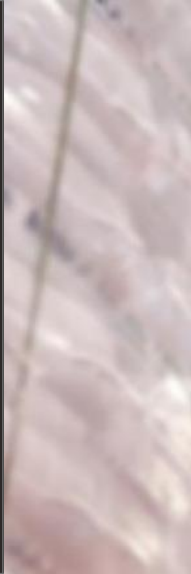


## Tiger Analytics helped a top US manufacturer to **reduce rack execution time by ~85% with automated planogram compliance**



Tiger Analytics worked closely to automate the complete planogram compliance audit process, encompassing end-to-end workflow management in cloud and edge devices. The Computer Vision-driven AI solution enhanced in-store retail execution across geographies, covering strategy, compliance, reporting, and analytics. It reduced the client's in-store rack execution time from ~40 to ~5 minutes for APAC and 60 to 10 minutes in LATAM.



# The Background

Our client is a leading American multinational Consumer Goods Manufacturer, selling globally through retail stores. During the planogram compliance audit, their sales/store representatives utilized planogram documents to enhance product availability and visibility. These reps visited the retail stores once a week to manually audit each planogram, carrying out key tasks like shelf SKU inventorying, rack auditing, generating reports, and more. In certain markets, the store managers shared daily images of racks to restock inventory weekly. Hence, the client required a comprehensive solution utilizing AI and ML models to automate the planogram compliance audit process while enhancing in-store retail execution.

## Key Challenges

**/ Diverse SKUs and KPIS:** Each market exhibited differences in SKUs and tracked KPIS, making it hard to develop a globally scalable solution.

**/ Lack of offline solution capability:** Since there was no edge deployment, the existing solution was incapable of functioning offline without an internet connection. This affected user experiences.

**/ Inconsistent data and varied image quality:** Data was sparsely available, with inaccurate labeling for individual store racks and SKUs. Also, the provided image quality varied based on the capturing device.

Drive change with  
end-to-end solutions.



# Our Solution

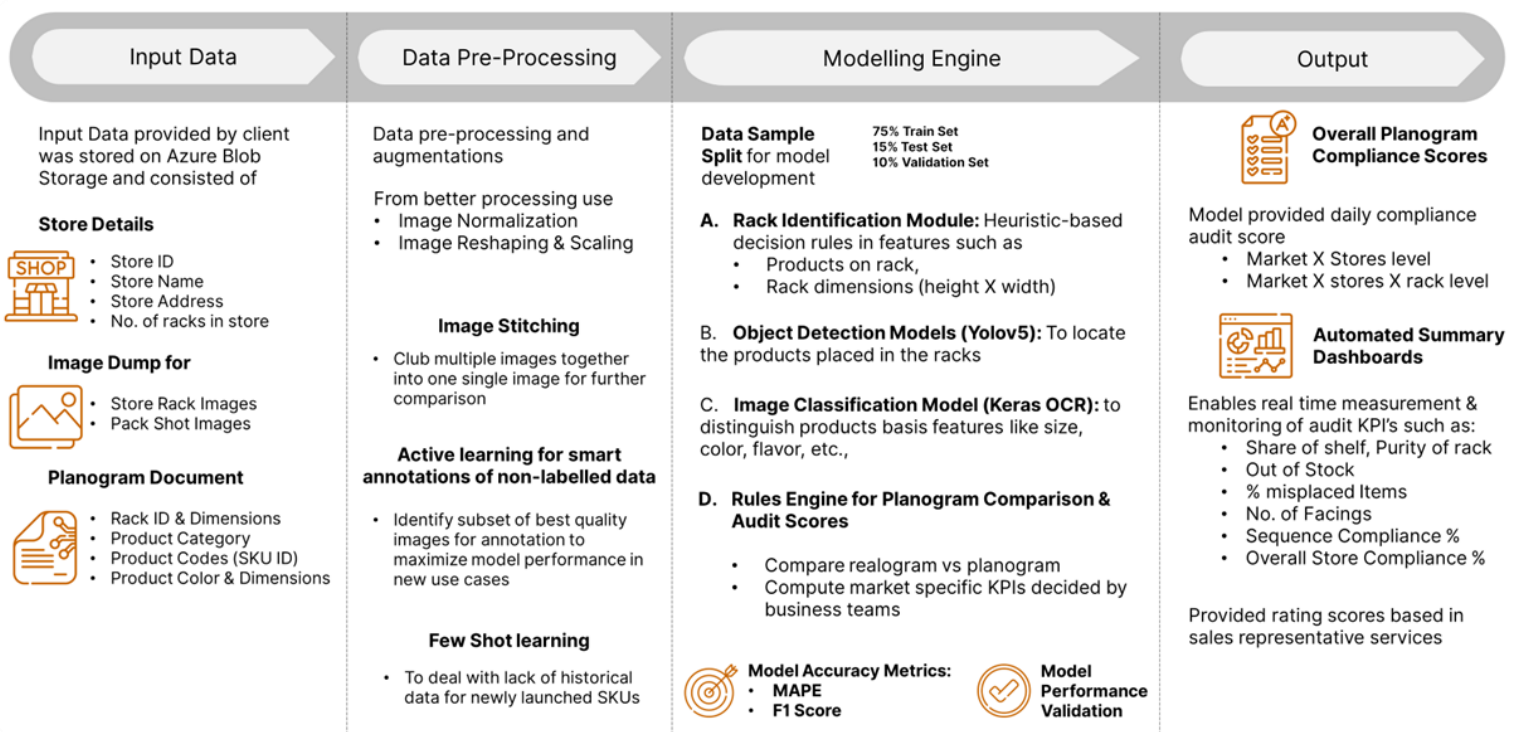
Tiger Analytics developed an AI and ML solution to digitally identify compliance issues, ensuring that the right SKUs are optimally available and visible on the shelves. The solution was seamlessly integrated into the client's mobile app, enabling real-time processing.

