

# AI-Powered Financial Analytics Modernization

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# Fundamental Difference – GEN AI vs AI/ML

## Gen AI

- > New Content
- > Patterns in Natural Language
- > Mostly Black Box
- > Sometimes very unpredictable (see the fine prints in ChatGPT)

## AI/ ML

- > Mainly Structured and often operate on fixed schema
- > Prediction, Classification and anomaly detection
- > Specific defined tasks, hence more reliable and consistent



## The latest LLM



## XGBoost

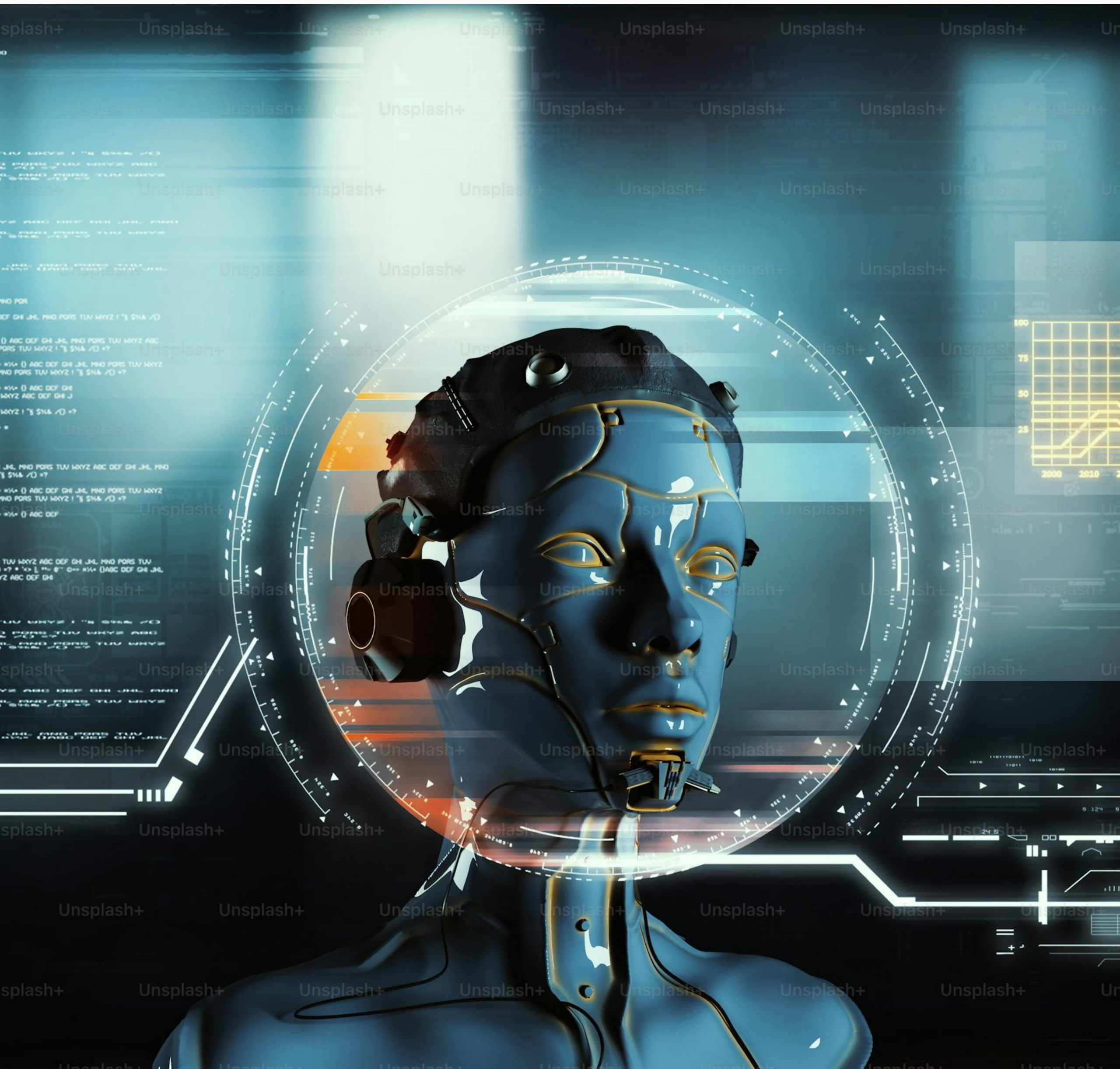






# Why Traditional ML

- Financial Analytics
- Healthcare
- Retail
  - Regulatory Compliances
  - Precision Requirements
  - Personalization
  - Data Volume
  - Compute Power
  - Stability and Reproducibility







