCET 2025, Springer LNCS (Scopus Indexed)
- **Hackathons:** Ranked Top 10 among 80+ teams at MITS Hackathon 2024 for developing an AI-based decision automation tool.