AI-Powered API Monitoring System

Problem Statement

- Modern distributed platforms generate **enormous amounts of API log data** which becomes hard to segregate.
- Identifying anomalies in real-time is challenging due to the **high data volume and dynamic system behaviour**.
- **Predicting failures** and potential system issues before they occur is **complex**.
- Current monitoring solutions **lack real-time visibility and predictive insights**.

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Proposed Solution

- A **Kibana** based dashboard for visualizing statistics for API performance.
- Receive **instant notifications** about anomalies, performance issues, and potential failures.
- Leverage **AI** to detect **anomalies, predict failures,** and ensure smooth platform operations.

Methodology:

- Log collection and storage
- Data preprocessing
- Anomaly detection
- Prediction
- Alerting system
- Cross-Environment Correlation

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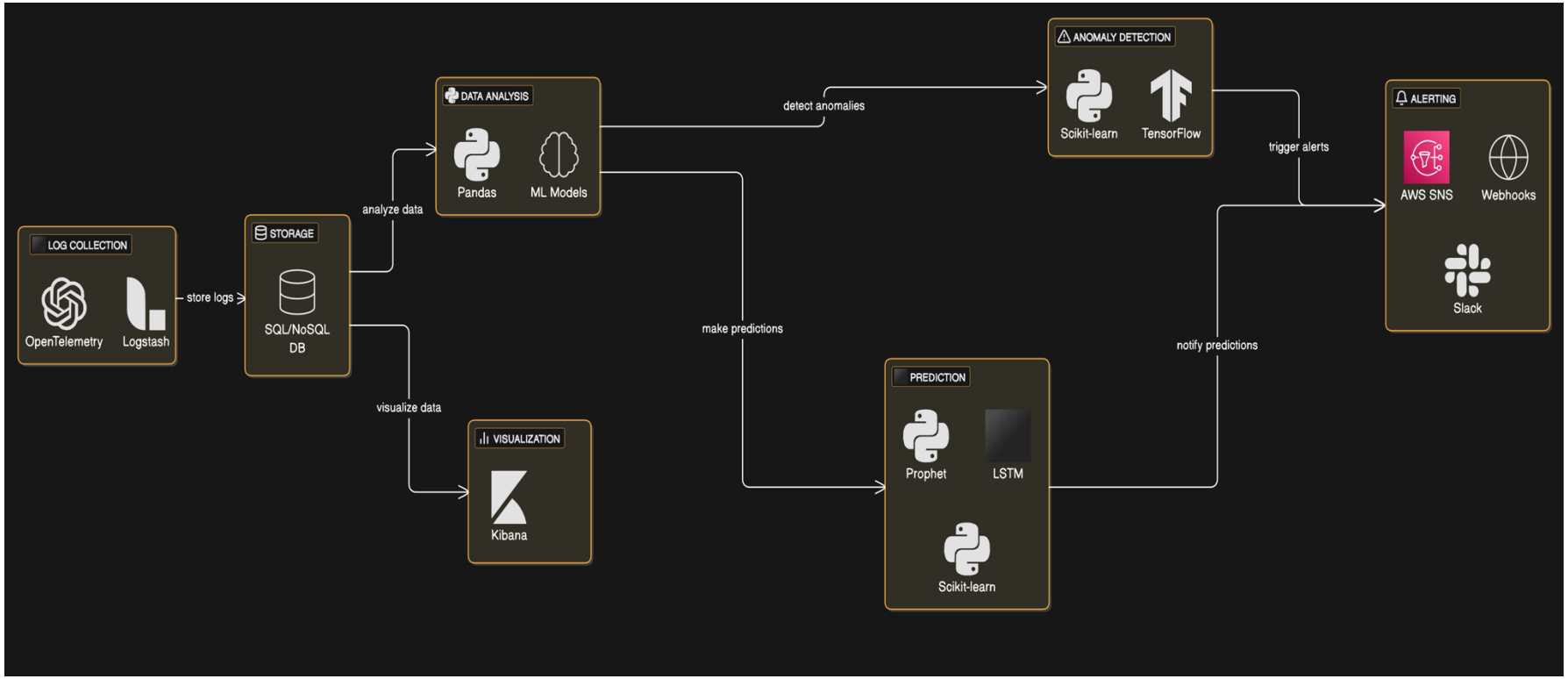

Architecture Diagram

Tech Stack

- **Log Collection**
  - Open Telemetry
  - Logstash
- **Storage**
  - Elasticsearch
  - MongoDB
- **API Analysis**
  - Python

- **Anomaly Detection**
  - Isolation Forest
- **Prediction**
  - Prophet
- **Alerting**
  - AWS SNS
- **Dashboard**
  - Kibana

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Future Enhancement

- **Self Healing** technology can be implemented with the help of GEN-AI.
- **Adaptive Learning** can be introduced through Mahine learning model.

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TEAM DETAILS

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Thank you 😊

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