



ASPECT Lightpaper

An Introduction to Aspect



“The world of finance is complex. Aspect tackles the steep learning curve for finance through gaming and competing.”

— Avril Cui,
Founder of Aspect

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- I think it would be worthwhile mentioning target audience + the other unique points in this first sentence that you mention below - including simulation independent of real world events, your trading bots, etc. Gaming and competing are features people have used already - what makes Aspect unique?

In the past century we have experienced dramatic booms and crashes in the stock market, as evident through the 2008 Financial .. The volatility, exacerbated by COVID-19, has shown us the importance of a strong fundamental grasp on finance. Therefore it is essential....

Introduction

VOLATILITY, COMPLEXITY

In the past century, we have experienced dramatic events in the stock market, including market crashes like the Great Depression and the 2008 Financial Crisis, market booms like the Roaring 20s and the tech stocks in the 1990s, and special events like the 1987 stock crash due to automated trade and the 2000 Dot-Com Bubble.

In recent years, specifically since the COVID pandemic, the stock market is becoming increasingly volatile. Around 80% of traders fail to profit from the market. Therefore, it is essential for all investors to learn the fundamentals of finance, including financial terminologies, models, and patterns in the stock market, to capture opportunities best and avoid risks existing in the market.

At the same time, available financial tutorials online are often either confusing or sophisticated for newcomers to understand. They are especially not prepared for middle school, high school, or even college students not majoring in finance. Most financial terminologies and concepts are interconnected, underscoring the importance of learning them in a logical sequence.

I think your logic here is great - definitely can cut down on both the first and second paragraph significantly (see my note)

Add market size (\$) highlighting Aspect's potential and really expand on this paragraph a little more. Remember to connect logic of fundamentals of finance to why this product helps - esp with finance professionals with a finance background still failing to profit

Overview

Aspect combines theory-based finance knowledge with application by..

Aspect is a website that gamifies the learning of finance by creating a virtual stock market to enable users to learn terminologies and models, analyze stocks, simulate trades, and compete.

The game is scenario- and event-based, **independent** providing users with a place to discover sets of trading strategies that suit them and could optimally assist them in capturing market opportunities and avoiding market risks.

smth like solidify finance knowledge, develop niche-specific trading strategies...

Contrary to all existing market simulators,

- Aspect's stock market is virtual and independent of the current real-world stock market. In fact, the Aspect stock market contains intense events, suggesting a frequent and drastic fluctuation of prices. This gives users a chance to experience trading under special market events (like a major stock crash or boom) within weeks. **which can help them...**

Users could also learn financial literacy while playing the market game.

Around 100 detailed articles on financial concepts and terminologies are provided on the website, breaking into seven sections: Accounting, Valuation, Trading, Portfolio Management, De-Fi, ESG, and others. The terminologies would be crucial in the games, as users will be frequently reminded of the terms as the game progresses. A solid understanding of these terminologies and concepts is important to achieve high returns in the Aspect stock market by the end of each season. Learning these terminologies would also prepare users to perform financial analyses individually and use the models to assist trading in the real-world stock market.

THIS IS AN UNIQUE, DYNAMIC STOCK MARKET.

Mission

Learn with gaming, gaming with peers.

