Red Hat Summit

# One Platform, Dual Power

## How Yapı Kredi Unified Predictive and Generative AI with Openshift AI

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YapıKredi

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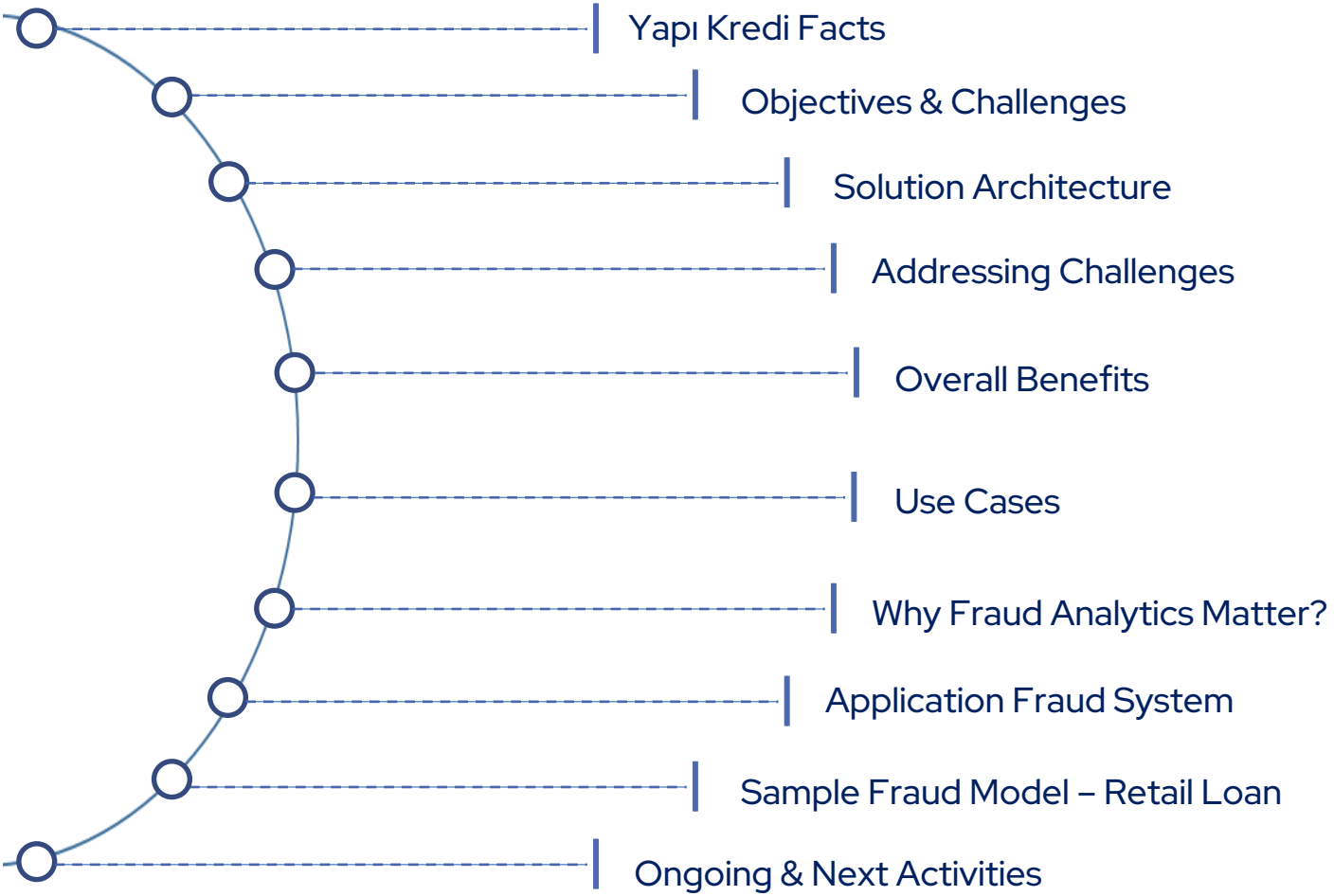
# Agenda

