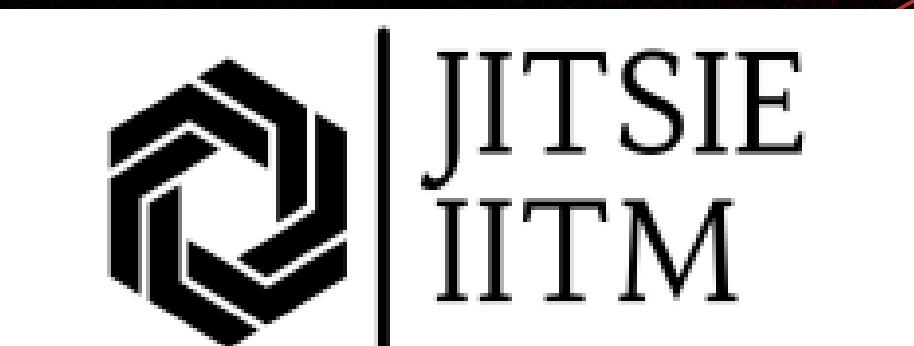


START-A-THON



QUINE

replit+

polygon

SAPPHIRE

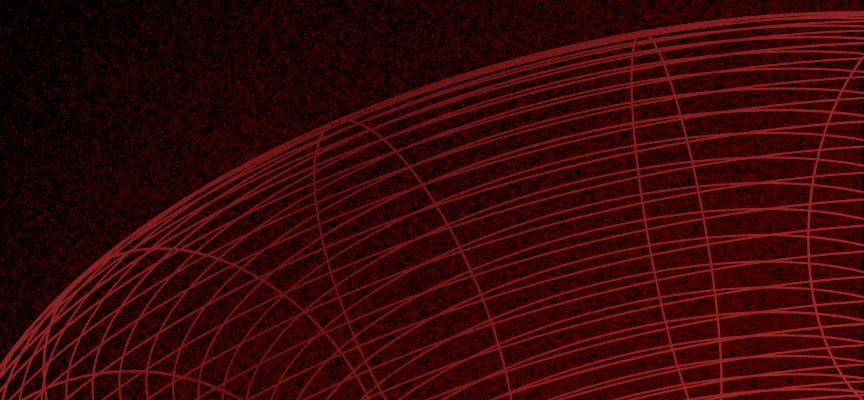
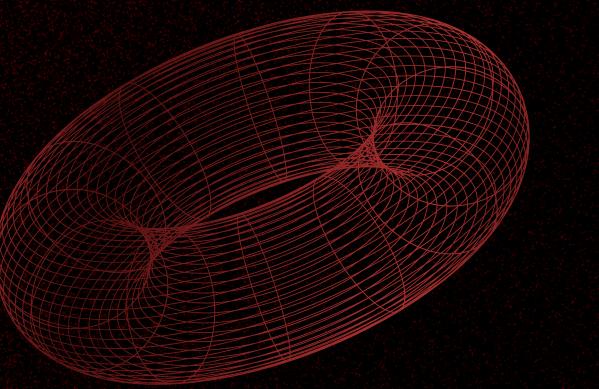
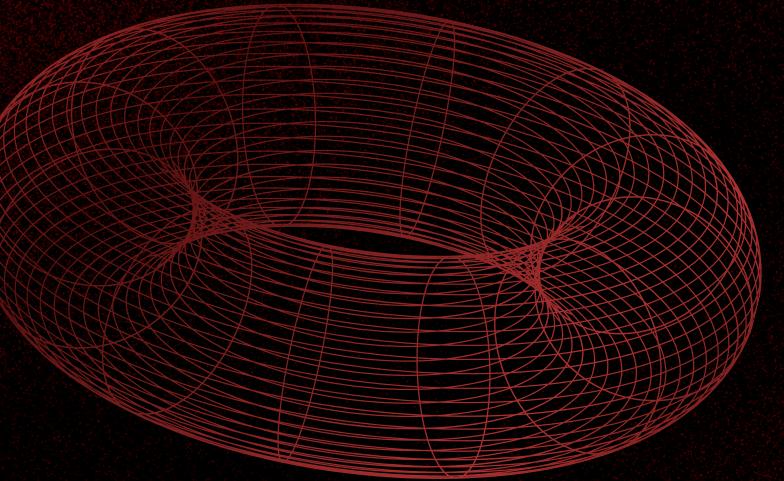
DETAILS

The challenge is building an AI-driven trading system using Deep Reinforcement Learning (DRL).

