Cryptora White Paper v0.1

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Disclaimer

This document presents the current state and future vision of the Cryptora algorithmic trading dApp. Cryptora is still in the early stages of development, the details in this document are subject to change, all values and/or dates may be altered in future iterations of this document. The exact numbers for the tokenomics discussed in this paper are yet to be determined.

Abstract

The Cryptora team strives to help investors trade smarter by revolutionising the way in which we invest in Cryptocurrencies and other assets. In order to achieve this goal, the team is planning to develop an algorithmic trading platform, providing a simplistic and cost-effective way for retail traders to access specialised trading algorithms and invest more effectively.

These algorithms will be crafted by experienced traders among the Cryptora community by selecting a set of mathematical indicators and corresponding parameters pertaining to a particular asset. The UI will facilitate the creation of trading algorithms without the need for the user to have any coding experience. The algorithm creator is able to back-test the algorithm against historical data, adjusting parameter values and swapping out indicators to build the ultimate algorithm. The algorithm builders will earn a percentage of the profits that the algorithm generates for its backers. This allows experienced traders to earn passive income on algorithms they are currently using to navigate the market.

Less experienced traders are able to view a suite of algorithms for specific assets they are interested in holding and trading. Each algorithm will have a performance metric comparing that algorithm vs. buying and holding the asset over time. This provides users simple value to assess the effectiveness of each algorithm at a glance. There will also be a number of comparative tools for comparing different algorithms. For example, plots of the price of the asset, with makers denoting buys and sells, illustrating to the user when each algorithm is executing trades. This allows the user to see that the algorithm is in fact buying low and selling high. Additionally, there will be the ability to plot the profits made by numerous algorithms simultaneously, to further visualise their effectiveness and more.

Newer traders are often prone to FOMO, make emotional/irrational decisions and lack a trading plan, as they operate deterministically. We believe at Cryptora that new market participants should not be punished for their inexperience. Therefore, by creating Cryptora we believe that the platform will unite both veteran and novice traders, allowing them to benefit from one another.

Why Build Cryptora?

There are currently several services that offer access to algorithmic trading, however, despite increased returns compared to the average retail investor, these services have failed to gain mainstream adoption. There are numerous reasons for this. Firstly, the trading bots typically do not control any capital and only send notifications when buy/sell signals occur. However, timing is of the utmost importance in a trade. If a user is asleep or indisposed at the time, a valuable opportunity goes to waste and the user has not benefited from using the paid service.

Secondly, the trading bots that do control user capital lack transparency. These bots do not disclose the market indicators that are being utilised, meaning as a user there is no indication of the trade frequency of the bot or the portion of the funds the bot trades per trade. The opaque nature of these services fosters distrust in the users.

Furthermore, these services are highly centralised and offer a limited number of algorithms provided by the vendor. Meaning users are reliant on the expertise of a small group of individuals as opposed to a community of experienced traders.

Finally, access to these trading bots requires a significant initial investment or exorbitant commission fees on trades or often both. These fees prove too large a barrier for entry or cut into profits a significant amount, meaning the user does not feel as though they have an “edge” and are truly outperforming the market.

Why Terra?

Building an algorithmic trading platform as a decentralised application solves the issues plaguing current platforms. Deploying trading algorithms as smart contracts, allows user capital to be traded in a completely transparent manner. These algorithms are open source and verifiable, meaning users are completely aware of the events necessary to trigger trades and are aware of the portion of the total funds controlled by the algorithm involved in such trades. Additionally, the dApp allows for the permissionless creation of algorithms via a step-by-step UI. This ensures that anyone can create an algorithm and no coding is experience is required. This ensures that algorithms are sourced in a decentralised fashion.

Beyond smart contracts, the Terra ecosystem provides key infrastructure to augment our core vision with unique features, that provide immense value to the end-users. Using Mirror offers the possibility to trade mirrored stocks along with cryptocurrencies, broadening our potential user base. Additionally, Mirror provides the ability to short assets. This can be an extra layer to an algorithm, to buy low, sell high and short when bubble conditions are met. This allows the algorithm to buy low with the profits from both selling and shorting the peaks, further increasing trading effectiveness.

Furthermore, by leveraging Anchor we are able to provide users of the platform with two accounts, a savings account and a trading account. Funds deposited in the savings account will earn a double-digit APY thanks to the earn side of Anchor protocol. This allows the user to earn yield whilst they investigate various assets and their algorithms. Additionally, for low-risk users, they may choose to only trade using interest earned in the dAapp, maintaining their principle. Anchor opens up different meaningful strategies to investors.

