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DEMAND FORECASTING MODEL FOR INVENTORY MANAGEMENT

BANKING AND FINANCIAL SERVICES

Presentation by

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Introduction

- **Problem Statement:** Financial institutions face challenges in maintaining regulatory compliance, adequate liquidity and managing demand forecasting.

- **Impact:**
  - Penalties and reputational damage
  - Inventory and operational efficiency.

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Existing Solutions and Gaps

Current Models

01

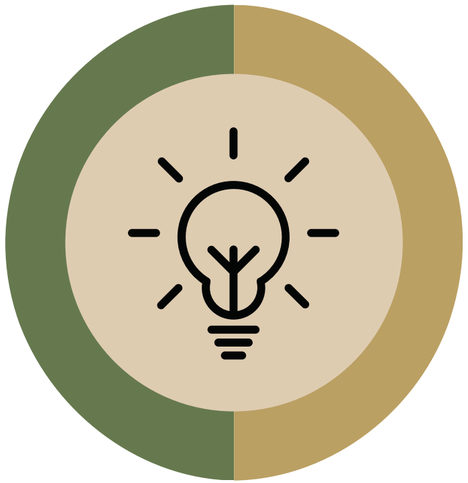
Compliance
Risk Management Models (Logistic Regression, Decision Trees)

02

Demand Forecasting
Time-Series Forecasting (ARIMA, SARIMA)

03

Machine Learning Approaches
Random Forests, Neural Networks



Limitations

01

Reactive, slow to adapt, reliant on historical data.

02

Assumes past trends continue, struggles with rapid changes and external factors.

03

Data-intensive, computationally heavy, lacks causality insights.

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Proposed Solution: FinVeritas

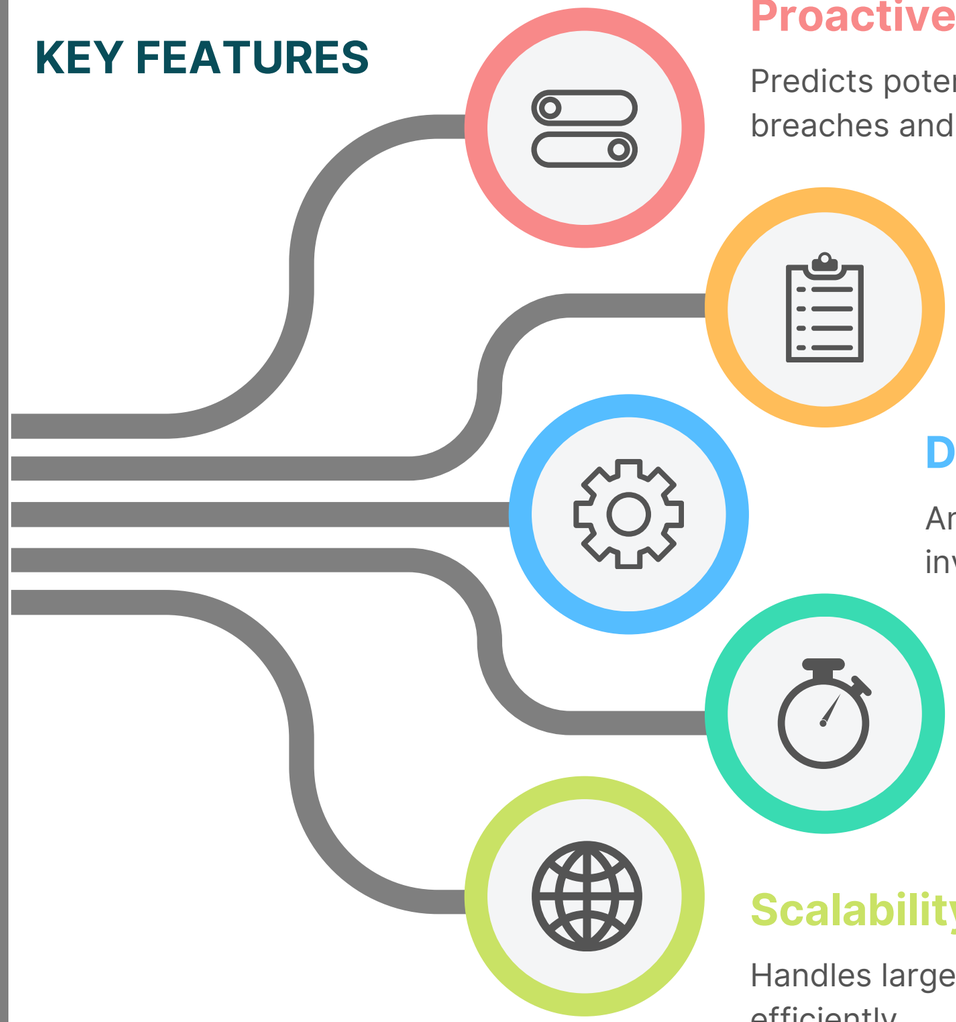
Unique Features:

- Integrated Model
- Real-time

Main Technologies Used:

- PostgreSQL
- Apache Spark
- Scikit-learn
- Streamlit
- Docker

KEY FEATURES



Proactive Detection

Predicts potential compliance breaches and demand fluctuations.

Regulation Coverage

Focuses on Anti-Money laundering, KYC, Credit Regulations, Data Protection, and Capital Adequacy.

Demand Forecasting

Analyzes market trends to optimize inventory efficiently.

Real-Time Alerts

Provides notifications for potential violations and demand changes.

Scalability

Handles large data volumes efficiently.

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Implementation and Benefits

Implementation Steps

1. Data Collection with Pandas and NumPy
2. Data Processing with Apache Spark
3. Model Training and Deployment using Scikit-learn and TensorFlow
4. Interactive UI using Streamlit

Benefits

- Reduced Penalties: Minimizes the risk of fines due to non-compliance.
- Enhanced Reputation: Builds trust with customers and regulators.
- Operational Efficiency: Streamlines compliance, demand forecasting, reducing manual effort.

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Thank You!

For more information visit: Github

or copy link:

https://github.com/SomyaAggarwal1209/Fin-Veritas