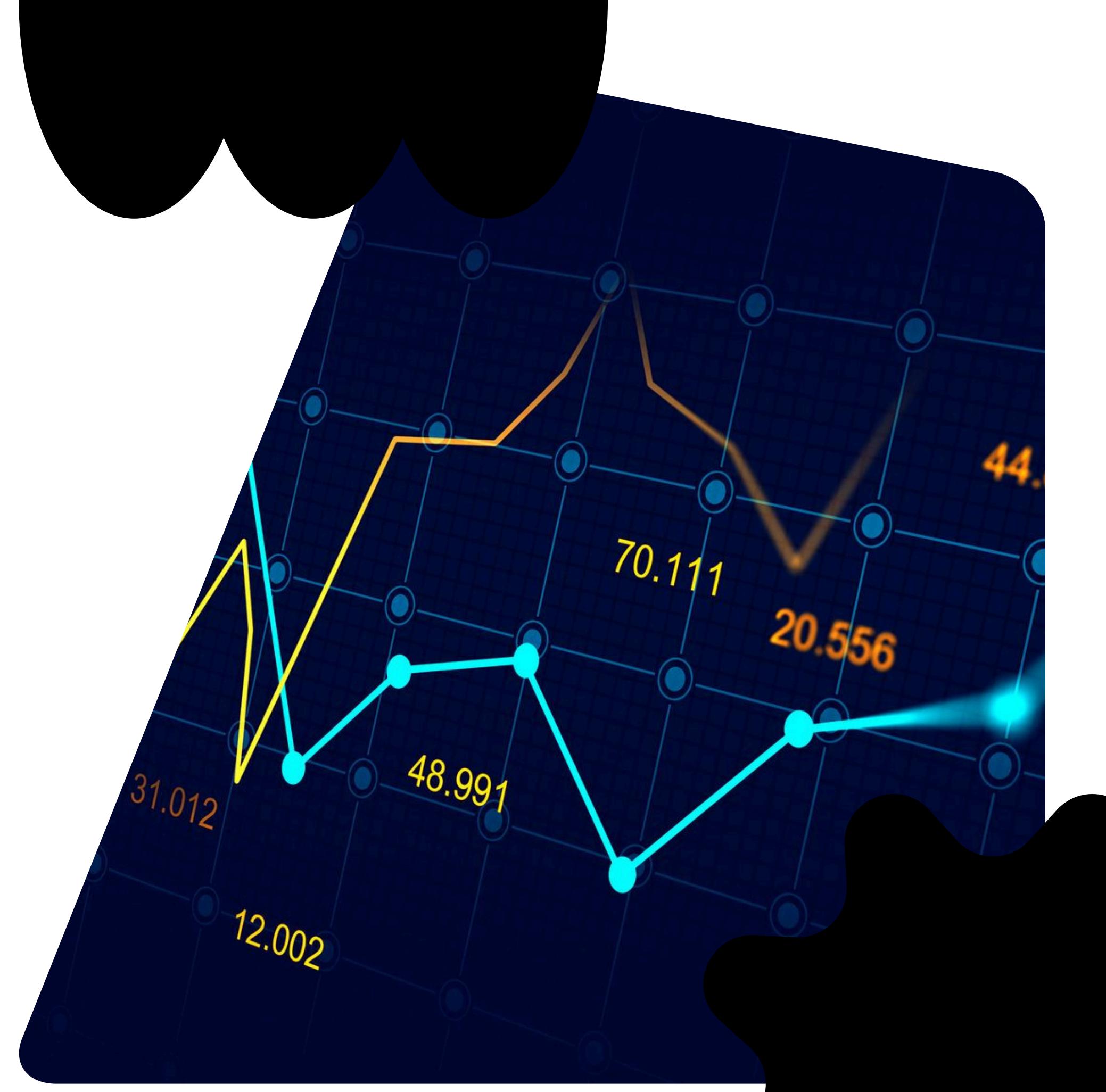




"HELLOWORLD(PRINT)"

