

Real-Time Competitor Strategy Tracker for E- commerce

Batch 1

Introduction

- The Real-Time Competitor Strategy Tracker helps businesses stay ahead in e-commerce with real-time insights, alerts, and analytics.
- It identifies market trends, optimizes pricing, and tailors promotions to enhance competitiveness.
- Seamlessly integrating with e-commerce systems, it ensures ease of use, security, and scalability.
- With AI-driven insights, automated data collection, and competitor benchmarking, businesses can make informed decisions and uncover new opportunities.
- Its multi-platform support and user-friendly dashboard make it essential for thriving in a dynamic market.

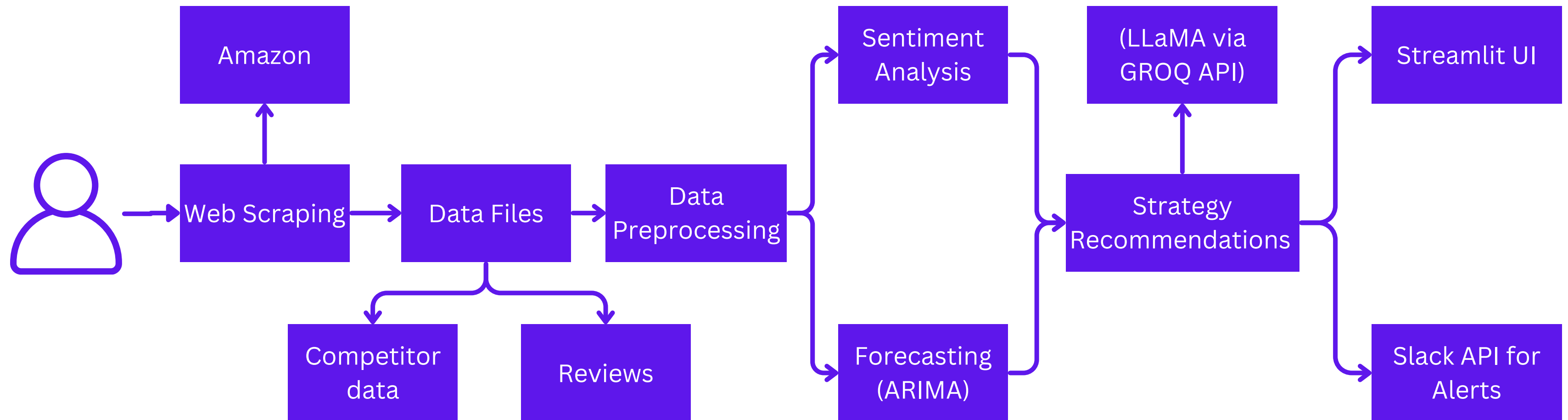
Problem Statement

- Monitoring competitor pricing, discount strategies, and customer sentiment across various e-commerce platforms.
- Scraping and integrating data from multiple sources, such as e-commerce and listing sites.
- Generating strategic insights and recommending responsive actions to optimize pricing and promotions.
- Providing actionable, data-driven strategies to help e-commerce businesses maintain a competitive edge in the fast-paced online retail environment.

Objectives

- Analyzing competitor prices and discounts
- Sentiment analysis of customer reviews
- Predicting future discounts
- Generating actionable strategy recommendations

Architecture Diagram



Features

- 1.Tracker for E-commerce
- 2.Real-Time Competitor Monitoring
- 3.AI-Powered Competitive Analysis
- 4.Sentiment & Review Analysis
- 5.Dynamic Pricing Optimization
- 6.Automated Alerts & Notifications
- 7.Interactive Dashboards & Reports

Technology Stack

1. Python – Core language for data extraction, processing, and automation.
2. Web Scraping – Collects competitor data in real time for analysis.
3. Hugging Face – Provides AI models for advanced text and sentiment analysis.
4. ARIMA – Forecasts pricing trends and market demand.
5. GROQ API – Enhances AI-driven insights with high-speed processing.
6. LLaMA – Enables advanced language models for competitor analysis.
7. Streamlit – Builds interactive dashboards for real-time data visualization.
8. Slack API – Sends real-time alerts and insights to teams.

Challenges Faced

- Data Accuracy & Reliability Issues – Web scraping can be blocked, and competitor data may be outdated or incomplete.
- Complex AI & LLM Integration – Requires continuous model updates, and AI may generate biased or incorrect insights.
- Difficulty in Detecting Sarcasm & Context – NLP models struggle with sarcasm and nuanced language, leading to misinterpretations in sentiment analysis.
- Over-Reliance on Automation – AI speeds up decision-making but cannot replace human judgment in strategic planning.
- High Computational Resource Requirements – Running AI models and web scrapers demands significant processing power and scalability.



- Enhances decision-making to stay ahead in the competitive e-commerce landscape.
- Empowers businesses to drive growth and improve customer loyalty.

Future Improvements

- Upgrade from ARIMA to deep learning models (LSTMs, Transformers).
- Incorporate economic factors (inflation, supply chain disruptions).
- Use social media sentiment & influencer impact.
- AI-driven personalized offers based on user behavior.
- Expand data collection from more e-commerce platforms.
- Integrate additional product categories for comprehensive analysis.

Thank You!