Algorithms

Indicators & Parameters - daniel to add

- Two types of indicators, oscillators and moving averages
- There are two classes of parameters: basic and advanced. The basic option allows users to select from predetermined values classed as fast, medium or slow. These parameters dictate the frequency in which the algorithm trades. The advanced option will allow users to specifically select the parameter they want.

How the algorithm uses its allocated value

- % of the algorithm funds that get traded
- how much is in cash
- How do the fees that the app generates work
- .115% fee charged per trade which is a .23% fee for each closed trade
- how much do the algorithm creators get
- all inner workings of algorithms

Types of algorithms

The algorithms will be executing trades on different platforms, on both DEXs and Mirror. The capabilities afforded by these platforms to their respective algorithms differ, allowing for some interesting strategies to trade the markets. The different types of algorithms offered are as follows:

- Simple buy/sell algorithms
    - These willl interact with DEXs (Terraswap, loop, etc) to trade all crypto class assets available on the Terra ecosystem
- Mirrored Asset buy/long/sell/short algorithms
    - Leveraging mirror protocol, algorithms will be able to perform any combination of these four actions for all mirrored assets: buy low, long farm low, sell high & short farm high
- Trade farming algorithms
    - A subclass of the previous type of algorithm
    - These algorithms maintain a high level of their TVL in farming positions in both the short and long farms; they can be either net long, net short or delta neutral. They use the interest gained from mirror protocol, in the form of mirror tokens, to further fund trades in the asset at opportune times growing the TVL of the algorithm and therefore earning passive income for backers.

How to build an Algorithm

1. Select Coin type

2. Select the number of indicators

3. Select type of Indicators

4. Select Indicator Frequency

5. Backtest Algo

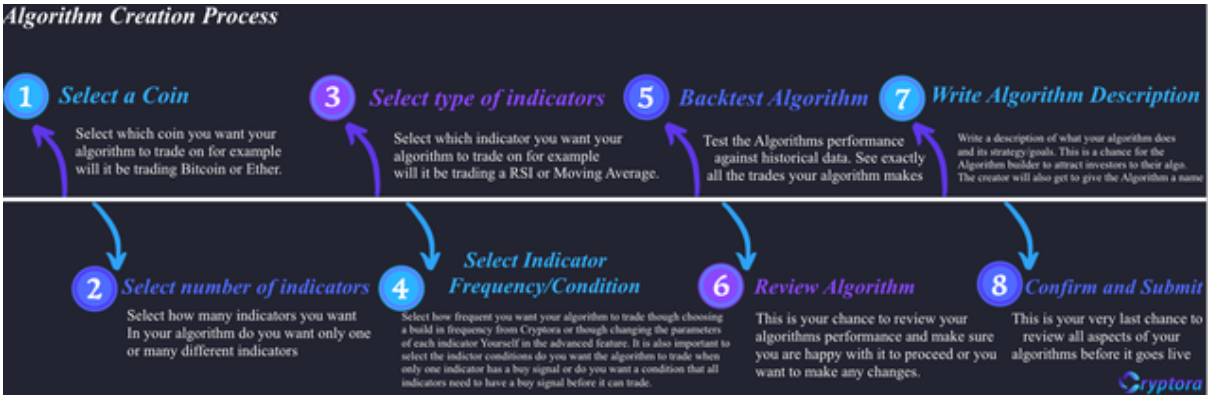
6. review algorithm

7. Name algorithm and write a description

8. Confirm and Submit

AI: Elliot some visuals would be great here, like a diagram or flowchart

daniel to ad



Differentiating Features

NFT Ownership of Algorithms

When a user creates their own algorithm, they will mint an NFT that represents their ownership of the newly created algorithm. It will be sent to the user's wallet. The income generated by the algorithm will be sent to the address of the owner of the corresponding NFT.

Furthermore, this allows algorithm creators to sell their intellectual property. If an algorithm is performing well and has attracted a large TVL, another investor may wish to purchase the algorithm as it is a reliable passive income source. The creator may wish to cash in, as they would be selling the NFT well above the mint fee they paid.

This creates an enticing sub-economy within the dApp and produces NFTs with established utility. We would like to partner with various artists and NFT protocols to create a library of artwork that can be selected from by Cryptora users when minting their trading algorithm NFTs. Additionally, we will over the option to use the image of the backtest as the image for the NFT.

Savings Account

The savings account allows the Cryptora app to couple the benefits of passive income through the growing DeFi space, with the explosive gains to be made by trading the volatility of the cryptocurrency market.