QUANTITATIVE TRADING

Alpha Trading Strategies Using HMM/ML



Agenda

Vision

The Market Challenge

Our Solution: EchoQuant
Framework

Key Features & Innovation

Structure

System Architecture

Target Users & Use Cases
Real World Alignment with
Balaena Quant

Execution

Performance Metric &
Financial Impact

Development Roadmap

Conclusion



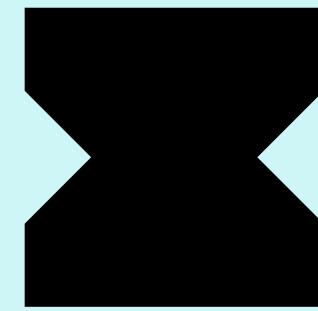
Vision

The Market Challenge

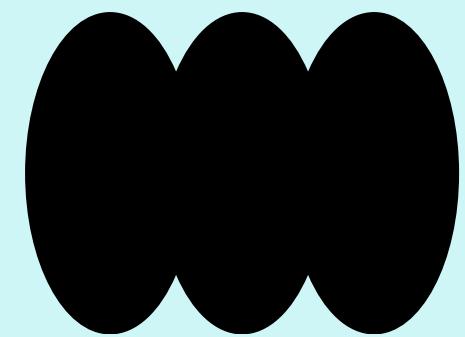
CHALLENGES:

- Precisely identifying hidden market regimes and nuanced shifts in market sentiment.
- Extracting robust and meaningful signals from inherently noisy, multi-dimensional on-chain crypto data.
- Maintaining predictive accuracy at high frequency trading intervals.
- Balancing profitability (alpha potential) and disciplined risk management in strategy optimization.