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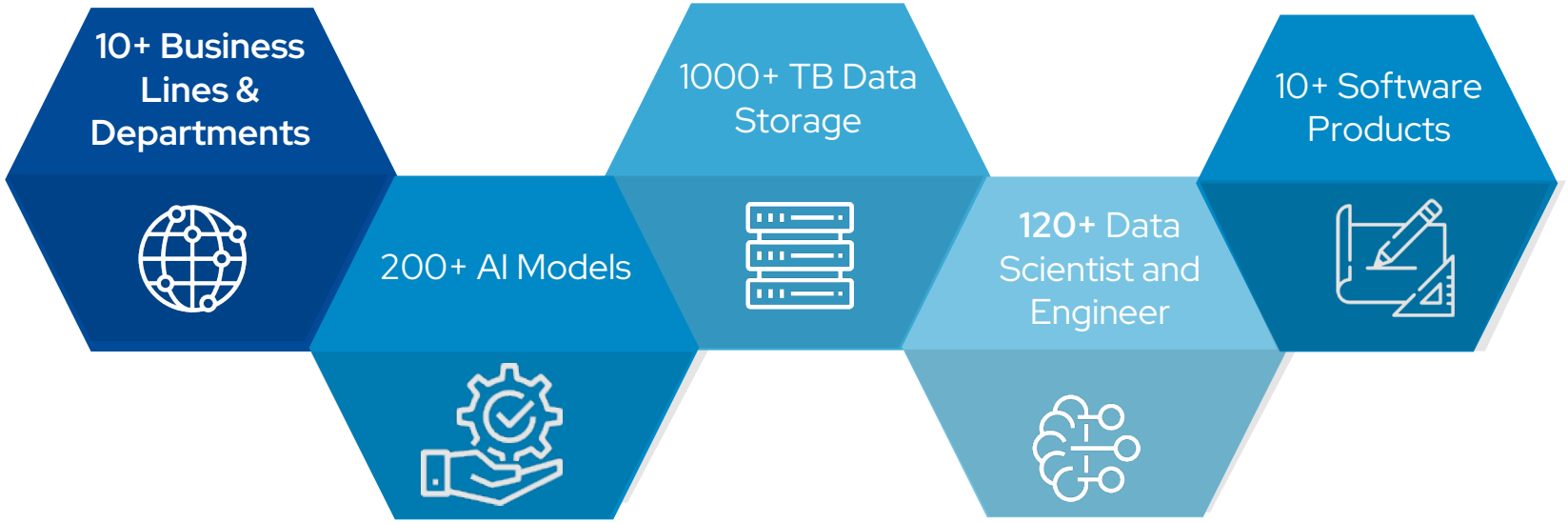
# Yapı Kredi Facts




### LEAN & AGILE

**Data Services**

Streamline technology landscape, manage, and modernize applications with disruptive technologies

### DATA DRIVEN

**AI Insight**

Strategic approach to business transformation, defining the path to value

### TRANSPARENT

**Data Operations**

Monitor, Maintain, Automate and Optimize Entire data ecosystem and its components

# Objectives & Challenges

## Model Development

- Inconsistent dev environments
- Manual and inefficient resource management
- Lack of self-service and autonomy
- Not centralized data sources