Furthermore, there is a lack of experimental testing in real-time, online trading platforms and a lack of meaningful comparisons between agents built on different types of DRL or human traders.

This addresses the need for more efficient and adaptive trading strategies.

Problem Statement



SAPPHIRE

VISION

Quantitative Trading has become ubiquitous across differential financial markets and currently accounts for more than 70% and 40% of the trading volume in developed markets (e.g. USA) and emerging markets (e.g. China), respectively.

We take the ensemble strategy proposed by Yang, Liu as the baseline and further expand on their work, so the training environment, state space, behaviour space and value function we use are consistent with it.

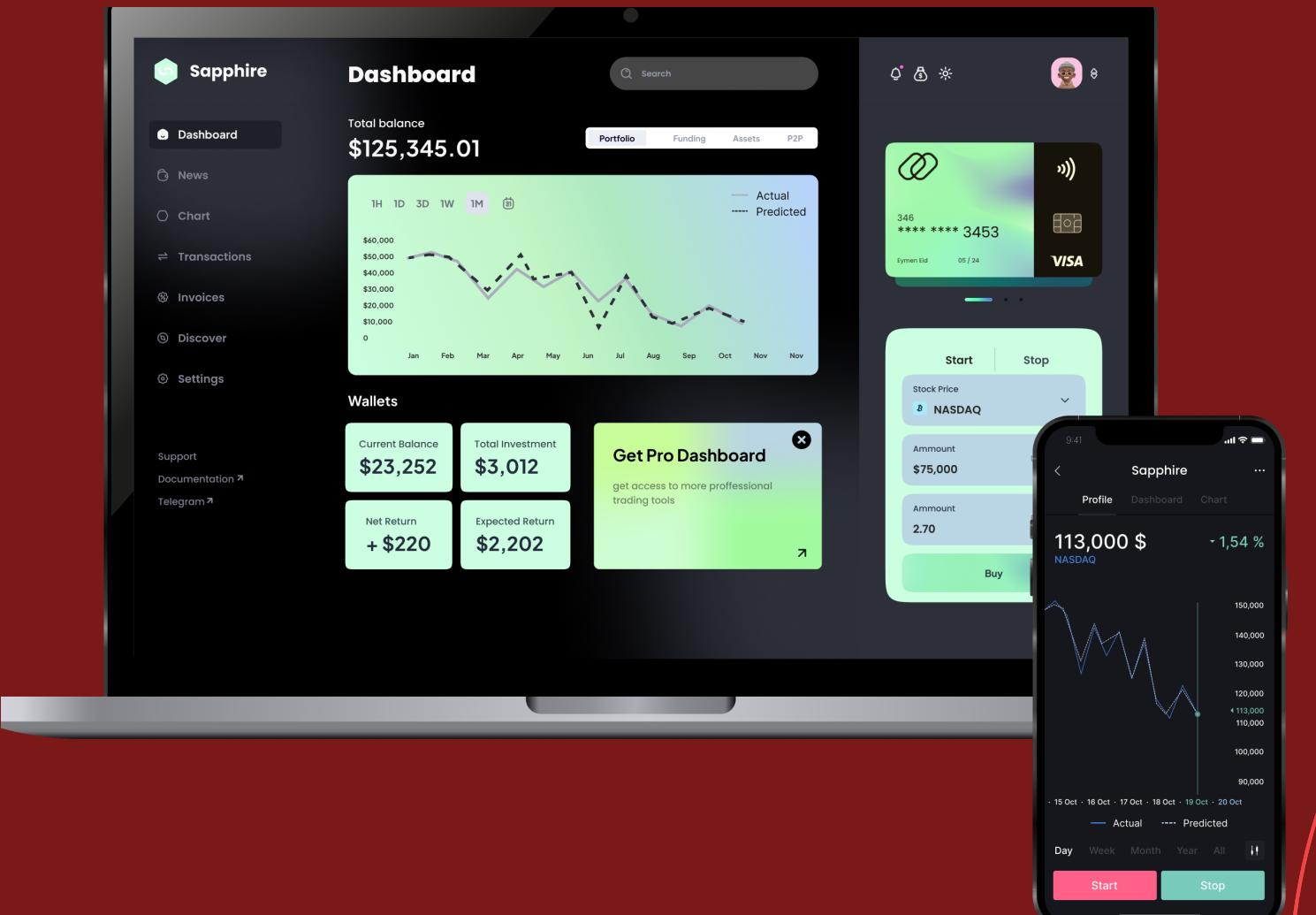
Markets

Developed
70%

Emerging
40%

SAPPHIRE

Proposed Solution



To solve the challenge, we plan to develop and implement a DRL-based trading algorithm.

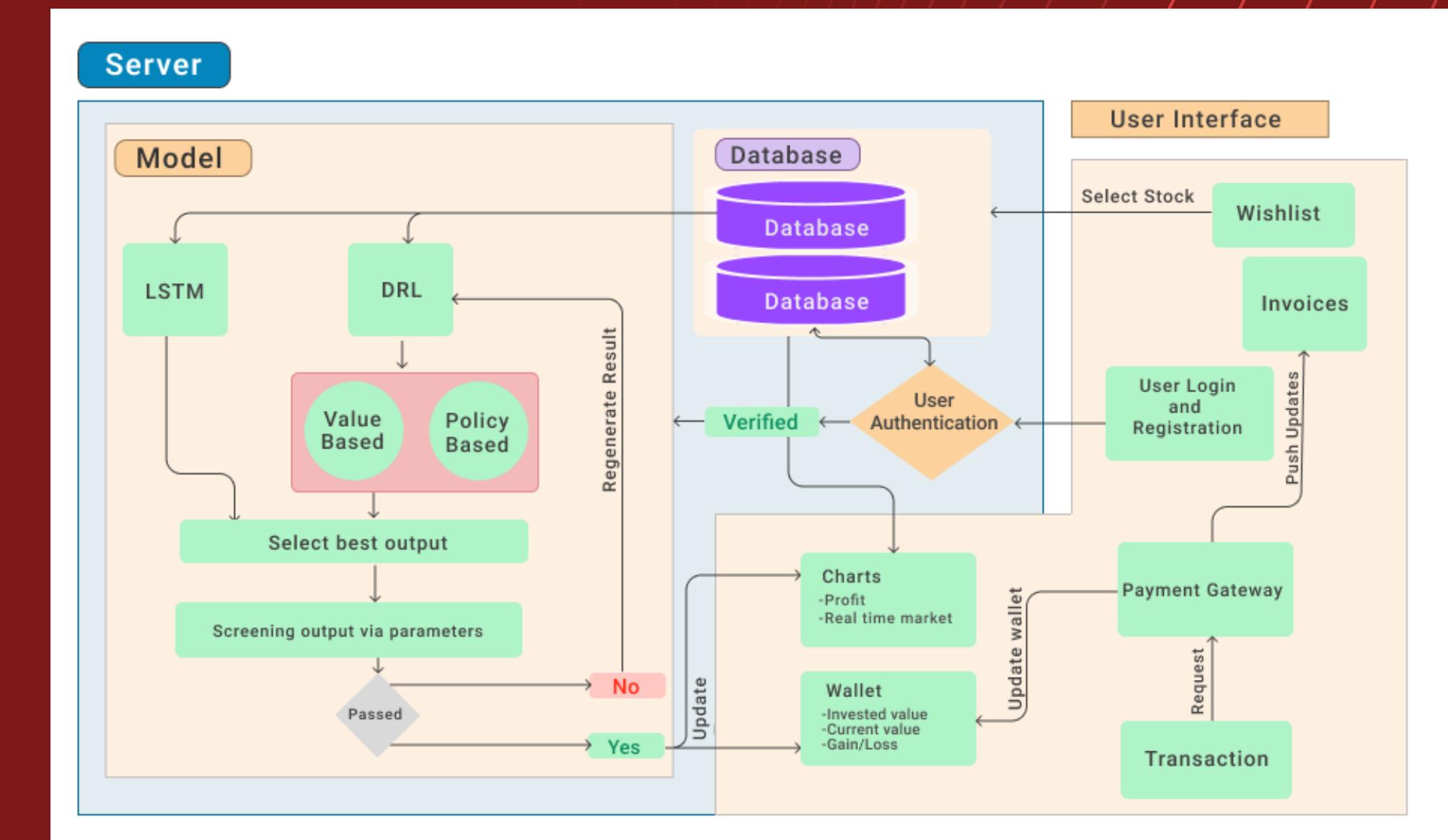
A secondary question that arises naturally from this topic is : can DRL lead to a super-human agent that can beat the market and outperform professional human traders?