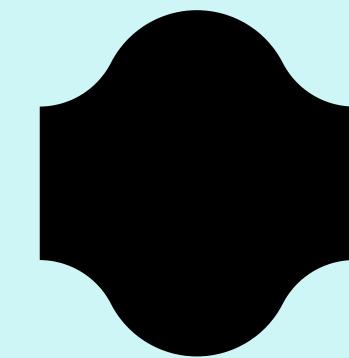
Our Solution: ECHOQUANT



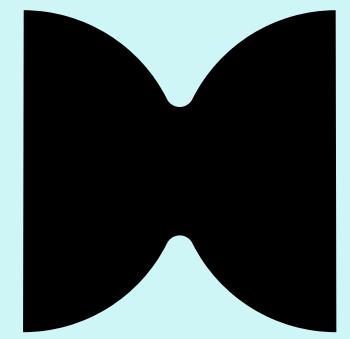
Data
Aggregation



Risk
Management



Hybrid
Architecture



Strategy
Optimization

Key Features & Innovation



**MODULAR
STRATEGI API**



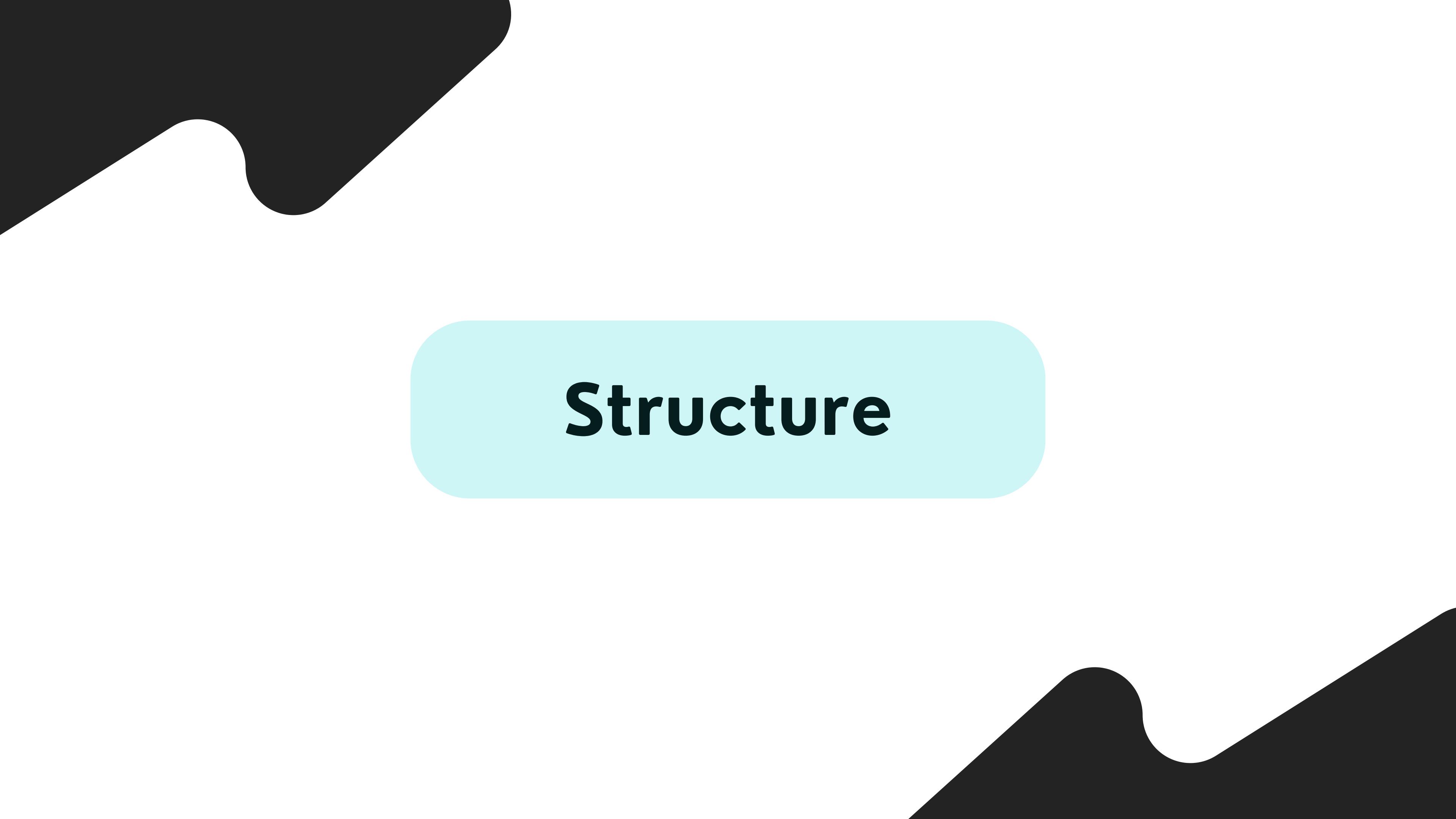
**FINANCE-CENTRIC
METRIC SUITE**



**HYBRID MODEL
SUPPORT**