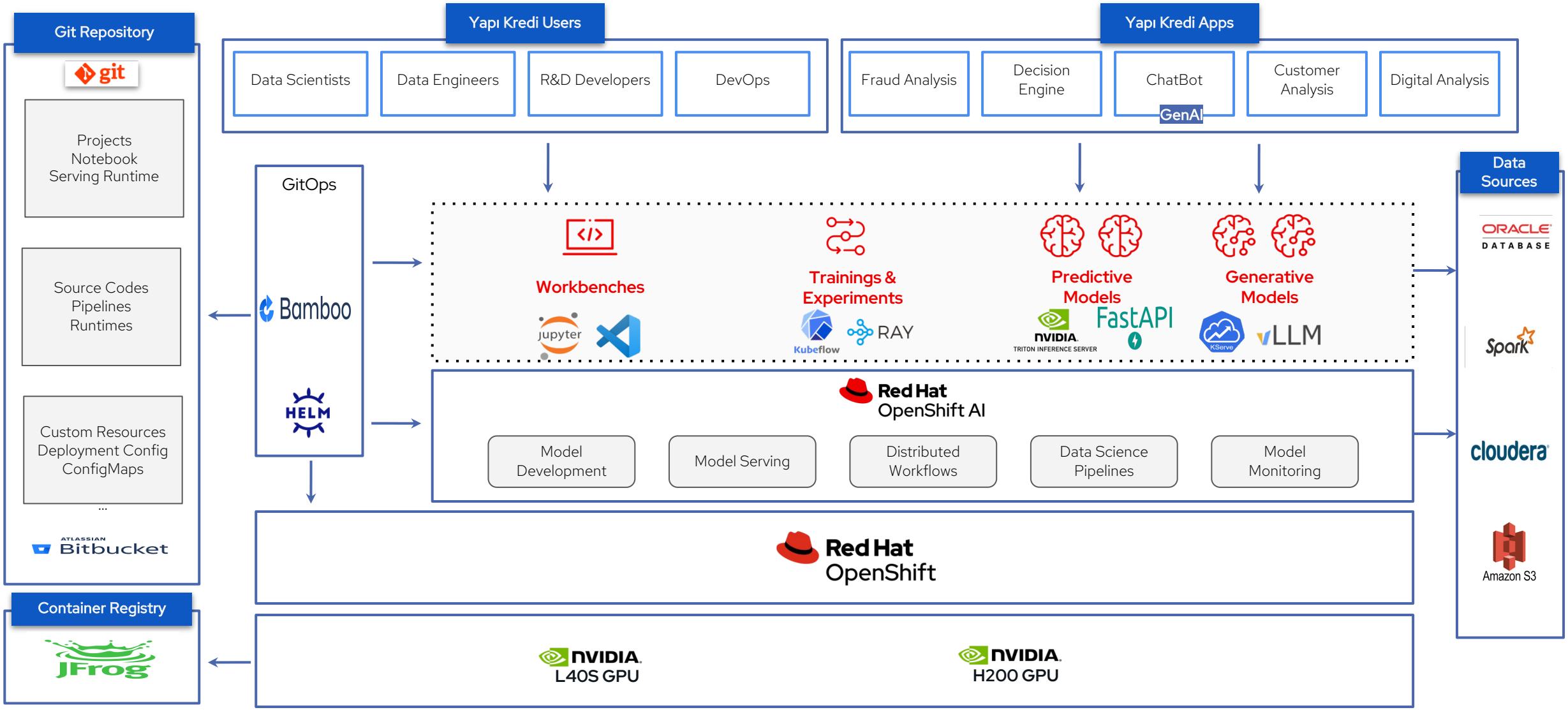
## Model Governance

- Model versioning problem
- Inconsistent deployment workflows
- Inability to audit models

## Collaboration & Productivity

- Preparation for next-gen models
- New algorithms integration diffuculty
- Distributed serving & training
- No shared repository
- Handling of large datasets

# Yapı Kredi Solution Architecture

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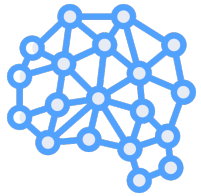
# Addressing Challenges

| --- Challenges --- | --- Solution --- |
| --- | --- |
|  Model Development | Access to multiple data sources<br>Automatic deployment<br>Ability to create data science pipelines |
|  Model Governance | Centralized model registry<br>Model performance optimization with model monitoring<br>Integration with GitOps tools |
|  Collaboration & Productivty | Reduced MDLC duration<br>Integration support for adopting a new modelling language |

# Overall Benefits



## Resource Optimization

Enhanced utilization of GPU resources through shared GPU access and Distributed Workloads

## Governance

Reduced manual operations and operational overhead with automated lifecycle and GitOps

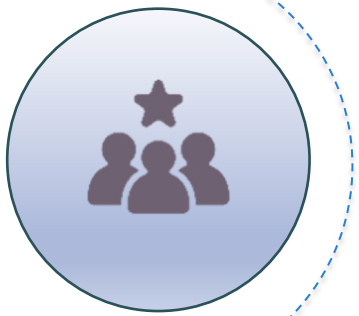
## Autonomy

Enabled over 120+ data scientists across various business units to operate with increased independence and more unified standards

