Success Story

Forecasting framework for a global retailer

In today's competitive retail landscape, forecasting demand accurately makes or breaks any business. A major global retailer relied on a slow and resource-intensive forecasting process that made it hard to keep up competitiveness. With VirtusLab's help, the retailer now uses a new forecasting framework that allows for faster creation of forecasts and the addition of further predictions easily.

The Challenge

Our client faced a significant challenge with their existing forecasting process. The slow, resource-intensive process lacked the flexibility to easily add long-term forecasts. The prediction of future sales, inventory levels, and customer demand for their products lagged behind, disrupting the retailer's efforts to plan their buying and merchandising strategies. The hoped profit maximization was undermined by overstocking or under-stocking of products.

The solution

VirtusLab (VL) implemented a new forecasting framework that streamlined the entire process, making it faster and more efficient than ever before. By introducing parallelization with Apache Spark, we enabled our client to take advantage of multiple computers and run the process simultaneously, eliminating the bottleneck caused by using only a single computer.

The framework relied on complex time series analysis and statistical models to predict future trends better. VirtusLab processed several hundred terabytes of historical data, analyzed it, and ran validation tests to ensure accuracy. The framework VL developed includes handling external data sources and factors such as inflation rates that may impact sales forecasts.

The results

Our client experienced several positive outcomes as a result of implementing the new forecasting framework:

1. **Streamlined Forecasting:** the automated forecasting process significantly reduces manual intervention and errors, leading to smoother and faster calculations.
2. **Faster Forecasting:** the forecasting time has been **reduced from several days to just an hour**, increasing the productivity and efficiency of the team.
3. **Improved Flexibility:** the new framework allows the client to quickly add long-term forecasts and adapt swiftly to changing business requirements.
4. **Enhanced Data Science:** data scientists now focus on critical business analysis rather than just performing manual calculations of forecasts.

The tech stack

Languages	Python, Spark
Database	Hive S3
Infrastructure On-prem	Yarn Kubernetes

/ **Cloud:**	• Azure Databricks
/ **CI/CD:**	• Jenkins • Airflow
/ **Modelling:**	• Statistical models

python™ | Spark | HIVE | amazon S3 | yarn

kubernetes | databricks | | Apache Airflow | Statistical models

About VirtusLab

At VirtusLab, we aim to lead in software technology, working consistently to enhance efficiency. Our profound commitment to research and development and a dedicated focus on emerging trends and inspirations fuels an innovative culture. This ethos precisely guides advancing our cutting-edge solutions, inviting collaboration to expand the boundaries of software technology collectively. We welcome you to be a part of this transformative journey.

Let's connect

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