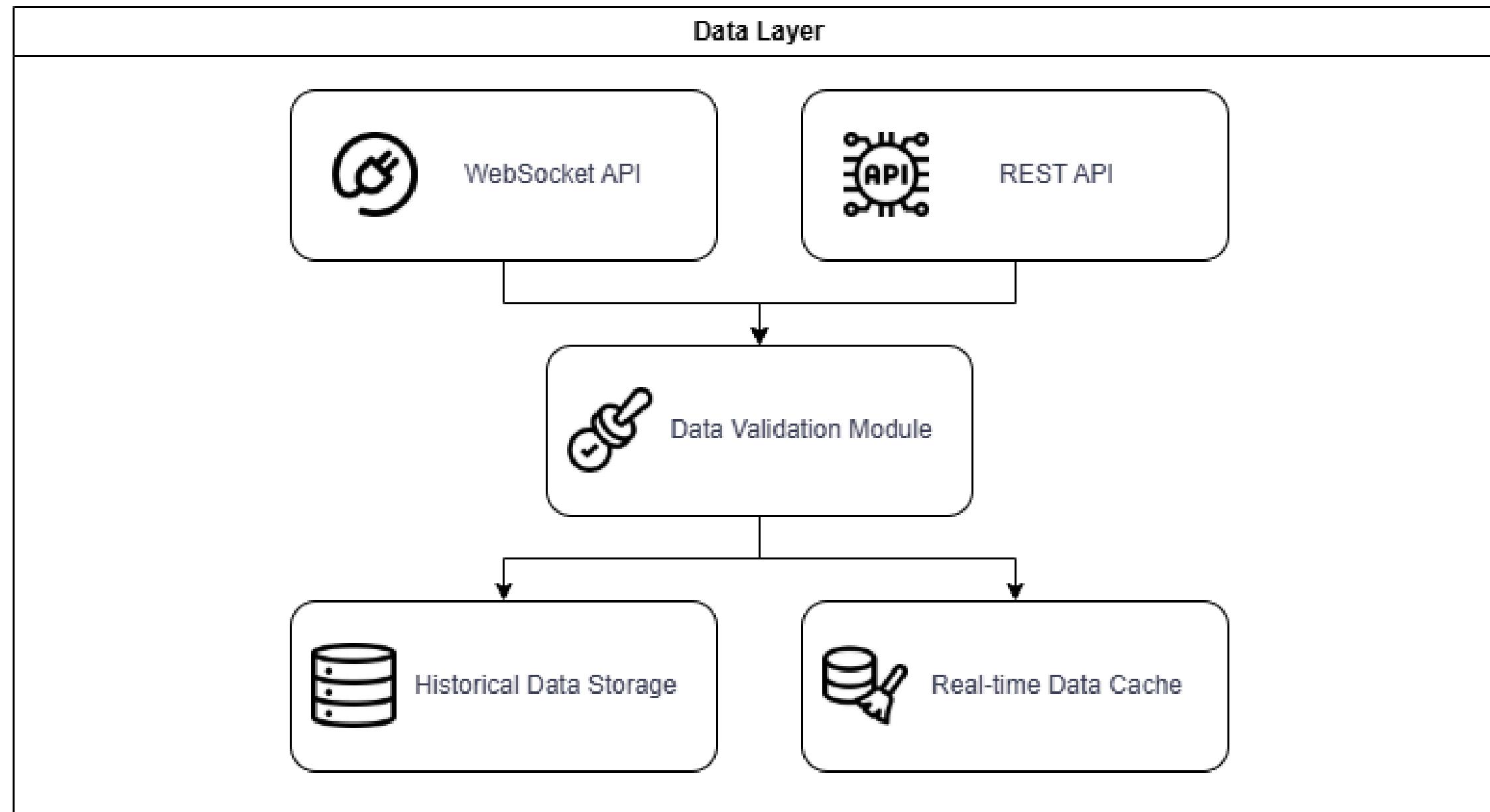


**API
EXTENSIBILITY**

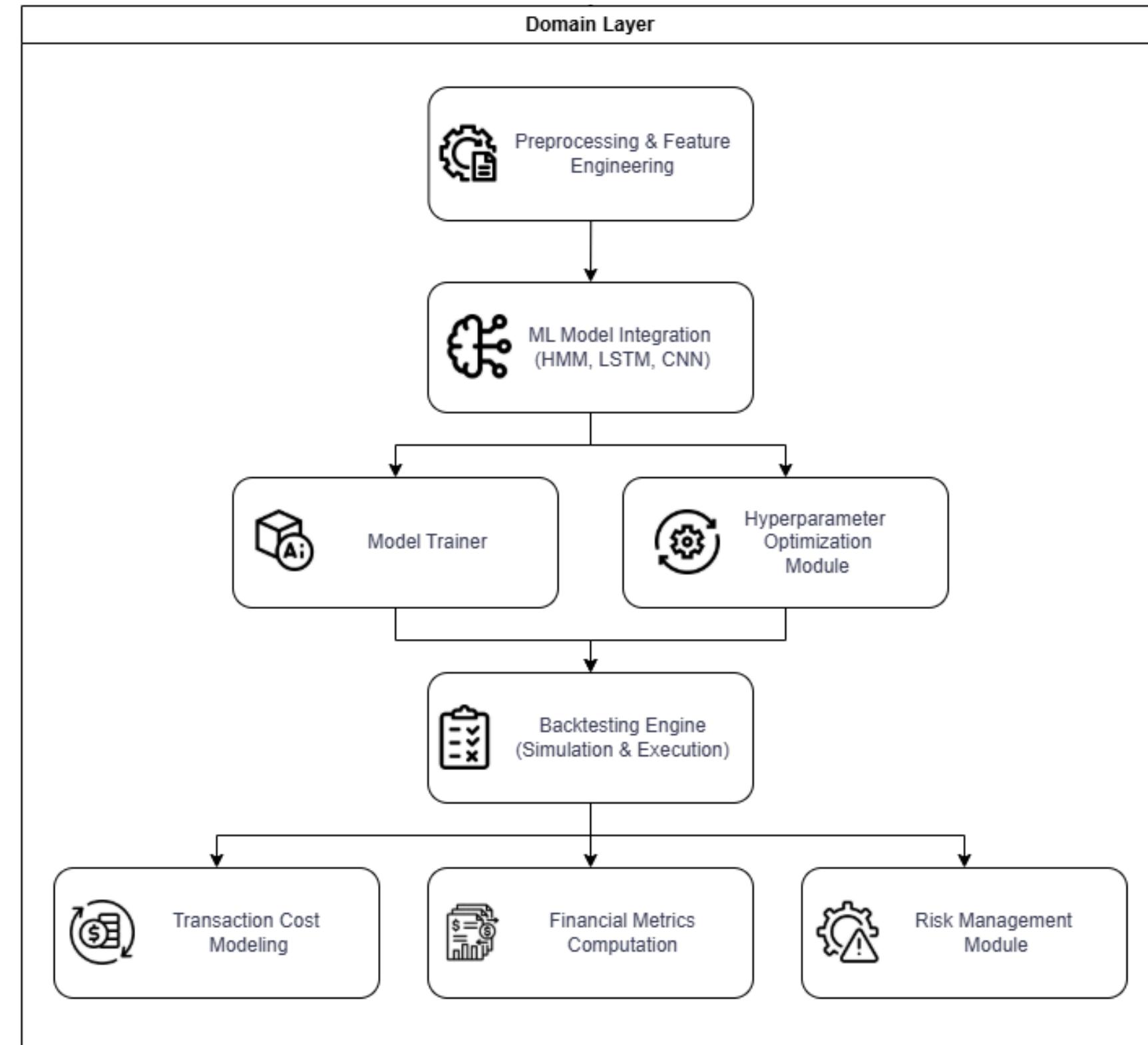


Structure

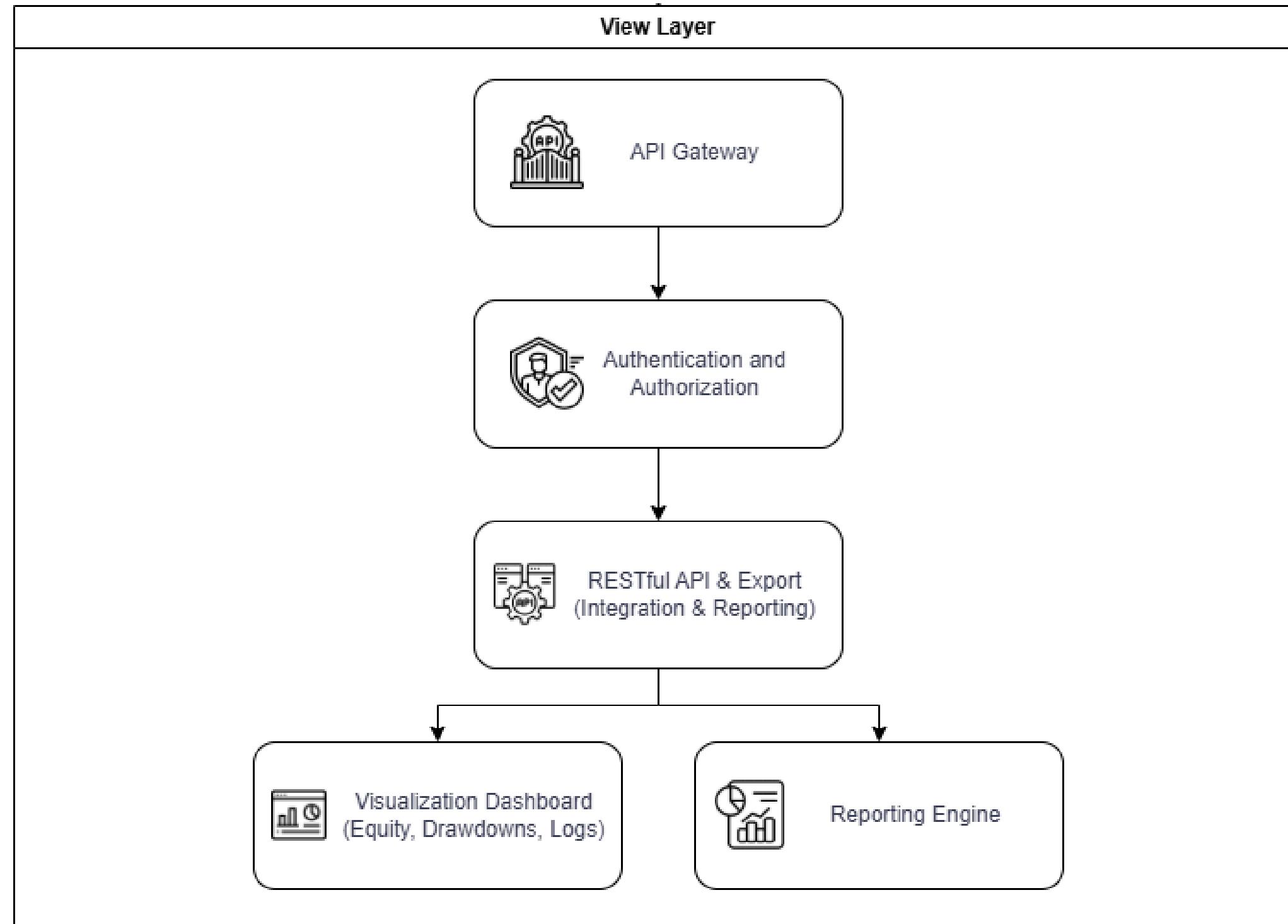
Architectural Diagram (Data Layer)