# Key Changes in Financial Institutions



- Conventional analytics -> AI-driven insights
- Data-backed decisions
- In financial applications, traditional ML powers
  - Credit scoring and risk assessment
  - Customer churn prediction
  - Payment behavior modeling
  - Portfolio optimization
  - Customer segmentation and personalization





# Enterprise Challenges in ML Implementation and Maintenance

- Scaling and Processing
  - Data Volume
  - Time Constraints
- Infrastructure
  - Complex Pipelines
  - Cost vs Efficiency vs Timelines
  - Model Retraining
- Data Management
  - Multi-tenancy
  - **Legacy Integration (Still the biggest pain)**







# Solution Framework – Powered by Accion Innovation Lab

## > Dynamic Workload Balancing

- Specifically designed Infrastructure with auto load balancing (both hardware and software)

## > Automated MLOps

- Data preparation to monitoring
- Automated training based on data drifts

## > Real- Time Prediction Architecture

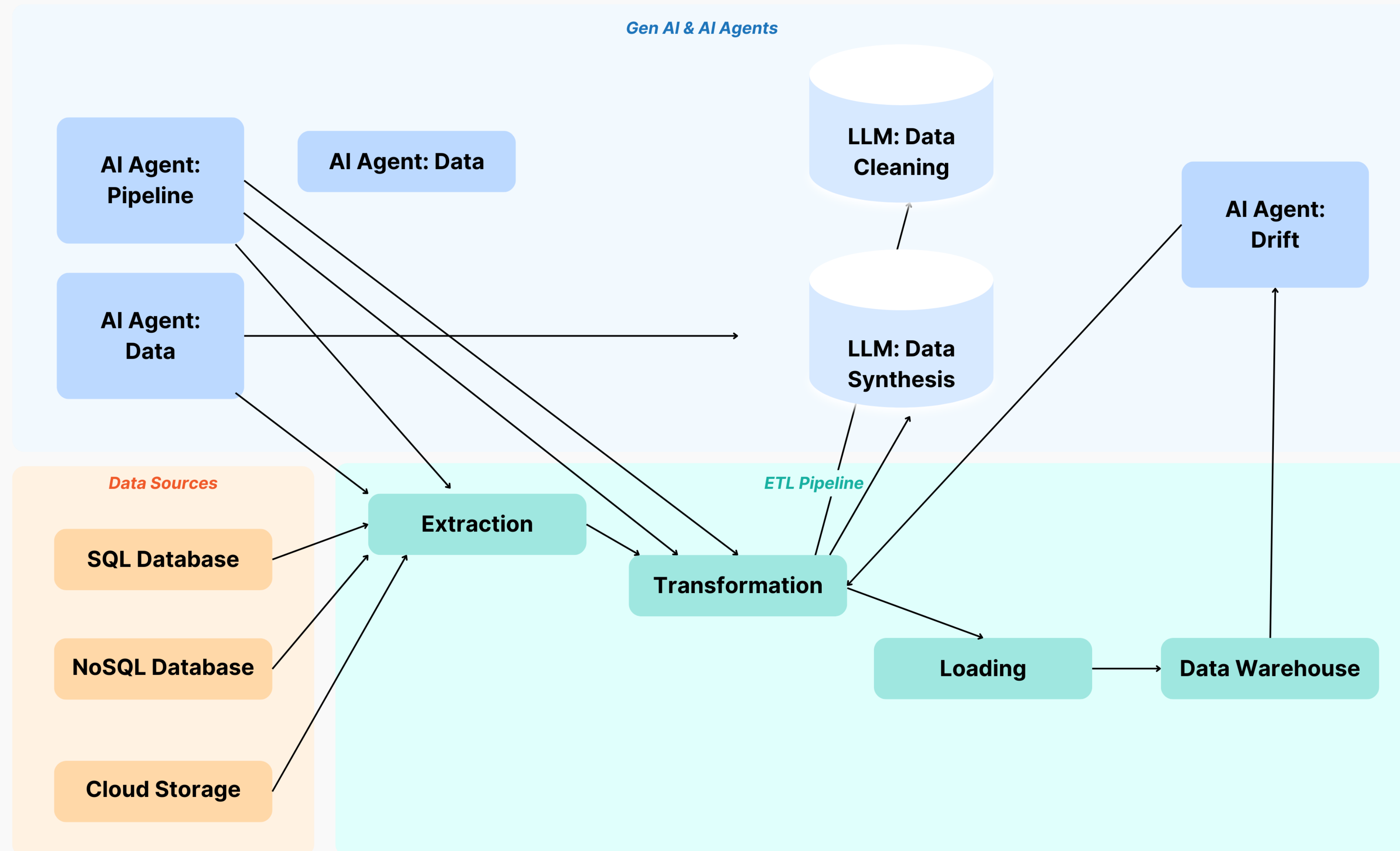
- Instant insights with scalable models
- Low latency processing: Spark, Flink

