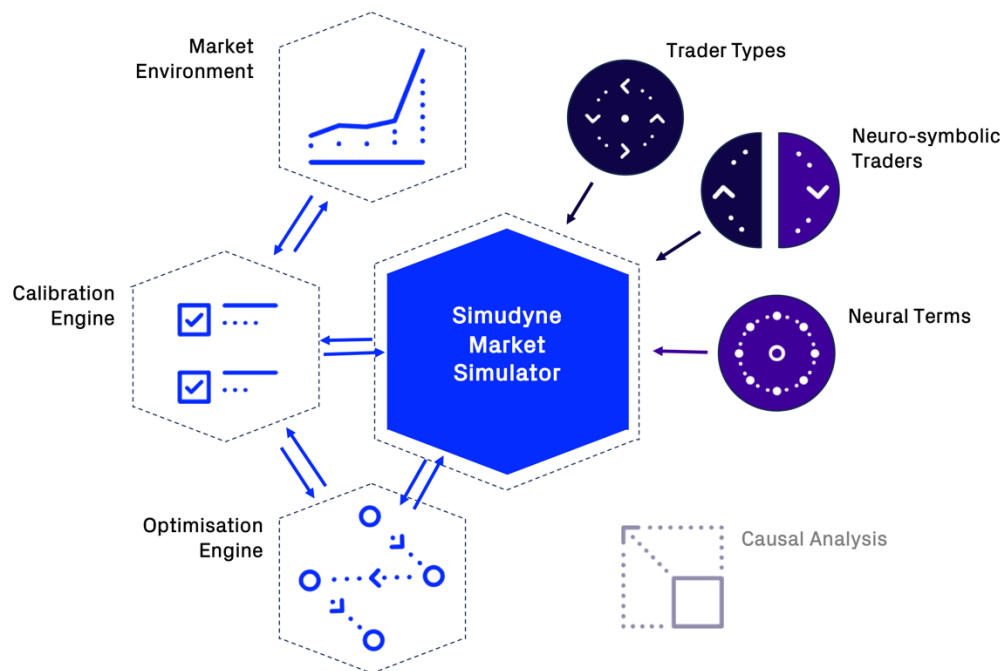# Simudyne Horizon

AI-Driven Market Simulation for Capital Markets

Simudyne Horizon is the most advanced multi-asset simulator on the market today, specifically designed to meet the complex needs of asset managers, quant-focused hedge funds, multi-manager hedge funds, and brokers. Horizon empowers quants and data scientists to develop and test trading strategies, create robust risk management frameworks, and explore innovative financial solutions using cutting-edge AI modelling and simulation technology.

Adaptive AI Integration

Horizon is built to seamlessly integrate with advanced AI methodologies, including Reinforcement Learning (RL) and GPT-style generative AI, creating a truly intelligent simulation environment. Capable of modelling multiple assets over extended timeframes—days, weeks, or even months—Horizon supports sophisticated decision-making processes that require high precision, adaptability, and strategic foresight.

Realistic Synthetic Data

Horizon generates synthetic data that faithfully reproduces key statistical characteristics (known as 'stylised facts') while accurately mimicking the price dynamics of multiple assets. This synthetic data is crucial for AI workloads, whether reinforcement learning or GPT-focused, by offering a highly controlled and realistic training environment. For RL, agents can explore optimal strategies under varied scenarios safely, while GPT-style AI models can better learn market language and generate deeper insights. The result is an exceptionally robust simulation framework that enhances AI models, keeping users ahead in a competitive financial landscape.

Seamless Data Access through LSEG Collaboration

Through our collaboration with the London Stock Exchange Group (LSEG), customers can access Simudyne Horizon directly via LSEG's platform, benefiting from LSEG's Historical Tick Data. Accessed through LSEG's S3 Direct Service on AWS, this integration provides a frictionless pathway to data, eliminating the need for time-consuming data preparation. Whether it's equities, derivatives, options, or futures, users can start sophisticated modelling and analysis immediately, generating faster and more impactful insights.

Innovative AI-Driven Strategy Development

Horizon is a powerful platform, built on top of Red Hat OpenShift and OpenShift AI, for those integrating AI into strategy development. In a recent collaboration, an asset manager used Horizon to identify optimal trading strategies in the futures market, enabling dynamic exposure adjustments to major indices like DAX, Nikkei 225, TOPIX and S&P 500. The environment acted as a rich training ground for RL agents, allowing them to discover novel, profitable strategies without risking capital.

Dynamic Portfolio Hedging

Another compelling use case is dynamic portfolio hedging. By employing reinforcement learning, users can determine the optimal hedging ratio for a futures portfolio against an index, dynamically adjusting positions—whether short, long, or leveraged—to maximize risk-adjusted profit and loss (P&L). This approach transforms hedging from a static strategy to an adaptive process that significantly outperforms traditional models, especially in unpredictable real-world conditions.

Regulatory Compliance and Stress Testing

Simudyne Horizon's synthetic data is a game-changer for regulatory compliance. In the face of stringent regulatory requirements for stress testing and risk analysis, Horizon allows financial institutions to simulate market shocks without risking actual capital. Users can stress-test their strategies under extreme market conditions and meet regulatory requirements—all within a secure, scalable environment.

A Catalyst for Strategic Innovation

The reinforcement learning environment is directly connected to Horizon, providing vast opportunities for training data expansion. The impact is clear: agents trained with simulation-generated data consistently outperform those relying on conventional datasets. Simudyne Horizon is far more than just a simulator—it is a catalyst for strategic innovation, providing unmatched tools for optimization, risk management, and gaining a competitive edge in financial markets.

Ready to Transform Your Strategies with Simudyne Horizon?

Contact us today to schedule a demo or speak with one of our specialists about how Simudyne Horizon can be tailored to meet your specific needs.

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