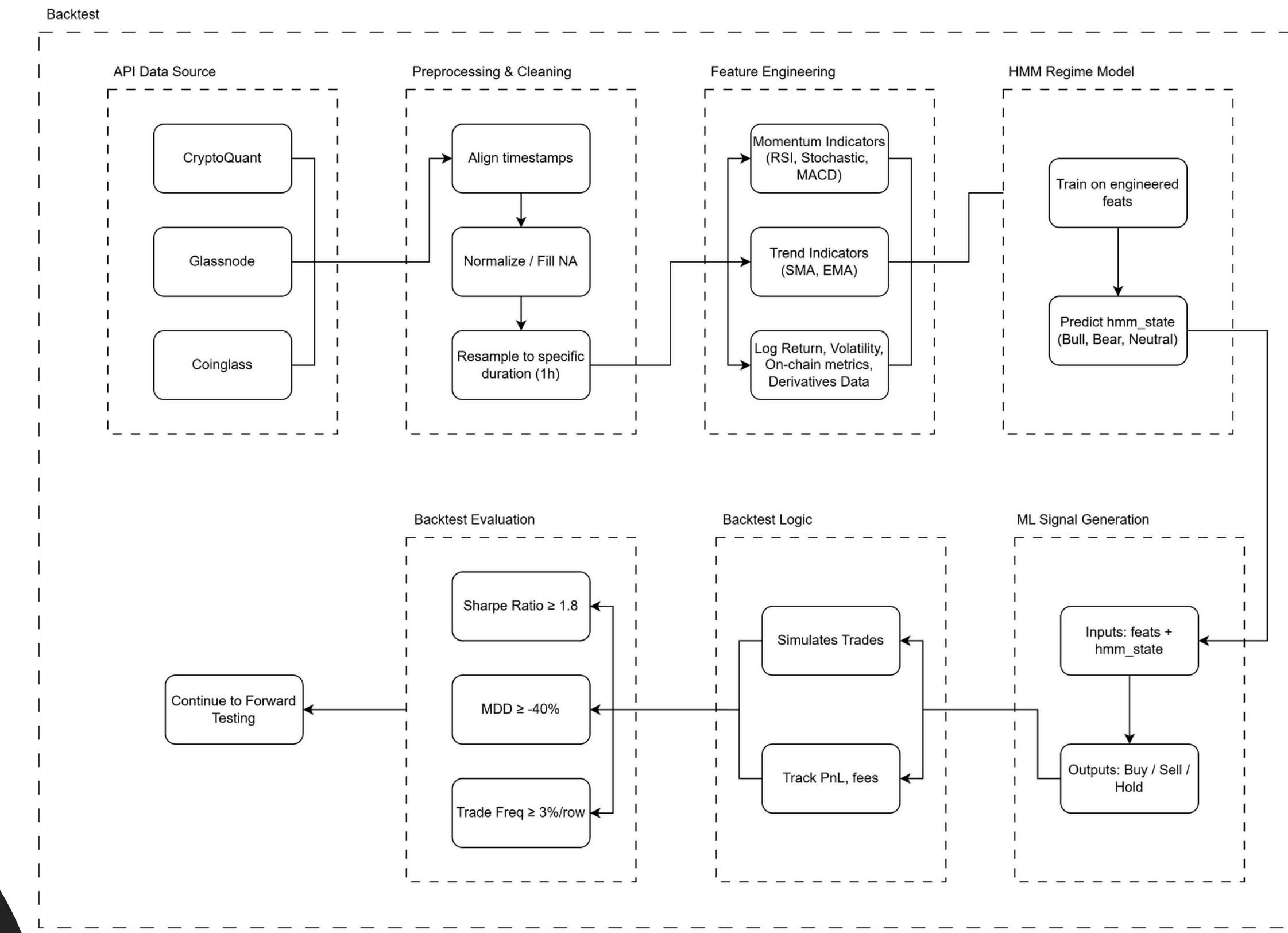
Architectural Diagram (Domain Layer)