Any yield generating asset will be able to be deposited in the Cryptora savings account. UST will earn interest through the Anchor protocol. Anchor and Mirror tokens could be deposited into the savings account and the platform will generate interest by staking them on the user's behalf in their

respective governance staking pools. For the health of these two platforms and future platforms that adopt a similar model, a voting portal would need to be created that allows users to vote on governance proposals of their interest-earning governance tokens within the Cryptora dApp. This ensures that users are not forced to choose between providing income to their trading account and voting. Additionally, LP tokens for different farms could be deposited into the savings account and yield from the farm token used to fund the trading account. Finally, PoS assets such as Luna or bEth could be deposited and the platform will delegate these assets to trusted validator nodes to earn interest on these assets.

Users will be in complete control of the interest that the savings account produces. The savings account will have auto-compounding capabilities, meaning that the user can determine the percentage of their generated interest that is compounded or sent to the trading account. The user would be able to do these allocations holistically or in an asset by asset allocation.

For example, Alice has deposited UST, bETH and bLuna/luna Lp tokens from Terrasawp. These assets collectively generate 1000 UST per week. Alice decides that she would like to diversify her positions and allocates 40% of her generated revenue into her trading account, leaving the other 60% compounding in their various revenue streams. This would mean 400 UST per week in transferred into her trading account and 600 UST is auto-compounded into her established positions.

Alternatively, Bob who holds similar positions to Alice could set 100% of his interest earned on his UST to be sent to his trading account whilst having none of his bETH or LP sent to the trading account. If a user does not wish for certain assets to contribute to the trading account and only wants to see the size of these positions grow, this can be achieved through manual yield allocation.

The frequency of the redistribution of accrued interest into the trading account is set manually by the user. They may choose from daily, weekly, monthly and yearly time frames.

Additionally, users will be incentivised to stake these assets in their savings account via emissions of Cryptora token. - mention something about token utility - AI: daniel to add

Fee-less Trading for the Algorithms

Trades for the consumer are more capital efficient using the Cryptora platform as opposed to trading the assets themselves. Grouping capital together into a smart contract which is then traded via an algorithm results in gas fees being evenly distributed amongst the backers of the algorithm.

Additionally, the savings accounts of the users are providing a high-interest yield, a small portion of this yield could be used to fund all trading expenses and auto-compounding fees produced by the platform. The trading expenses include premiums for mirrored assets, slippage, transaction fees on DEXs and gas fees.

The users of the platform will be compensated with Cryptora token emissions for cutting into a portion of this yield.

It is important to clarify there will be small fees for the trades made to generate revenue for the platform, however, the expenses of executing a trade externally on the platform can be covered using this model.

AI: daniel to expand

Algorithm Risk Metric Evaluations

Cryptora will provide its users with a series of metrics identifying the risk of an algorithm. This is a consumer protection method to alert users to the aggressiveness of algorithms on the platform. For example, a moonshot trading algorithm should be marked appropriately to ensure that users are aware of the risk involved.

Return On Investment (ROI) - ratio between the net profit and cost of investment resulting from an investment of some resources.

Profit Factor - The Profit factor rate is the total amount of money the algorithm made for every unit of money it lost. This can be calculated by dividing the gross profits from gross losses. A profit factor of above 1 would highlight a profitable algorithm, this can give the investor valuable information about the algorithm's profitability before they make an investment. The larger a profit factor is for an algorithm the more profitable it is on a trade by trade basis.

Percentage Profitable - The percentage profitable rate is used to determine the percentage rate of each winning trade relative to the total amount of trades an algorithm has made. This is simply calculated by dividing the total number of winning trades by the total number of trades. This highlights to investors the accuracy of each trade the algorithm has made. This metric is not to be solely relied upon, as an algorithm could have a high amount of winning trades at smaller profit amounts relative to its losing trades. Therefore Percentage Profitable is best used in conjunction with the Profit factor metric.

Sharpe Ratio - This ratio is used to help measure the risk of investment relative to the risk-free rate. This is used to show investors how much risk was taken to achieve specific returns. The higher the Sharpe ratio, the higher the risk-adjusted return rate is. This allows investors to select investments that offer the highest amount of ROI for the lowest amount of risk. Through the use of this ratio, we can assign each algorithm with a risk grade displayed as a badge icon which can be used as consumer protection.

Below .5 = High risk

Between .5 and 1 = Medium Risk

Above 1 = Low Risk

Cryptora Ranking System - Cryptora has its own internal ranking system that uses a combination of these factors and metrics to rank each algorithm on the platform with the most successful algorithms appearing in the “Cryptora Picks” highlighted section of the app. This would be the most visible and accessible section which increases the likelihood of investors investing in the best possible algorithms.