To achieve that, I believe to involve training the algorithm on historical market data to learn optimal trading strategies. The model will adapt to real-time market conditions, making autonomous trading decisions to maximize returns. Rigorous testing, validation, and continuous monitoring will ensure the algorithm's robustness and effectiveness in real-world trading scenarios.

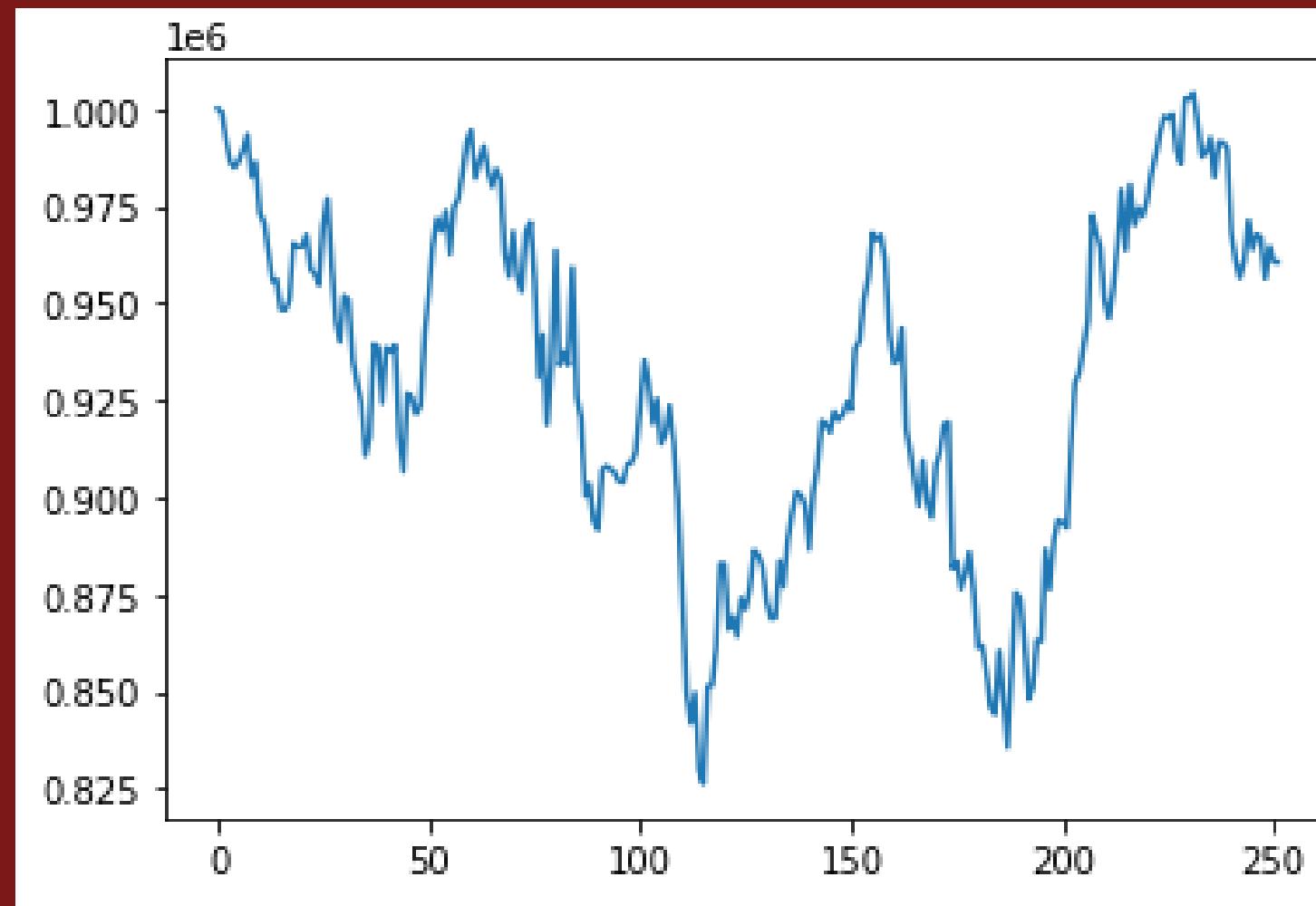
