AI / ML Engineer – Live Project Evaluation

AI-Powered No-Show & Customer Intelligence Module

Enterprise Salon Booking Platform

1. Context

We are building an enterprise-level salon booking system supporting:

- Multi-branch operations
- Real-time appointment scheduling
- Staff allocation
- Cancellation handling
- Revenue monitoring

We aim to integrate an AI-driven intelligence layer to reduce revenue loss and improve operational efficiency.

2. Objective

Design and implement an AI module that:

1. Predicts appointment no-show probability
2. Converts prediction into business action
3. Provides interactive executive insights
4. Demonstrates production-ready thinking

3. No-Show Prediction Engine

Problem

Some customers book appointments but do not show up.
This causes revenue loss and staff idle time.

Build a predictive model that estimates the probability of no-show.

Dataset (Mock or Synthetic Allowed)

Minimum expected features:

- Booking ID
- Customer ID
- Service Type

- Booking Date & Time
- Booking Lead Time
- Past Visit Count
- Past Cancellation Count
- Past No-Show Count
- Payment Method
- Branch
- Day of Week
- Appointment Outcome (Show / No-Show)

4. AI Dashboard (Mandatory)

Build an interactive dashboard using Streamlit (preferred), Power BI, or Tableau.

Dashboard Must Include:

Executive Overview

- Total bookings
- No-show rate
- Estimated revenue impact
- High-risk upcoming bookings

AI Insights

- Risk distribution
- Feature importance
- Risk breakdown by branch
- Risk breakdown by service

Customer Behavior

- Repeat vs new customers
- Booking lead-time analysis
- Peak no-show time slots

Required Filters

- Date range
- Branch
- Service type

Dashboards must be interactive and business-friendly.

Basic Retention Intelligence

Perform customer-level analysis to:

- Identify repeat customers
- Identify churn-risk users (rule-based acceptable)
- Suggest 2–3 data-backed retention strategies

6. Production Thinking

In your README, explain:

- Model integration with booking API
- Real-time inference flow
- Retraining strategy
- Data drift detection
- Monitoring metrics
- Scalability for 200K+ users

Architecture diagram required.

7. Deliverables

- GitHub Repository
- Working ML implementation
- Interactive Dashboard
- README with:
    - EDA findings
    - Feature engineering
    - Model comparison
    - Business logic
    - Architecture diagram
    - Assumptions
- 5–7 minute demo video

Regards
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