## Innovation

Supported for multiple programming languages ,automatic pipeline and CI/CD integration

# Use Cases



## Predictive Analytics

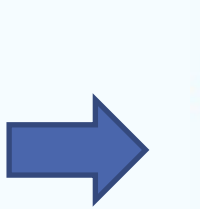
- Risk Analytics
  - *Rating, LGD, EAD Modelling*
- Real-time Next Best Action Systems
- CRM Analytics
  - *Segmentation, Propensity Modelling*
- Pricing Optimizations
- Dunning Analytics
- HR Analytics
- Call Center Optimization
- Fraud Detection
  - *Application & TRX Fraud*

## Generative AI

- RM Insight Chat Bot
- Employee Chat Bots
  - *Code Assistant*
- Agentic Fraud Bot
- Document Processing

# Why Fraud Analytics Matters?

*From Global Trends to Türkiye*



## Global Banking

- **US Losses** in 2023 → **$138.3B**
  *First Party Fraud* → **$121.1B** [1]
- **≈ %60 of financial organizations** indicated direct fraud losses over **$500K** [2]
- For every $1 lost to fraud, **cost to financial services ≈ $4** [3]
- **Future Trend:** Fraud detection & prevention market
  2024 → **$32.4B**, 2031 → **$105B** [4]

## Türkiye Banking

- **25% of companies** experiences fraud in last 2 years (**%15 financial organizations**)[5]
- Credit Card Fraud losses increased by **%126.4** from 2022 to 2023 (2023: **2.83B TL**) [6]
- Digital Channel Fraud losses increased by **%80** from 2023 to 2024 [7]
- Türkiye's **financial crime score** ranked **8 out of 10** [8]

## Analytical Solution

**Real-time fraud analytics** enables early detection & prevents losses

**ML based application fraud detection** reduces first installment default

**Generative AI based systems** provide adaptive defense and reduce man power



1- Global Financial Crime Report 2024
2- Alloy's 2024 Fraud Benchmark Report
3- LexisNexis Report 2024
4- TransUnion 2025
5- KPMG- Profiles of Fraudster 2024
6- TBB Statistical Report 2024
7- BKM
8- Global Organized Crime Index Report 2025

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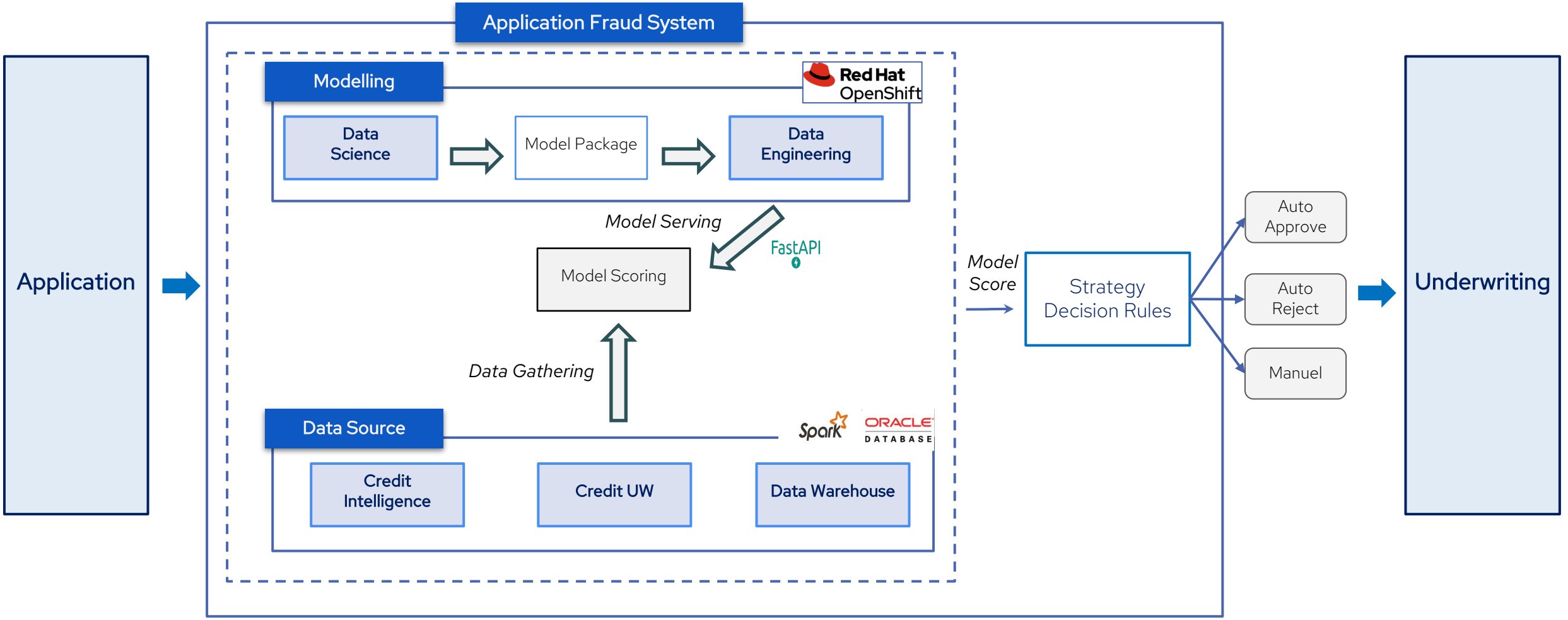
# Application Fraud Detection System