The team's approach to the AI and ML solution followed three major phases. In the first phase, **Data Collection**, the client furnished key data sources. This included store details, store shelf and product images, and planogram documents detailing product categories, codes (SKUs), colors, and dimensions.

In the second phase, **Pre-Processing**, the team cleaned and organized store-level data and planogram documents and performed image pre-processing and annotation to enhance model performance. Few-shot learning techniques were also implemented to handle the scarcity of historical data for recently launched SKUs.

The third stage, **Modeling Engine**, saw heuristic-based decision rules being established to accurately pinpoint racks, leveraging factors like product types and rack dimensions. An object detection model was deployed to locate the products within the racks. Other highlights of this phase include:

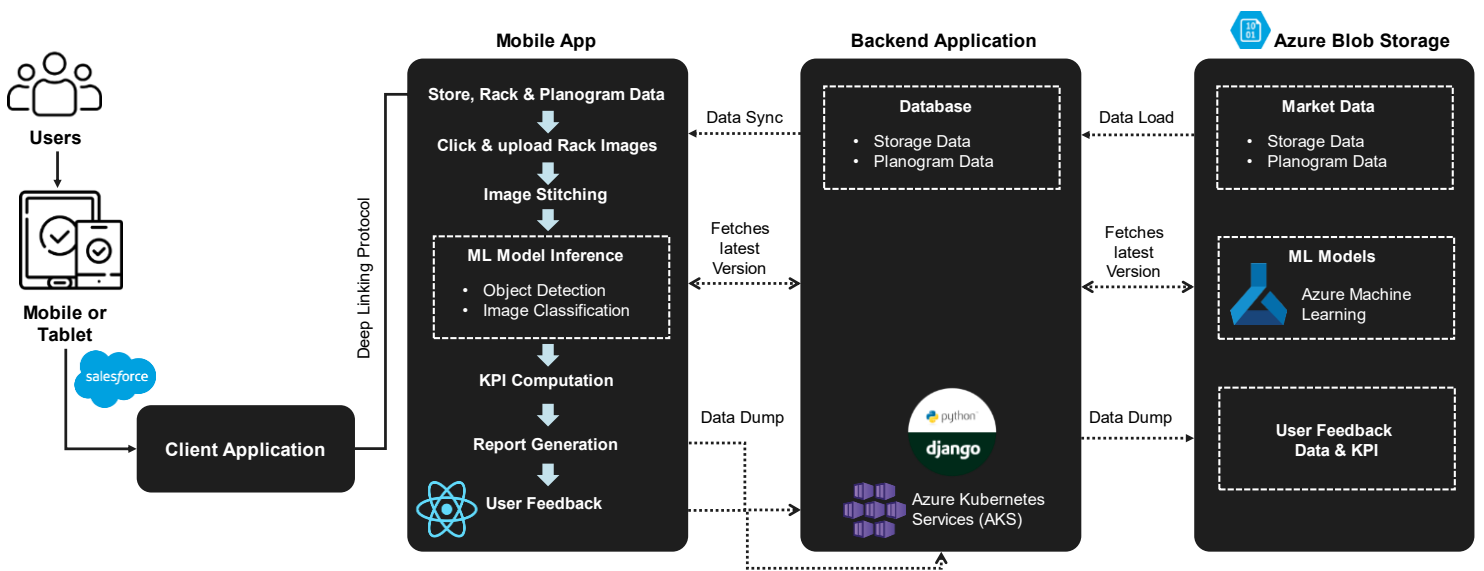
- Image classification model to distinguish the products detected in the previous step
- A rules engine for planogram comparison and audit scores involving:
  - Matching the actual shelf arrangement (realogram) with the intended layout (planogram)
  - Computing market-specific KPIs as defined by the business teams.