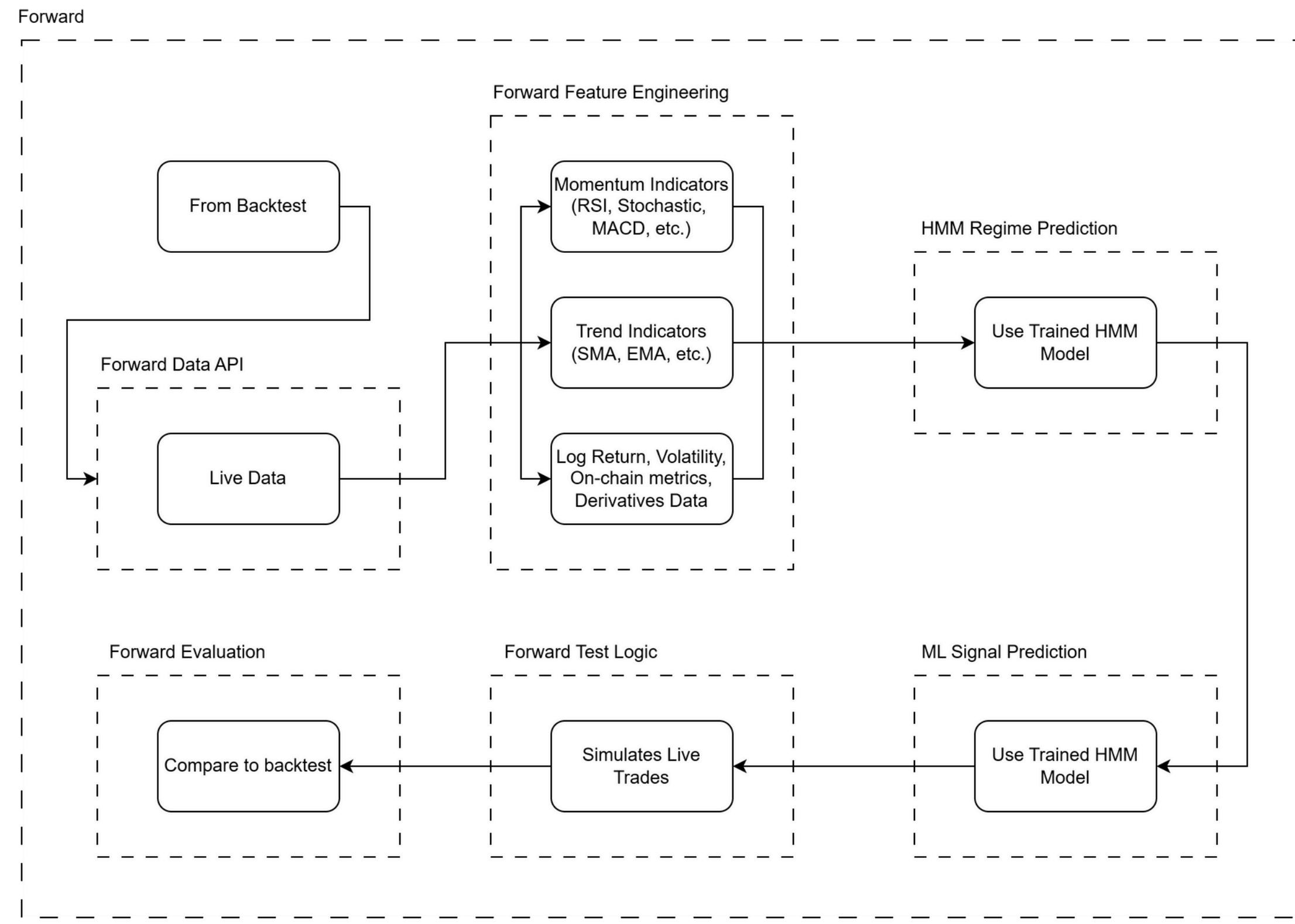
Architectural Diagram (Domain Layer)



