aws certified Solutions Architect - Associate

Shreyas Shendge **AI / ML Engineer | Cloud Engineer**

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Professional Summary

AI/ML Engineer with 5 years of experience delivering **production-ready AI solutions** across enterprise systems. Specialized in **Python-based ML development**. Demonstrated success in improving model performance through **robust data preprocessing, feature selection.**Strong foundation in **backend engineering, databases, and cloud-ready system design**, combined with a Quality Analysis driven mindset to ensure **high reliability and scalability of AI systems**.

Professional Experience : **AI / ML Engineer | Cloud Engineer – Intelliswift**

Heart Attack Risk Prediction System **From 2021 - Present**

- Designed an end-to-end **predictive risk scoring system** to identify potential heart attack cases using structured clinical data.
- Strengthened data reliability through **advanced preprocessing, outlier treatment, and exploratory analysis**, improving signal quality.
- Benchmarked multiple classification approaches and identified a **boosted ensemble strategy** as the most effective for medical risk prediction.
- Enhanced sensitivity for high-risk patients by addressing **class imbalance and complex feature interactions**.
- Fine-tuned model parameters, resulting in a **~7 % improvement in overall prediction accuracy and recall**.
- Delivered a **real-time, clinician-friendly web application** enabling instant risk assessment and probability-based insights.

Lung Cancer Detection System

- Developed a **clinical decision-support model** to assist in early lung cancer risk identification from structured patient records.
- Applied **feature relevance analysis** to isolate high-impact medical indicators influencing diagnosis.
- Conducted comparative evaluation across multiple tree-based and linear models to identify the most robust learner.
- Achieved **~5 % accuracy improvement** by leveraging a gradient-boosted approach capable of modeling non-linear clinical patterns.
- Reduced false-negative predictions through targeted optimization, improving reliability for early-stage detection.
- Built an **interactive prediction interface** presenting confidence scores to support informed medical decisions.

Telecom Customer Churn Prediction System (QA → ML Transition Project)

- Architected a **customer churn intelligence system** to proactively identify at-risk telecom subscribers.
- Combined **ETL validation and QA expertise** with ML workflows to ensure clean, production-grade input data from SQL sources.
- Modeled churn behavior using **usage trends, recharge frequency, complaint history, and network KPIs**.
- Implemented an imbalance-aware learning strategy, achieving a **~8 % uplift in churn prediction accuracy** over baseline models.

- Automated **scheduled retraining pipelines** with pre-deployment validation checks to ensure model stability.
- Produced **customer-level churn probability scores**, enabling data-driven retention and marketing strategies.

. AI-Integrated Clinic Workflow System

- Designed and developed an **AI-integrated clinic** workflow platform handling patient, reception, and doctor roles.
- Integrated **Whisper and VOSK** for speech-to-text conversion without custom model training.
- Implemented AI-based summarization on transcribed text for clinical review.
- Built role-based workflows including verification queues, payments, follow-ups, discounts, and refunds.
- Designed structured local storage for audio files with metadata-based organization.
- Ensured system reliability through extensive **integration** and **end-to-end Validation**.

Product Sales Prediction System

- Built a machine learning–based **product sales prediction system** using supervised learning on historical retail sales data.
- Performed **data cleaning, feature engineering, and preprocessing** to capture seasonality, pricing impact, and demand trends.
- Engineered features such as **lagged sales, rolling averages, discounts, and time-based attributes** (month, weekday, festival).
- Trained and evaluated **Linear Regression, Random Forest Regressor, and XGBoost Regressor** models.
- Selected **Model** for its superior handling of non-linear relationships and complex feature interactions in sales data.
- Optimized model performance through **hyperparameter tuning**, reducing forecast error and improving demand accuracy.
- Deployed the trained model and visualized predictions through a **Streamlit dashboard** to support inventory and pricing decisions.

Helix (UK Loyalty Platform)

Helix is a customer engagement and loyalty platform supporting points, subscriptions, and payment services via credit cards, debit cards, and bank accounts. The system handles member enrollment, membership lifecycle management, and tier changes.

Core AI & Engineering Skills

Programming & Scripting:

- Python for machine learning, AI integration, backend development, and automation.

Machine Learning & Artificial Intelligence

- Experience with **Machine Learning** techniques for structured data analysis
- Built and evaluated **models** for prediction and decision-support use cases
- Applied **feature engineering, data preprocessing, and exploratory data** analysis (EDA) to improve model performance
- Performed **model evaluation and comparison** using standard metrics
- Optimized model accuracy using **data cleaning, feature selection, and tuning techniques**
- Hands-on experience with **performance metrics** including Accuracy, Precision, Recall, F1-Score, and Confusion Matrix

AI Model Integration & Language Processing

- Worked with **pre-trained AI models** such as Whisper and VOSK for audio-to-text conversion
- Applied **prompt engineering** techniques to control AI output structure and accuracy
- Understanding of **Large Language Model (LLM) fundamentals**

Databases & Data Engineering

- Worked extensively with **PostgreSQL and SQL** for relational data storage
- Performed **data validation and integrity checks** on backend systems
- Conducted **backend data verification** to ensure consistency and correctness
- Validated **ETL processes and data pipelines**
- Performed **database validation** for enterprise-grade systems

Frontend & Application Integration

- Developed user interfaces using **HTML, CSS, and JavaScript**
- Implemented **frontend–backend integration** for seamless data flow
- Built **dashboard-driven applications** for role-based visibility

Model Deployment & Visualization

- Deployed machine learning models using **Streamlit**
- Enabled **real-time inference** for interactive AI applications
- Developed **interactive data-driven applications** for end users

Quality Engineering & System Reliability

- Performed **integration, system, and regression validation**
- Conducted **end-to-end workflow validation** across AI and backend components
- Verified **AI outputs** for accuracy and reliability
- Ensured **production readiness** through structured testing and validation

Education

Bachelor of Engineering (Electronics & Telecommunication) Solapur University, Maharashtra

Enterprise Systems & Domain Experience

Experienced in **Telecom BSS**, **Healthcare**, and **UK Loyalty** platforms with strong focus on backend data validation, ETL testing, and system-level quality assurance. Ensured production stability, data accuracy, and compliance across distributed enterprise systems, contributing to reliable AI-enabled deployments.

Knowledge of **AI-assisted development tools (Antigravity, Windsurf, Emergent, Cursor and others)** to accelerate architecture design, code generation, refactoring, prompt-driven feature creation

Declaration

I hereby declare that the above information is true and correct to the best of my knowledge.