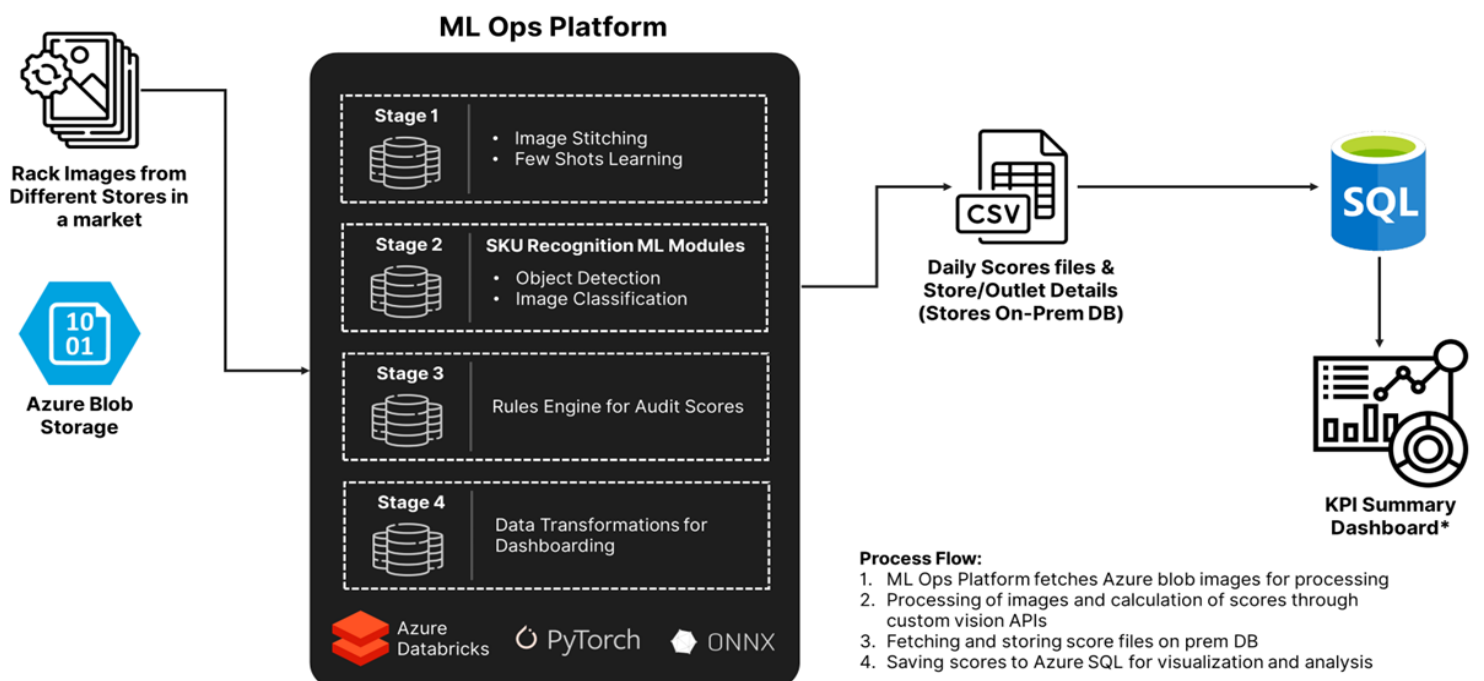


# Tech Stack

- / React Native Mobile App
- / Azure Blob Storage
- / Deep Linking Protocol
- / Azure Kubernetes Services
- / Python Django



# Solution Architecture:



## Value Delivered



End-to-end workflows were created for strategy, compliance, reporting, analytics, etc.

Realogram/planogram disparities were automatically detected by digitally streamlining planogram compliance.

A mobile application was developed for data collection, verification, and dashboard reporting (US, Mexico, and LATAM).

There was an ~85% reduction in in-store rack execution time (from 30–40 minutes to 5–6 minutes for APAC and 60 to 10 minutes in LATAM).

Compliance audit durations were significantly decreased with automated KPI calculations and real-time dashboards for prompt in-store corrective actions.

## About Us

Tiger Analytics is a global leader in AI and analytics, helping Fortune 1000 companies solve their toughest challenges. We offer full-stack AI and analytics services & solutions to help businesses achieve real outcomes and value at scale. We are on a mission to push the boundaries of what AI and analytics can do to help enterprises navigate uncertainty and move forward decisively. Our purpose is to **provide certainty to shape a better tomorrow.**

Being a recipient of multiple industry awards and recognitions, we have 4000+ technologists and consultants, working from multiple cities in 5 continents.

[www.tigeranalytics.com](http://www.tigeranalytics.com)

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