Conceptual Diagram (Backtest)



Conceptual Diagram (Forward)



Target Users & Use Cases

Target Users	Description
Quant Analysts & Data Scientists	Build & backtest ML-based crypto strategies. → Smarter models, better signals.
Crypto Funds & Firms	Drive alpha with on-chain insights. → Optimize risk & returns.
Traders	Auto-generated signals, data-driven decisions. → Trade smarter, reduce bias.
Institutional Investors	Enhance portfolios with algorithmic strategies. → Maximize alpha, manage risk.
Portfolio Managers	Adapt allocations to market regimes. → Stay agile, stay profitable.

Real World Alignment with Balaena Quant

Rapid Strategy Testing and Model Deployment

Crypto-Focused Risk and Performance Metrics

Adaptive Hybrid Strategies for Volatile Crypto Markets

Scalable Integration into Crypto Trading Infrastructure



Execution

Performance Metric & Financial Impact

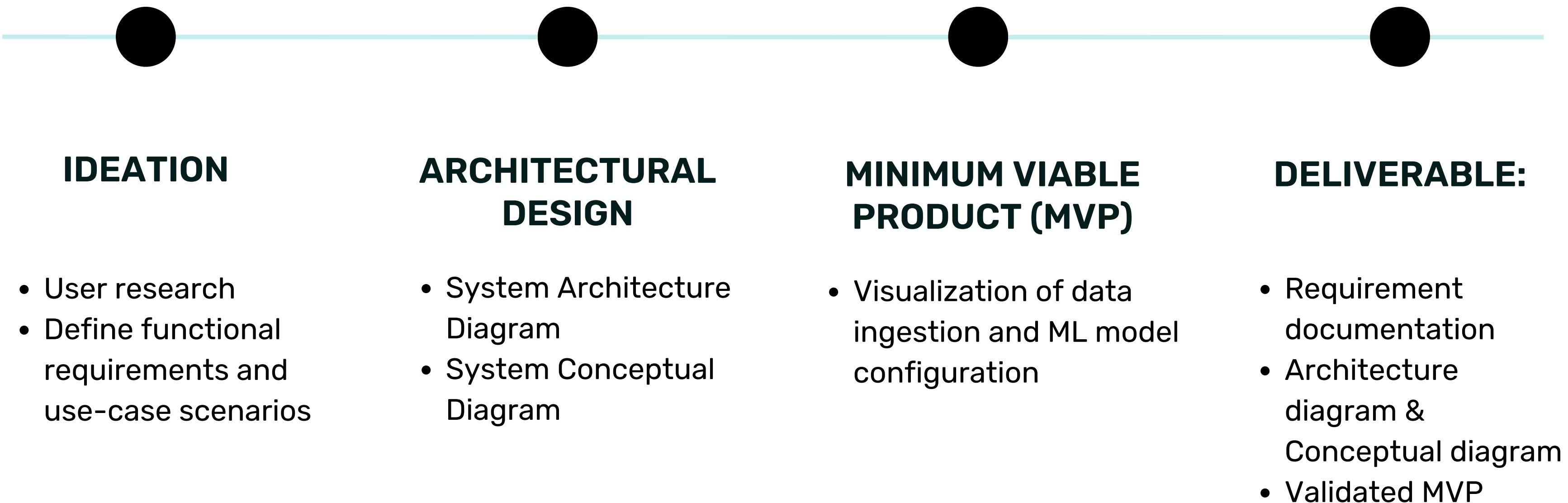
Sharpe Ratio (SR) and Risk-Adjusted Returns

Trade Frequency and Transaction Costs

Maximum Drawdown (MDD) and Capital Preservation

Profit Factor and Expected Return

Development Roadmap



Conclusion

ECHOQUANT:

- Combines advanced machine learning and quantitative finance to navigate volatile crypto markets.
- Hybrid architecture enables clear regime detection and robust trading decisions.
- Generates actionable, optimized strategies with effective real-time analytics and risk management.
- Designed for scalability and rapid deployment in professional trading environments.

Thank You!

