CLIENT CASE STUDY

Near-Realtime Revenue Analysis System

The Client

A leading background check company, providing service to businesses, organizations, and individuals alike. They offer a comprehensive and confidential investigation into an individual's past, verifying their identity, employment history, education credentials, and potentially even criminal records. By utilizing a wide range of resources and meticulous research methods, they provide a clear picture of an individual's background, allowing informed decisions to be made with confidence.

Key Takeaways

- A leading background check company implemented a near real-time revenue analysis AI system to address challenges in revenue visibility, multi-currency transactions, and anomaly detection.
- The solution enhanced revenue visibility, enabling proactive anomaly identification, informed decision-making on pricing strategies, customer segmentation, and resource allocation through automated reporting and streamlined analysis processes.

Tech Stack

- **Amazon Kinesis**
- **Time series forecasting models:** ARIMA, Prophet, LSTM
- **Machine learning models:** LSTM, SVM, Random Forest
- **Anomaly detection models:** Isolation Forest, K-Means Clustering, LOF
- **Spike detection algorithms:** ARIMA/ SARIMA, Exponential Smoothing, Changepoint Detection
- **Trend analysis models:** Exponential Smoothing, Linear Regression, ARIMA/ SARIMA

The Challenge

The client operates a background check service with individual orders placed by customers. Revenue is generated through these orders, with no subscription model in place. Multi-currency transactions are supported, requiring dynamic conversion rates based on contracts and market fluctuations. Revenue recognition occurs upon order completion and fee collection. The challenge lies in gaining real-time visibility into revenue performance, identifying potential discrepancies and anomalies, and enabling informed decision-making.

Our Solution

The proposed solution leverages a near real-time revenue analysis AI system and complex computation on large datasets. The system ingests data from the existing billing system, processes it, and provides insights into revenue performance. Key features include:

- **Real-time Revenue Analysis:** The system processes and aggregates revenue data near real-time, enabling informed decision-making based on current trends and insights.
- **Multi-currency Support:** The system han dles transactions in various currencies, considering contract-defined exchange rates and current market fluctuations.
- **Test Account Exclusion:** The system excludes revenue generated from designated test accounts, ensuring accurate financial reporting.
- **Anomaly Detection:** The system identifies unusual patterns, trends, and deviations in revenue data, potentially indicating fraudulent activities or market fluctuations.
- **Account-level Analysis:** The system allows for drill-down capabilities, enabling investigation of specific accounts exhibiting anomalous behavior.
- **Threshold-based Alerts:** The system configures customizable thresholds to automatically flag the CEO/CFO when deviations exceed pre-defined limits, prompting timely intervention.

The Result

Our work has significantly enhanced the company's revenue visibility, providing them with a comprehensive understanding of their income streams and fluctuations. This allows for proactive identification of anomalies and potential discrepancies, ensuring timely intervention. Additionally, data-driven insights gleaned from our analysis empower them to make informed decisions regarding pricing strategies, customer segmentation, and resource allocation, ultimately leading to improved efficiency through automated reporting and streamlined analysis processes.