## > Gen AI powered ETL Pipelines

- Intelligent Data Mapping
- Advanced Data Pipeline Modernization
- QA and Security embedded in pipelines



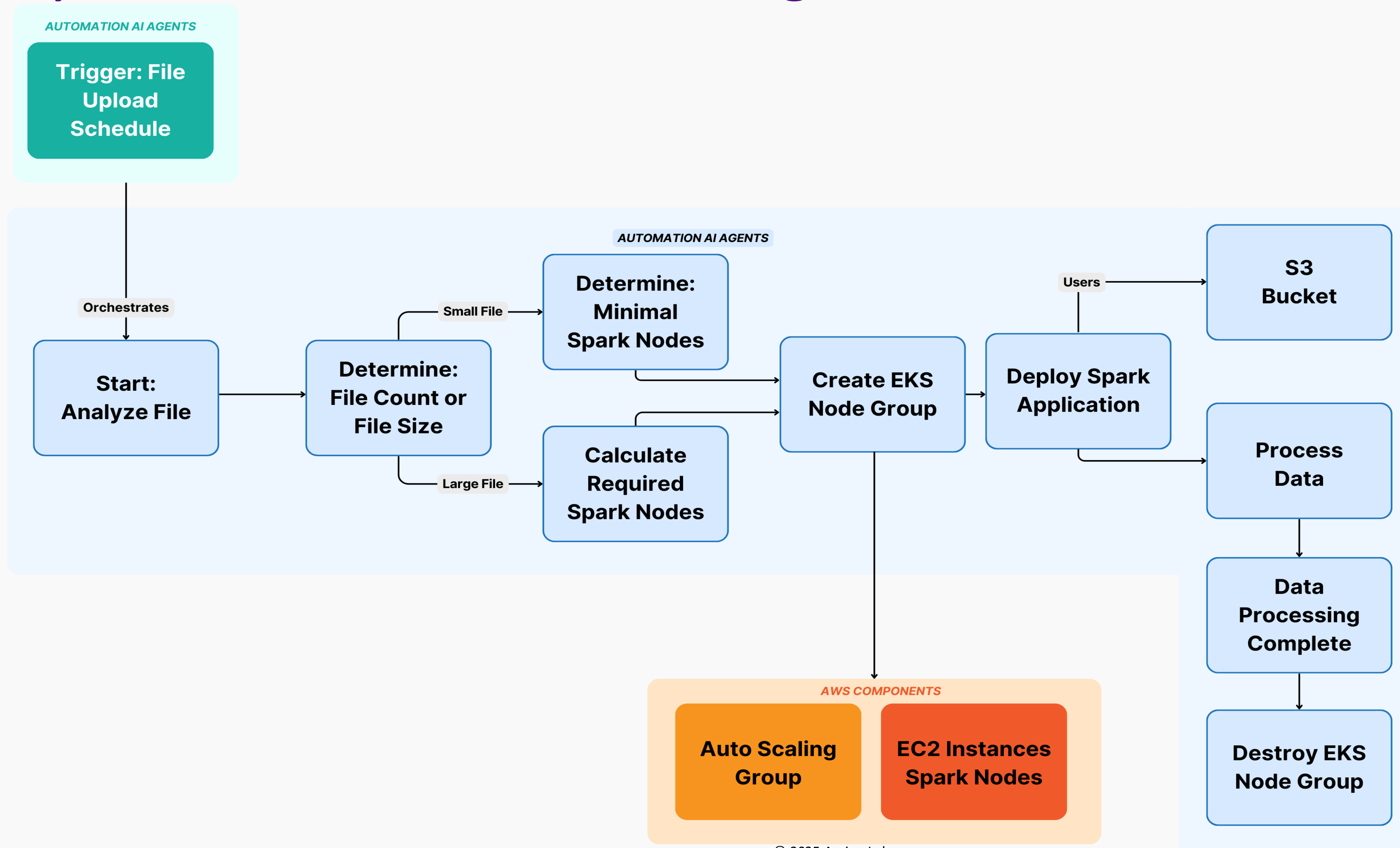
# Gen AI powered ETL Framework







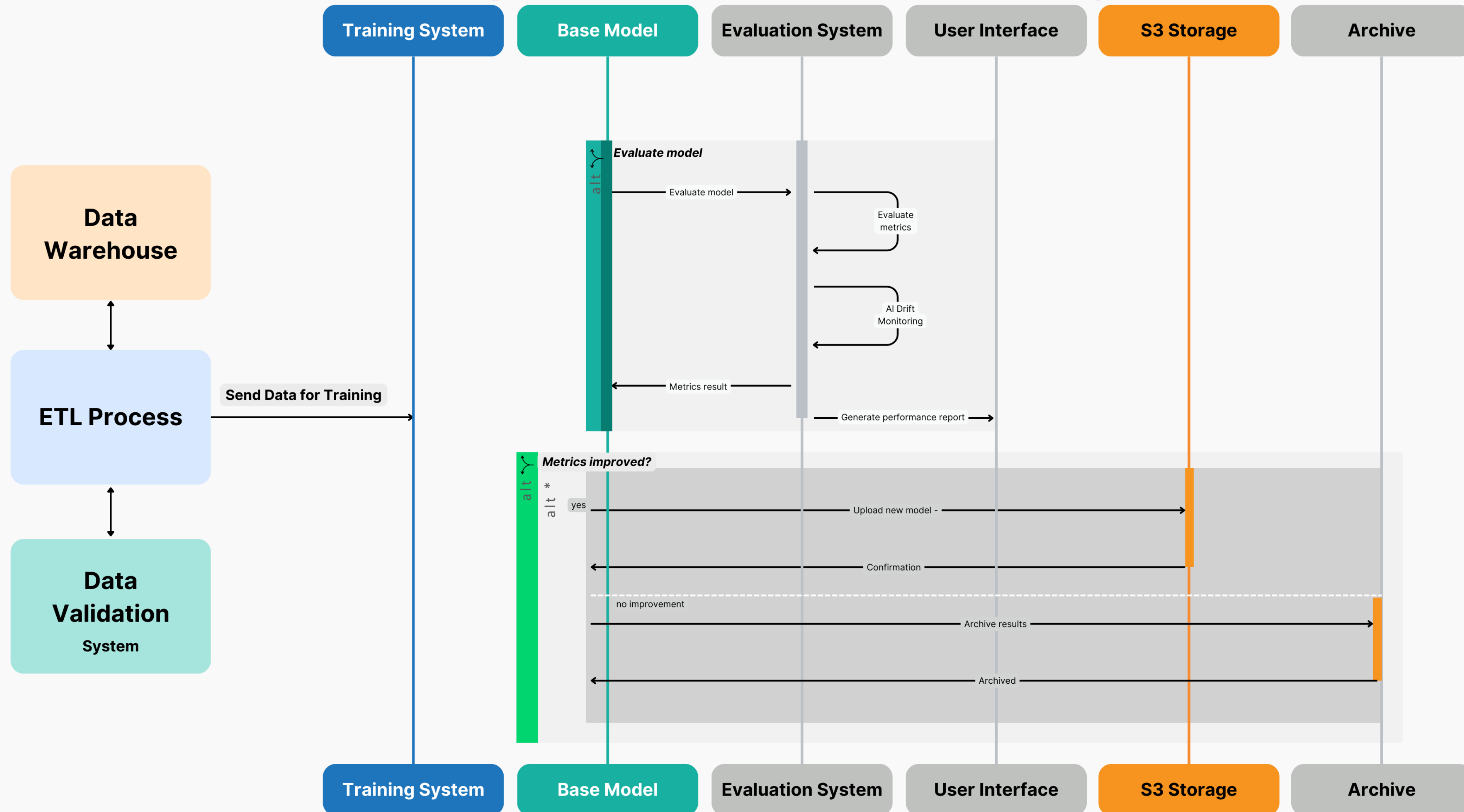
# Dynamic Workload Balancing







# Model Monitoring with Auto- finetuning







# Strategic Models for different use cases

- Propensity to Pay
- Personalized payment plans
- Payer Behavior
- Medical Propensity to Pay
- Best Time and Best Channel to communicate
- Customer Service Agent Queueing



# Business Benefits



- Pre-Canned Models tested in various scenarios reduces model building time drastically
- ML-ops Blueprint - Can be modified to different use cases seamlessly
- GenAI driven ETL pipelines allows to create new pipelines with minimal effort
- Time to Market reduction by at least 30%-40%



# Key Metrics

- **Operational Efficiency:**
  - Processing Time Reduction: From hours to minutes.
  - Model Deployment Time: Reduced by 30% using ML-Ops.
- **Financial Impact:**
  - Cost Savings: 50%+ in manual effort and resource optimization.
  - Increased ROI: Through automated financial insights.
- **Scalability & Performance:**
  - Handling Capacity: Up to 10M records/day with parallel execution.
  - Response Time: Near real-time predictions and report generation.







# The Future Prediction

Integrating Traditional ML and Gen AI





Q & A



# THANK YOU

Accionlabs  
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