Cryptora White Paper v0.1

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2.1 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.

2.2 Our Why

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 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 with a 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.

2.3 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.

2.4 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 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.

3 Algorithms

3.1 Fundamentals of Trading Algorithms

A trading Algorithm/trading bots are a set of programmed indicators and parameters that allow investors to trade the market completely autonomously without the need for the investor to make any investment decisions. An indicator is an investment tool that has a set of mathematical patterns derived from historical data used to help predict future prices, each indicator has unique parameters that can be used to help increase trading performance relative to the investors trading strategy. Therefore, every trading algorithm created will be vastly different from each other. The number of possibilities for different algorithms is endless because there are thousands of different indicators, and each indicator has hundreds of different parameters. This allows for a realm of exciting possibilities for Cryptora Creators.

3.2 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:

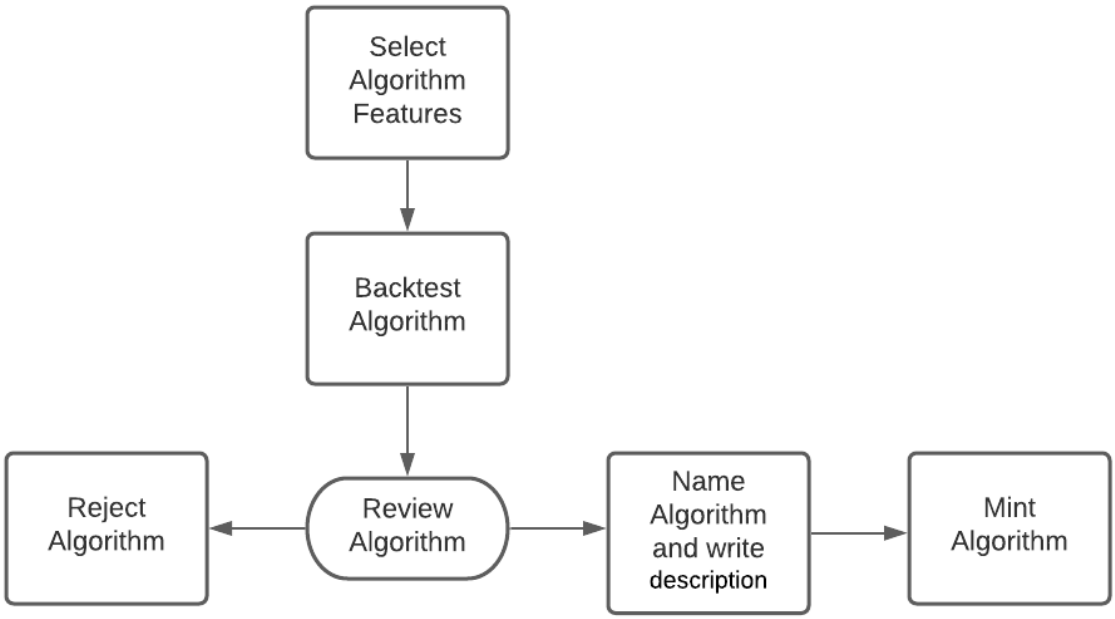
- Simple buy/sell algorithms
  - These will interact with DEXs (Terraswap, loop, etc) to trade all crypto class assets available on the Terra ecosystem
- Mirrored Asset buy/long/sell/short algorithms
  - Leveraging mirror protocol, algorithms will be able to perform any combination of these four actions 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.

3.3 How to build an Algorithm on Cryptora

Creating an algorithm on Cryptora is relatively simple and does not require any technical understanding of financial markets or the code creation process, however knowledge in those areas would be beneficial to the user.
Algorithm creation can be broken down in 4 steps.

1. Select parameters
2. Backtesting
3. Adding names and descriptions
4. Minting

Algorithm parameters refer to technical indicators and the configuration of those settings, as well as selecting the asset. Backtesting refers to the ability to run the algorithm against historical data and make more informed decisions against past performance and risk. You can then customise aspects of the algorithm which will be added to its metadata. Finally you can mint the algorithm as an NFT.



3.4 How the algorithm uses its allocated value

Each algorithm consists of an owner and investors in the algorithm. They can choose to add funds in $TIAN (the smart contract then buys UST equivalent) to the algorithm and will be allocated a percentage of the algorithm based on their initial and subsequent deposits. If another user were to deposit funds into the algorithm, then the percentage share of all previous investors will decrease. To prevent unfavourable dilution of holders there will be a feature to dynamically re-buy into the algorithm to maintain a user's % standing.
The distribution of how funds are used in each algorithm will depend on the allocated risk level that the owner has chosen. Across all algorithms funds will be distributed in three ways.