SAPPHIRE

MVP

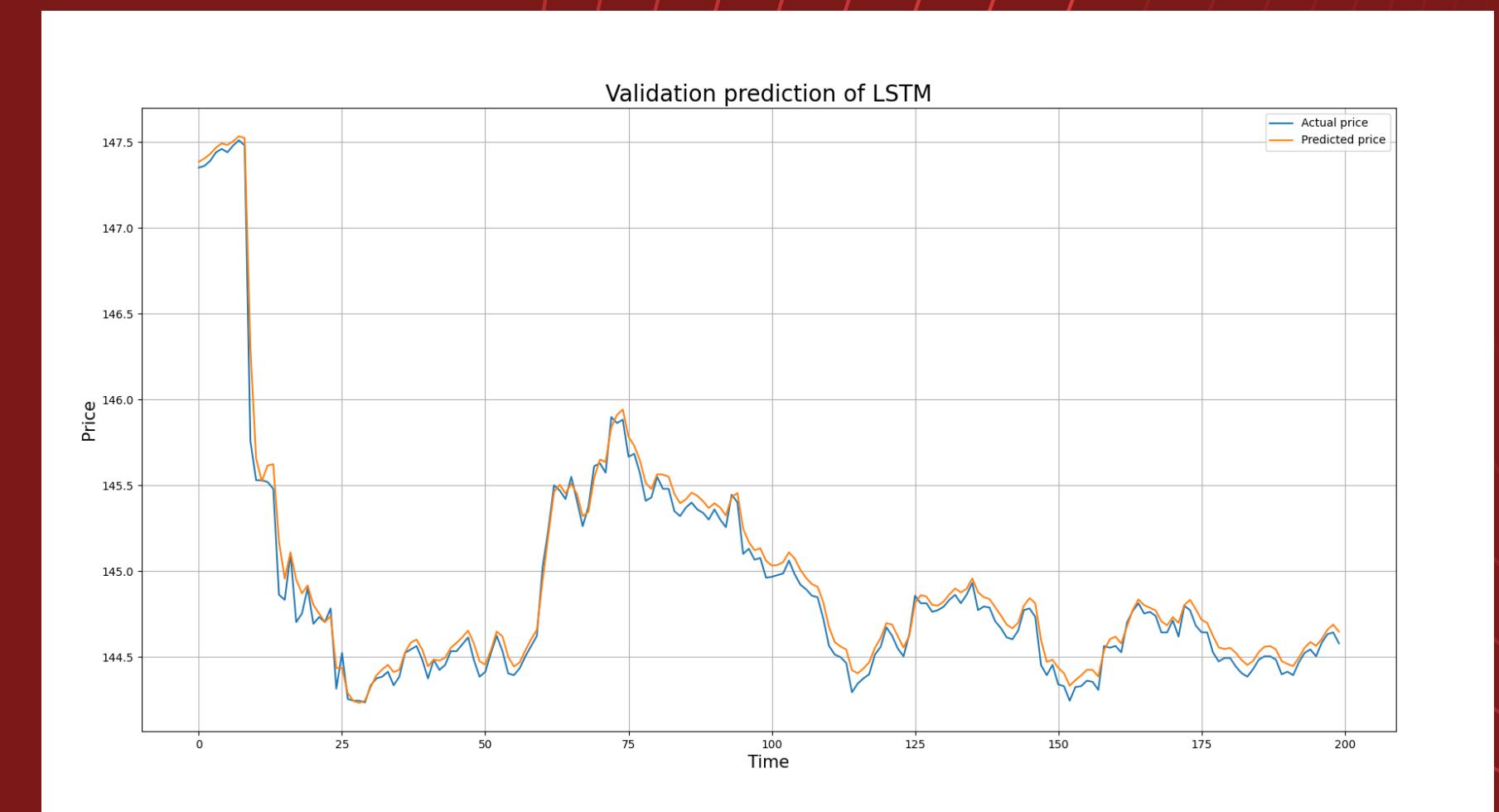
Sapphire deploys a dual approach, combining ensemble LSTM and DRL algorithms. It starts with comprehensive model training to grasp market nuances. A user-friendly interface is designed for secure investments. Users execute trades on NYSE/BSE, and real-time results are reflected on their dashboard, ensuring optimum returns, all in one seamless process.