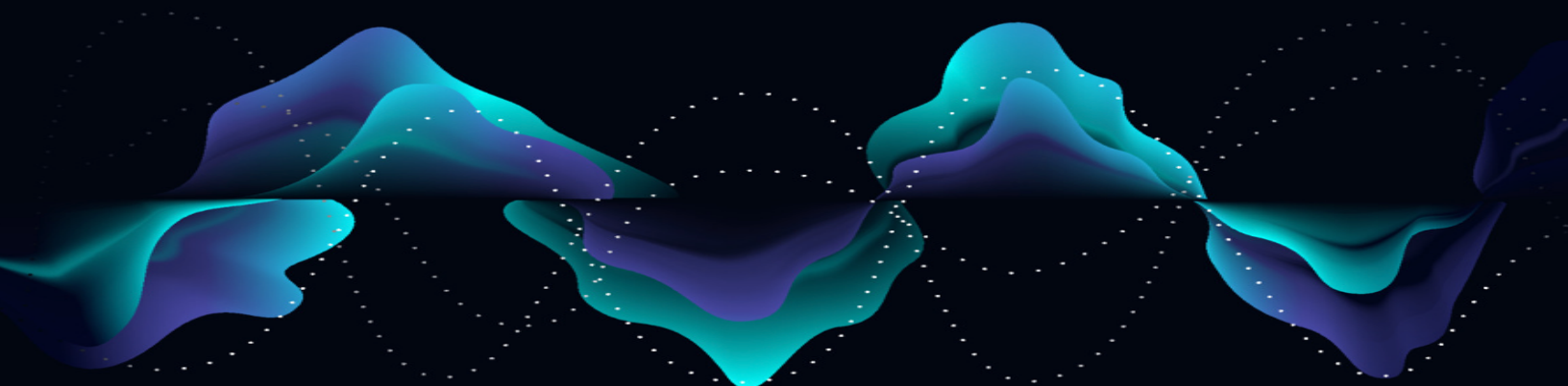
The mission of Aspect is to lower the barrier to entry into the finance world for young investors interested in the field. We hope to create an interactive environment for players to learn the fundamental of finance, discuss with peers, and experiment with the dynamic stock market.

Vision

Aspect aims to create a virtual stock market with **intense and interesting companies and market events parallel to the real world**. By doing so, we hope to simulate the experience of trading under exceptional market events, which will prepare users for trading individually in the stock market.

smth like 'preparing young traders for the future of trading'

Interesting, Simple Learning Experience



Terminologies and Theories

Complex Concepts, Simple Explanations

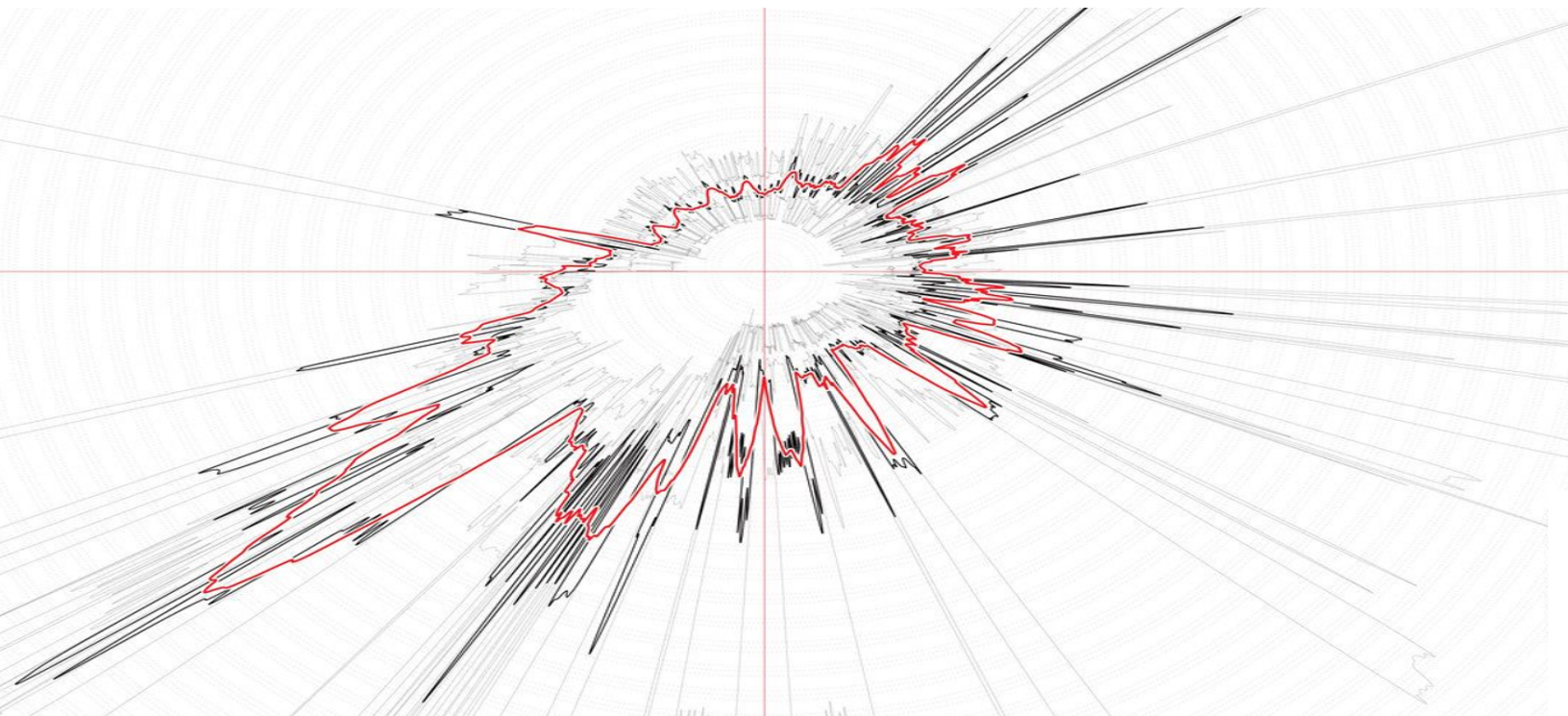
bold first sentence with key words for each of these paragraphs -> selling point.