# Sample Fraud Model – Retail Loan

## Insert Population

Retail loan application portfolio is selected.

General Purpose Loan product applications are filtered.

## Target Population

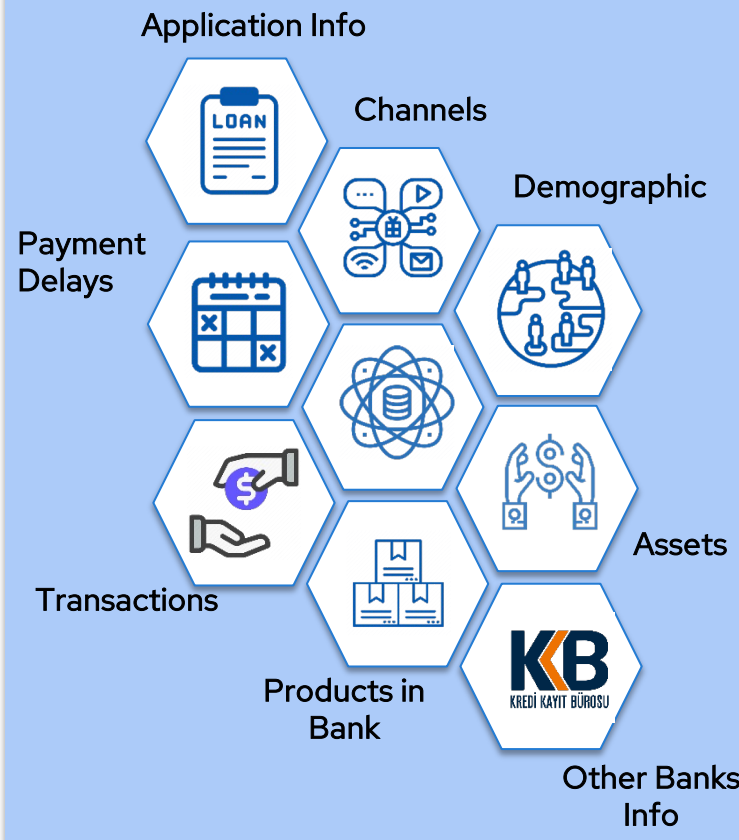
The aim of the model is to **detect fraudulent customer before loan allocation**.