Prediction Analysis



Plot of the account value over time, as a final output from the DRL model.

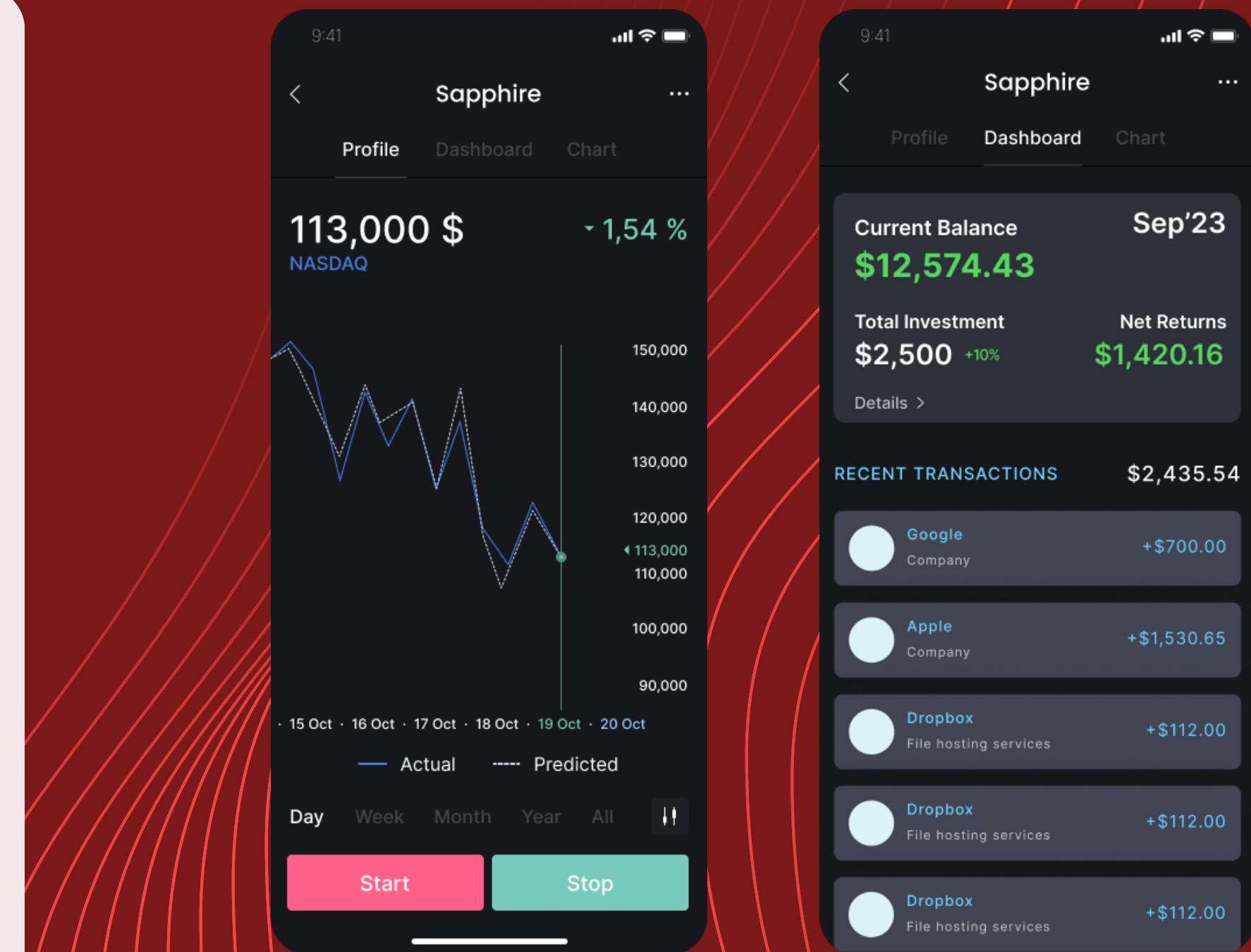


Plot of the validation data between the actual data and the model predictions

SAPPHIRE

Our solution's unique strength is its capacity to adapt to evolving market conditions for optimal decision-making. It offers self-learning algorithms for real-time adjustments, featuring dynamic portfolio management, risk assessment, and a user-friendly interface for monitoring and intervention.

While many funds rely on conventional methods, our AI approach adapts to dynamic market shifts in real-time. The user-centric interface offers an unmatched level of control, enabling secure investments and immediate insights. Unlike traditional hedge funds, Sapphire empowers users to actively engage in their investment journey, making it a unique and forward-thinking choice in today's market.



SAPPHIRE

Market Opportunity and Competitive Landscape

Our solution targets institutional investors and trading firms, demographic aged 25 to 55, well-versed in algorithmic trading.

The AI trading market, valued at 32% of all the trading market, offers ample growth potential. Main competitors include the huge trading hedge funds and HFTs; that employ algorithmic trading. Our unique focus on Deep Reinforcement Learning ensures adaptability and real-time decision-making.