The website contains around 100 terminologies, splitting into seven categories: Accounting, Valuation, Trading, Portfolio Management, De-Fi, ESG, and others. The terms will educate users basic understanding on fundamental analysis, technical analysis, risk management, types of financial securities, and trading strategies that will help with future investments in the real-world market.

All terminologies are written in simple and straightforward language, with abundant examples, graphics, and visualizations. **The goal is to simplify the learning process of finance through more logical and direct materials.**

An overview is provided for each of the seven sections under terminology, suggesting the recommended learning routes. Most sections will begin with definitions of the core terms and end with tutorials on applications such as how to create models related to the topic. Users can also use the search feature to look for specific terms. Under all terms, users can share their opinions and discuss with each other in the comment section.

In the Aspect market game, the terms are associated with the market events. For each week, several selected terms will be displayed, assisting players in the following week's trade.



Aspect Market Overview

Analysis Information, Make Decisions

The game is built based on a seasonal cycle. Each season has one or two central, macroeconomic events. All individual companies are also constantly experiencing various market and company related events. While some events could result in a straightforward impact on the market price, some events have influences that seem counterintuitive for users new to finance. But all market phenomenon has a reason behind them. Abundant news articles, graphs, and statistics are provided on the website. By collecting sufficient market information and building investment decisions based on their analysis, users will learn to catch market opportunities and handle sudden market risks. At the end of each season, detailed explanations and analyses will be released by the Aspect Development Team for all companies, explaining the market trends, major events, and trading behaviors that occurred during the season.

some examples may include...(give examples of these in each bucket below)



NEWS

News is provided to inform the events happening in the market or companies. Many news articles contain hints about future stock growth, although some hold strong opinions. Users should identify valuable information hidden in each article and use this information to build investment decisions.



GRAPHS

Price graphs from 3-minute, adjusted, and day dimensions are provided to show the trend and motion of price changes. Graphics on each company's core business, valuation on stock, and their fundamental strength and weaknesses are also embedded. The various dynamic graphics will assist users in evaluating the stocks.



STATISTICS

Statistics mainly focus on a company's financials from five dimensions: valuation, income, balance sheet, cash flow, and dividend. Online spreadsheet templates are available on Aspect to assist users in working with fundamental and statistical models when performing financial, risk, and portfolio analyses.

Aspect Price Architecture

Patter and Trends From Stochasticity

Equilibrium price at a given time for the market and all individual companies are determined by the market's supply and demand. The latest transaction price would be the newest equilibrium price at the next tick.

I think you should emphasize this slide more and how unique it is to your product - what is the insight that you have that makes this so valuable?

