**Project development Model performance**

**Salesforce-Based AI Project Phases: Rotten Fruits & Vegetables Detection**

Let's now combine everything into a clear project-level explanation of a Salesforce-based solution for Traffic Tellogence: Advanced Traffic Volume Estimation using Machine Learning (ML).

🚀 **Project Title**:

Traffic Tellogence – Intelligent Traffic Volume Estimation and Management using ML with Salesforce Integration

🎯 **Project Objective**

To develop a smart, AI-powered traffic monitoring and prediction system that uses machine learning to estimate future traffic volumes and integrates with Salesforce to manage alerts, generate reports, and support decision-making for traffic authorities and city planners.

🏗 **High-Level System Architecture**

[ IoT Traffic Sensors | GPS | Cameras | Weather APIs ]

↓

[Data Preprocessing & Feature Engineering]

↓

[Machine Learning Model (XGBoost / LSTM)]

↓

[Traffic Volume Prediction per Road/Zone/Hour]

↓

[Salesforce Integration & Dashboards]

↓

[Notifications | Reports | Incident Management | Alerts]

📡 1**. Data Sources**

IoT devices: Vehicle count, speed, type

CCTV/Cameras: Visual traffic input

GPS/mobile data: Real-time traffic flow

Weather APIs: Rain, fog, visibility

Calendar/Event APIs: Public holidays, sports events

🤖 2. **Machine Learning Model – Traffic Volume Estimation**

🔧 **Techniques Used**:

Time Series Forecasting: Using LSTM or ARIMA for hourly traffic patterns.

Ensemble Models: Random Forest, XGBoost for multi-variable inputs.

Deep Learning (CNN-LSTM): For video data + time-series estimation.

🧾 **Sample Features**:

Time (hour, weekday, holiday)

Traffic from last 3 hours

Road type / lane count

Weather (rain, visibility)

Event density

**📊 Performance Metrics:**

MAE (Mean Absolute Error): ~50-100 vehicles/hour

RMSE (Root Mean Squared Error): Lower than 120

R² Score: ≥ 0.85 (good prediction accuracy)

🧠 3. **Salesforce Integration – Intelligent Workflow**

Salesforce plays a key role in visualizing, managing, and acting on traffic predictions.

🔁 **What Salesforce Does**:

Function Salesforce Tools Used

Real-time alerts Salesforce Flow + Platform Events

Reporting & dashboards Tableau CRM / Einstein Analytics

Escalation of congestion Service Cloud + Case Management

Public authority updates Experience Cloud Portal

Predictive insights Einstein Prediction Builder

📊 4. **Sample Dashboard Widgets**

Widget Description

📍 Traffic Prediction (Next Hour) Shows predicted vehicle count by location

🔔 High Traffic Alert Log Past/pending alerts

🌦 Weather-Traffic Correlation Visual link between weather and traffic

🛣 Top Congested Routes Based on predicted and actual data

📅 Prediction Calendar View Predicted vs actual trend comparison

🌆 5**. Use Case Scenarios**

1. Urban Traffic Control Center

Get alerts about likely congestion in 30–60 mins