With a user-friendly interface and comprehensive risk assessment, we differentiate ourselves, poised to capture a significant share of the expanding AI trading sector.

SAPPHIRE

Business Model, Go-to Market and Strategy and Funding Ask

Our business model centers around offering a AI trading platform.

Users can access the features for free when they invest amount into the real time market scenarios. We also provide licensing options for institutional clients seeking seamless integration.

Users invest their capital, which is then actively managed by the bot. We generate revenue through a percentage of the capital gains made by the user.

This approach aligns our success with that of our users, establishing a true partnership in their investment journey. Our model only prospers when users profit, emphasizing our commitment to their financial success.

Future Plans

OUR COMMITMENT IS TWOFOLD: CONTINUOUS ALGORITHM REFINEMENT FOR OPTIMAL USER RETURNS AND A RESILIENT USER INTERFACE. WE PRIORITIZE DATA-DRIVEN INSIGHTS, MODEL FINE-TUNING, AND STAYING ABREAST OF FINANCIAL TECHNOLOGY ADVANCEMENTS.

SIMULTANEOUSLY, WE FORTIFY THE USER INTERFACE TO ENSURE A SEAMLESS USER JOURNEY FROM INPUT TO EXECUTION. THIS DUAL FOCUS ENCAPSULATES OUR DEDICATION TO MAXIMIZING YOUR SUCCESS IN THE FINANCIAL MARKETS.