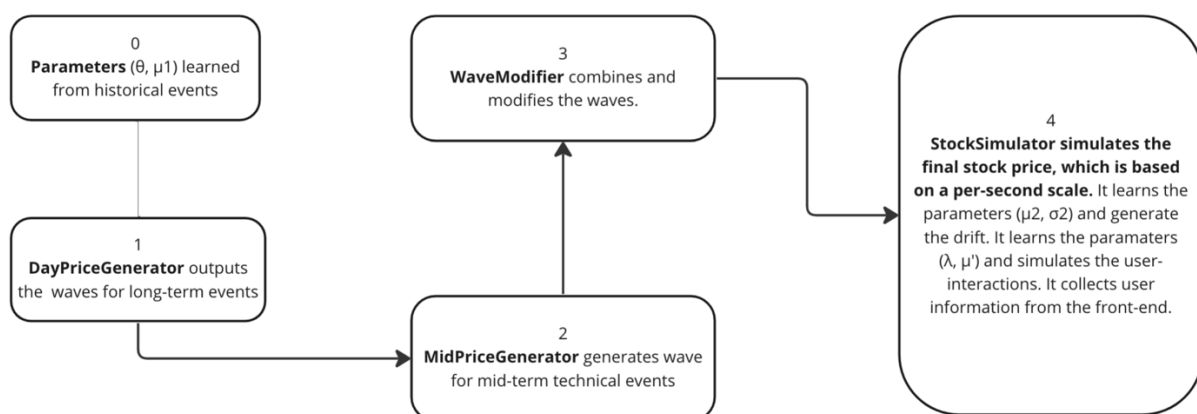
To educate users on handling market opportunities and risks under exception events, the website is featured with **a price engine to control the price fluctuations in Aspect**. If no transaction proceeds at a given time, the equilibrium price will follow the price engine's output. There will always be available shares for buy and sell at the price engine's output.

The price engine could generate groups of stock prices for virtual companies that follow fundamental financial patterns while resembling reality. The Aspect Stock Price Simulator Engine categorized factors that could affect stock prices into macroeconomic and unknown factors. Both elements are frequently changing throughout the time interval. The engine linked the two factors by applying two different stochastic

differential equations, the Ornstein–Uhlenbeck Process and the Geometric Brownian Motion. All price changes share the same distribution and are independent of each other.

The engine viewed the abstraction of stock prices as different waves and modified the waves based on their amplitude, period, and frequency. The daily price wave is combined with the mid-term price and then extended to a per-second dimension.

Parameters used in the stochastic processes were learned from major historical financial events. The Aspect Development Team conducted research and analyses before deciding on the reference events. The events would be related to the central themes during each season. The Aspect Stock Price Simulator Engine will establish a trading environment for users to test their investment strategies in a market with intense and frequent events so that they would learn to handle stock booms and crashes in the real-world market in the future.