Pine Script Integration

Trading View is the most popular site for the charting of assets. Trading view has a large community of trading veterans with advanced technical analysis skills. These users create pine scripts on the platform that use technical indicators to alert the creator of the opportunity of a desirable trade setup. By allowing pine scripts to be integrated into the platform, whereby a pine script from trading view can more or less be copy and pasted into Cryptora to create a trading algorithm, Cryptora can tap into a wealth of highly skilled algorithmic traders for high-quality algorithms.

In-app Tax Reporting Generation

Our number one priority at Cryptora is the safety of our users. Government tax departments are cracking down on crypto trading and we want to provide inbuilt tools to allow our users to comply with the relevant tax law of their jurisdiction. We would like to partner with crypto tax vendors, such as Koinly or cointracker etc. This would allow for a tax report to be auto-generated, allowing our users to easily comply with tax regulations.

AML and KYC Obligations

We will be launching a desktop and mobile version of Cryptora. The desktop version will be using web3 and as such will not have AML and KYC. The mobile version will allow users to purchase UST and deposit it into their savings/trading account. To do this we must take AML and KYC of our mobile users. However, if they already have crypto, they can deposit it into their account and will not have to provide AML or KYC.

Algorithm/Creator Portals

The algorithm portal is the way in which investors understand the scope of an algorithm and can determine whether it is worthy of investment. Each algorithm will have a description space, where the creator can explain all the decisions made in creating the algorithm and why the algorithm will be profitable long term. There may be a video uploaded for this purpose also. All indicator parameter pairs and their values will be visible here also. Users will also be able to click a compare button and perform side by side analyses of different algorithms.

Additionally, all algorithm creators will have a creator portal, where they can explain their trading expertise, link their other platforms, so that creators of popular algorithms can develop their own personal brand. The level of detail that creators want to espouse is up to them, they may remain completely anonymous if they choose so.

Each creator will be rewarded according to the Algorithms performance rate or other areas of their algorithm with achievement badges, these are given to the creator to acknowledge their efforts and successes. Creators can then set themselves apart from their competitors by highlighting the areas of their Algorithm that are performing well. For example rocket algo has been awarded the highest monthly profit factor for all Bitcoin algorithms,this will help promote more successful algorithms on the platform.

AI-based Algorithms

It is our ambition to eventually facilitate the creation of AI algorithms. This would be done similarly to nummer.ai, whereby the platform provides data for machine learning, users can train their

algorithms for free and when they are confident their trading algorithm is effective can launch it on the Cryptora platform. They would operate differently from regular trading algorithms as they are not immutable, a bot that has been trained and will be continuously trained by the creator will access the funds of the smart contract and make trades appropriately. These risks will need to be heavily advertised to users of the platform.

AI: daniel add benefits, how users know if its good

Tokenomics

Cryptora token ($TORA):

- We plan to launch with the token Cryptora ($TORA)
- Fixed supply
- Total supply TBD
- Cryptora token is required to create algorithms, when a user wishes to create an algorithm they must pay TBD Cryptora, perhaps a variable amount depending on conditions.
- The fee required to create algorithms ensures that individuals do not spam create algorithms, the algorithms are of high quality and to cover the cost of minting the NFT to represent ownership of the algorithm.
- The amount of Cryptora in excess of the NFT minting fee will be burned, decreasing the total supply
- Our goal is for the Cryptora token to be net deflationary.

Cryptorian token ($TIAN):

- If Cryptora token is staked to the platform, you will officially become a Cryptorian and fittingly receive the Cryptorian token.
- Cryptorian will operate like xSushi, where a percentage of the fees generated by the platform are used to buy back the Cryptora token on the market and distribute them to Cryptorian stakers.
- Of the Cryptora bought back from the market, a small percentage will be burned, this burn percentage can be changed through a governance proposal.
- The value of the Cryptorian token will initially be 1:1 with the Cyrptora token and grow against Cryptora over time.
- Users can deposit and withdraw from this pool as they wish, however those who decide to lock their Cryptora for Cryptorian will receive more Cryptorian tokens and receive a greater interest, similar to curve finance.
- There will be different amounts of Cryptorian received per Cryptora asshown below:
    - 0.25 Cryptorian per 1 Cryptora (0 days, no lock)
    - 0.33 Cryptorian per 1 Cryptora (Less than 180 days locked, greater than 0 days locked)
    - 0.75 Cryptorian per 1 Cryptora (Less than 360 days, greater than or equal to 180 days)
    - 1 Cryptorian per 1 Cryptora (Greater than or equal to 360 days)
- This scheme incentivises individuals to lock their Cryptorian forever to earn maximum fees generated by the platform