## Target Variable Selection

Target is selected as loans defaulted without any payments in the first 6 months

**Imbalanced data** is the main challenge. Under-sampling is applied to overcome this challenge.

## Independent Variable Types



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# Benefits

Model Performances

120 % ↑

Fraud Case

60 % ↓

Fraud Amount

70 % ↓

Service Response Time

225 % ↑

Total Evaluation Time

0.57 ↑ FTE

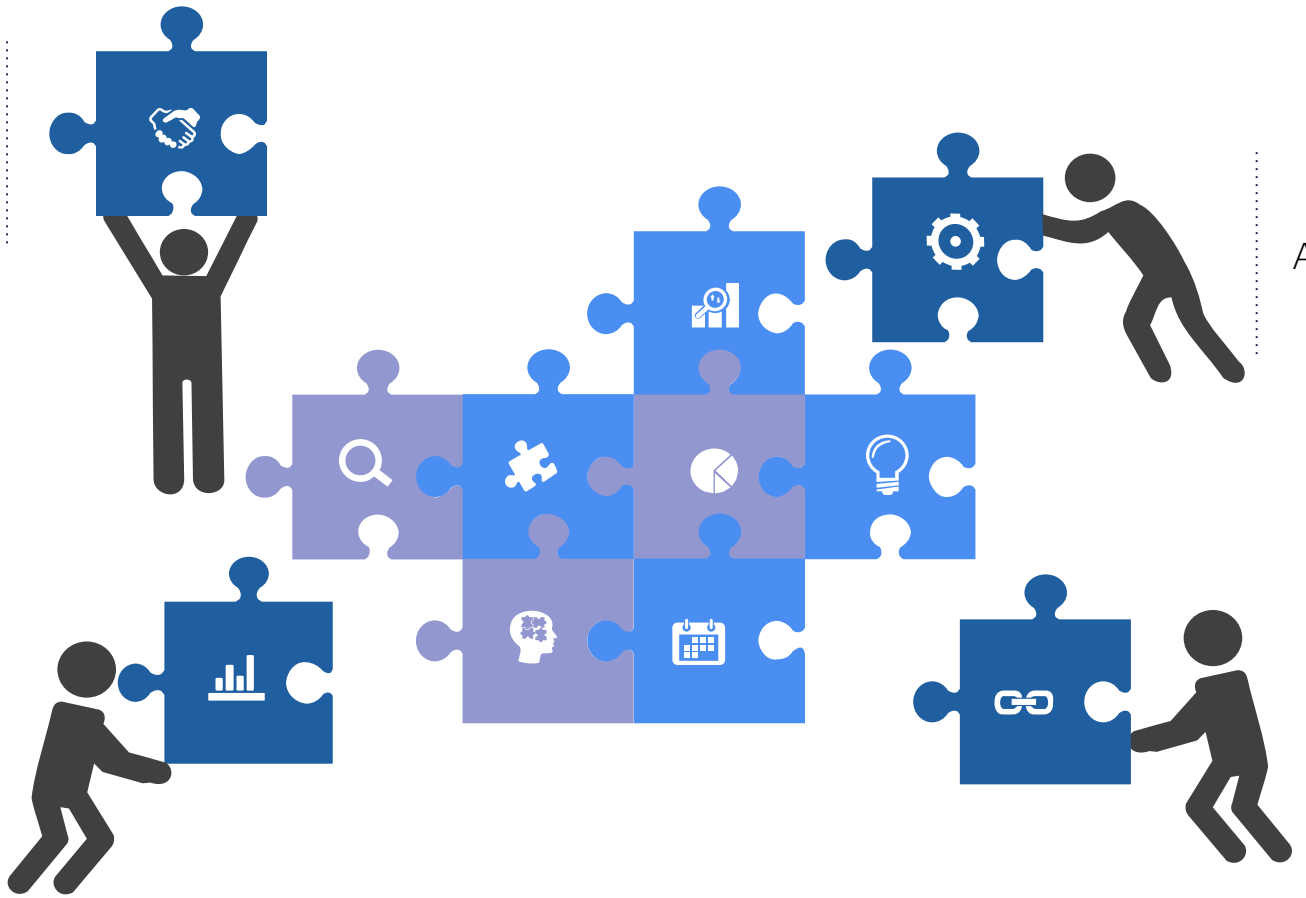
Manuel Investigation Alert

50 % ↓

# Ongoing Activities & Next Steps

## Data Virtualization & Feature Store

Establish a centralized platform for curated features



## AI Agents

Agentic workflows and AI agent integration

## Distributed Inference & Training

Serve very large models & LLM fine tuning on multiple nodes/GPUs over Infiniband

## Model Monitoring

Monitor and maintain all models


# Thank you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