Auction House Structure

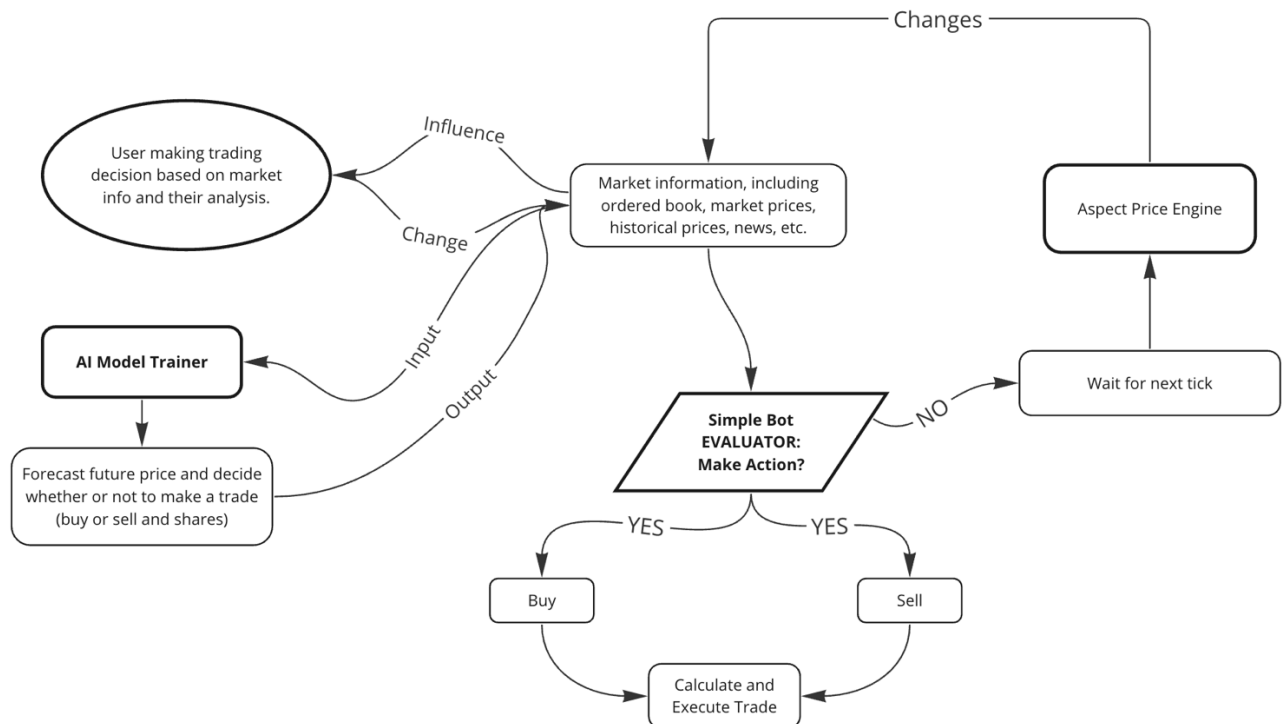
All Decisions Influence Market Trend

Contrary to all stock simulators in the market, user decisions influence the stock prices in the Aspect stock market. Through putting ask and bid orders in the auction house, users' demands and supplies change the equilibrium price. When a user's pending order goes through the transaction, the order's price will become the new equilibrium price at the next tick.

Besides users, there are trading bots coded with investment strategies that are constantly buying and selling in the market. Each instance of the trading bot has a unique trading strategy that either mocks a type of investor or implements a statistical learning model for decision-making.

When a user puts an order at a price that is not the current equilibrium price or the price engine's output, the order will be set in the pending state. As a part of the auction house rules, users cannot take each other's pending orders to prevent malicious actions such as transferring cash or cheating. However, they can accept the orders put by different bots. Their pending orders will also be evaluated and taken by the bots in the market.

Therefore, user decisions will alter the fluctuation of company prices, increasing the interaction in Aspect market game.



Aspect Trading Bots

Artificial Intelligence Bots Performance in Trading

I think id recommend adjusting the layout of this page by starting with smth like "addressing diversity and fairness through AI trained bots"

In the Aspect Stock Market, two types of trading bots are programmed. The core functions of the trading bots are: 1. Constantly put ask and bid orders in the market to diversify the price movement. 2. Evaluating orders put by the users and accepting the orders if requirements are met.