- Users can then take their Cryptorian tokens and stake them to specific algorithms for a concentrated boost in emissions for this algorithm, or stake them to an asset gauge to boost the Cryptora emissions that all algorithms trading this asset receive at a diluted rate.
- For example, Jeff wants to invest in mBitcoin, but is unsure which algorithm to choose, Jeff decides to stake his Cryptorian in the mBitcoin gauge. The emissions received from all algorithms trading mBitcoin would be increased as a result.
- Another example, Alice created an algorithm that trades the mSPX that she believes is incredibly profitable. She decides to stake all her Cryptorian on her own algorithm to increase the emissions that traders receive, attracting more people to use her algorithm. Also as she is using the algorithm herself she benefits from the concentrated boost in Cryptora emissions.

NFT token: AI: DANIEL TO ADD

- All sales of NFTs representing algorithms have an inbuilt 5% fee that is distributed to Cryptorian holders.
- Algorithm holders may burn their algorithm for a payout in Cryptora tokens.
- If an algorithm is burned that is profitable, this revenue will be distributed to Cryptorian holders.
- Profitable algorithms that are providing revenue directly to Cryptorian holders can be auctioned off pending a successful governance proposal, 5% of the sale will be distributed to Cryptorian holders in this case.
- Algorithms holders may stake their NFT to the platform providing the revenue of their algorithm to Cryptorian holders, in return for Cryptora payouts and limited edition NFT airdrops.

Bootstrapping TVL:

You will earn Cryptora by doing the following:

- Depositing assets into the savings account
- Staking funds from the trading account into an algorithm
- Staking Cryptora
- Creating Algorithms

Governance:

We would like to be a DAO, initially the decisions would be made by the team slowly transitioning to a DAO. The voting scheme is as follows:

- 1 Cryptora = 1 Vote
- 0.25 Cryptorian = 1.25 Votes
- 0.50 Cryptorian = 1.50 Votes
- 0.75 Cryptorian = 1.75 Votes
- 1 Cryptorian = 2 Votes
- 1 NFT = 1 Vote

Distribution

The Cryptora token distribution would be as follows:

- 50% emissions for the Cryptora dApp
- 25% team & advisors
- 10% treasury
- 10% launchpad/IDO
- 5% FISO

The tokens received by the team and advisors would be vested linearly over a 24-month period, with unlocks each epoch.

The treasury is used to fund expenses that are necessary to the long term success of the platform. This includes paying for marketing campaigns and artwork for our NFTs

Fair Initial Staking Offering

Following the example set by Minswap of Cardano https://docs.minswap.org/faq/fiso we would like our ISO to aid the decentralisation and health of the Terra ecosystem. The plan would be to select a set of stake pool operators that satisfy a set of criteria such as downtime, luna staked etc, and airdrop tokens to these pools and its delegators. The objective is to incentivise delegators to delegate to smaller trusted pools and further decentralise the Terra network. The criteria and yet to be decided.

Additionally, we would send the tokens to those who are borrowing collateral on anchor. The long term viability of anchor hinges on a constant and healthy amount of borrowing taking place. To aid borrowing, snapshots will be taken of addresses that are borrowing collateral on anchor and these addresses will be airdropped Cryptora tokens. The frequency of snapshots and distribution scheme is yet to be decided.

Launch Auctions

The platform needs to launch with algorithms on it, that can be trusted and have technical merit. The owners of these algorithms should not be the team; as it would be unethical to have an advantage on other creators, therefore, these initial algorithms will be auctioned on launch. The proceeds of the launch will go to angel protocol and aid their charitable endeavours.

Road map

Q3 2021

- Complete Space camp hackathon
- Launch POC smart contracts for trading algorithms on Terra test-net

Q4 2021

- Artwork design completion for NFT’s
- Education material into algorithms
- Integration of Anchor
- Integration of Mirror for crypto trading
- App POC on Terra test-net

Q1 2022

- App Alpha Launch
- Integration of Mirror for financial asset trading

Q2 2022

- IDO Launch
- NFT Launch
- App Launch

Q3 2022

- Integration with Curve for forex trading
- Staking NFT's for cryptorian
- Burning NFT's for cryptorian

Current Hurdles to Achieving Goals

- No established dex aggregator to facilitate efficient trading of non-mirror assets
- No experienced CosmWasm devs on team currently, we have 2.5 devs that starting learning at the start of the hackathon
- Art source for NFTs
    - possibly allocate some Cryptora for artists who submit artwork to NFT library
- Limited by existing Terra NFT marketplaces
- No-cross blockchain integration for NFT trading on marketplaces such as OpenSea