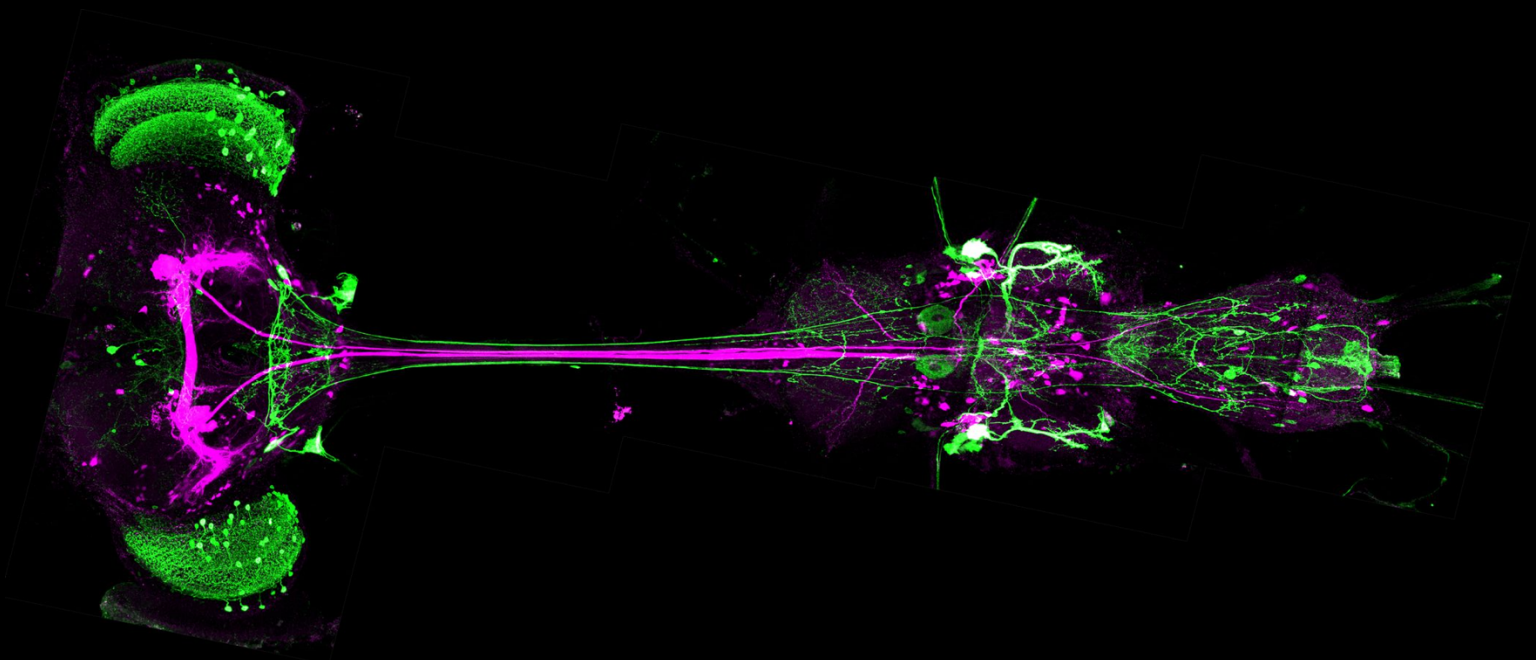
Bot one contains instances of bots that follow economic gaming strategies, decision-making models, or commonly used technical trading strategies. Most strategies in Bot Type One are simple and direct, aiming to modify different aspects of investors existing in the market.

Bot two contains AI bots with more advanced strategy models, primarily statistical learning models on regression or classification. These

strategies are more complicated compared to Bot One and are commonly used in HFTs and algorithm trading. These bots aim to experiment with the performance of more complex statistical models' performance in a stock market with exceptional events, an economic crisis or a stock boom.

By accepting market information, including historical prices, current prices, stock volumes, news, and financial statistics, the bots will evaluate the situation based on their own strategies and decide whether or not an order should be put or accepted.

The bots will increase the diversity and ensure the fairness in the game.



Production Team

Personally think you should emphasize your background and your team as high school students who
a) have past experience learning finance, understand pain point
b) have network of users to test readily

About The Production Team

Aspect was founded and developed by Avril Cui.

The core production team contains high school students from the United States, the United Kingdom, and China, working on marketing and product management.

We especially acknowledge the help from Xuduo (John) Wang, who helped brainstorm and structure the terminology and news sections; and Daniel Yelamos, who advised the product design and development process.



ASPECT

Stay Connection With Newest Updates on Aspect!

Learn more on Aspect →

Website: <http://www.aspect-game.com/>

Contact Development Team →

Email:
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Follow latest updates and
news on Aspect →

Twitter:

[@aspect_game](https://twitter.com/aspect_game)

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YouTube

[Aspect Game Master](https://www.youtube.com/AspectGameMaster)

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