1. A percentage to buy an asset if not currently in a short position
2. A percentage to short an asset if not currently in a long position

3. A percentage that isn't actively traded to maintain liquidity levels
4. A percentage that is allocated in an anchor savings account
5. A percentage that is distributed in fees

Fees from an algorithm are distributed to three important participants in the market. The first being fees associated with Mirror and any additional gas or slippage costs. Secondly any remaining fees from the principle are distributed to the algorithm owner and Cryptora at an 80/20 split favouring the owner. In order to minimise the total amount of transactions, algorithms that will be in opposing buy/sell states in the same moment of time for the same asset will be calculated collectively and therefore only the net amount will be transacted.
If an investor chooses to do so, they can withdraw all or part of their funds from the collective pool and will receive funds proportionate to their ownership percentage. These funds will be taken from the liquidity pool and the pool will dynamically float depending on the risk level. i.e if the liquidity pool is set to 10% of the total value of the algorithm, then the liquidity pool is allowed to float between values of 8-12% and if were to exceed those limits then the algorithm would sell/buy into its current position to reach the desired liquidity level

4 Differentiating Features

4.1 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 override the option to use the image of the backtest as the image for the NFT.

4.2 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 TerraSwap. 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 is 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.

4.3 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 result 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.

4.4 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. Outside of the Return on investment each Algorithm makes use additional metrics to measure the algorithms success. These additional metrics are listed below.
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 .5-1 = 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.

4.5 Pine Script Integration

TradingView 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 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. This helps Algorithm Creators have more options when building Algorithms on Cryptora to use their existing Pine script code in Cryptora or Start from Scratch on Cryptora.

4.6 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 mBTC algorithms,this will help promote more successful algorithms on the platform.

4.7 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.

4.8 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.

5 Tokenomics

5.1 Cryptora token ($TORA$) :

Our goal is to launch Cryptora under its own token called Cryptora Tokin with the abbreviation of ($TORA) these tokens will have a fixed supply in which the total supply will be determined at a later date. Cryptora token will be required to create algorithms, when a user wishes to create an algorithm they must pay the algorithm creation fee. This fee is needed to cover the minting cost for the NFT and any amount of Cryptora in excess of the NFT minting fee will be burned, decreasing the total supply. This fee also ensures that individuals do not spam create algorithms ensuring that all the algorithms are of high quality. The Creator also will not pay this fee until the confirm and Submit Stage of the algorithm creation process (For more information see 2.3). The Cryptora token

will be net deflationary due to the process of burning all funds in excess of the mint fee for every Algorithm, therefore the more algorithms created the faster the burn rate.
All fees for each Algorithm are paid in the Cryptora token therefore Investors will need to purchase Cryptora coin in order to Invest in Algorithms on Cryptora. The Creators of Algorithms will be paid various rewards and bonuses in the form of Cryptora coin in addition to their standard .33% of trading fees payment. These rewards will be distributed at the discretion of Cryptora for Algorithms with tremendous performance in a variety of different areas such as overall long term performance and Accuracy. Non Fungable tokens (NFT) can also be bought using Cryptora coin; every NFT on Cryptora represents a unique and different Algorithm so Creators can decide to sell their existing Algorithm (NFT). The Creator selling their Algorithm will transfer all fees and rewards from that Algorithm to the new buyer providing a high layer of utility for these NFT being sold.

5.2 Cryptorian token ($TIAN$) :

Cryptora holders have the ability to stake their Cryptora token to the platform which will make them officially a Cryptorian and they will fittingly receive the Cryptorian token. The Cryptorian token will function where a percentage of the fees generated by the platform are used to buy back Cryptora token on the market and then will distribute the Cryptorian Tokens to all Cryptorians. This will simply operate in a similar way to Sushiswaps xSushi. When the Cryptora token is brought back from the market, there will be a small percentage of these tokens burned; this burn percentage is able to be changed though a governance proposal (For more information on governance proposal see 4.4). In the beginning the Cryptorian token will be valued at a ratio of 1:1 with the Cryptora token but will appreciate overtime.
Cryptorian tokens holders can take their Cryptoian 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.
In addition all sales of NFTs representing algorithms have an inbuilt 5% fee that is distributed to Cryptorian holders. 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 token payouts and limited edition NFT airdrops.

5.3 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

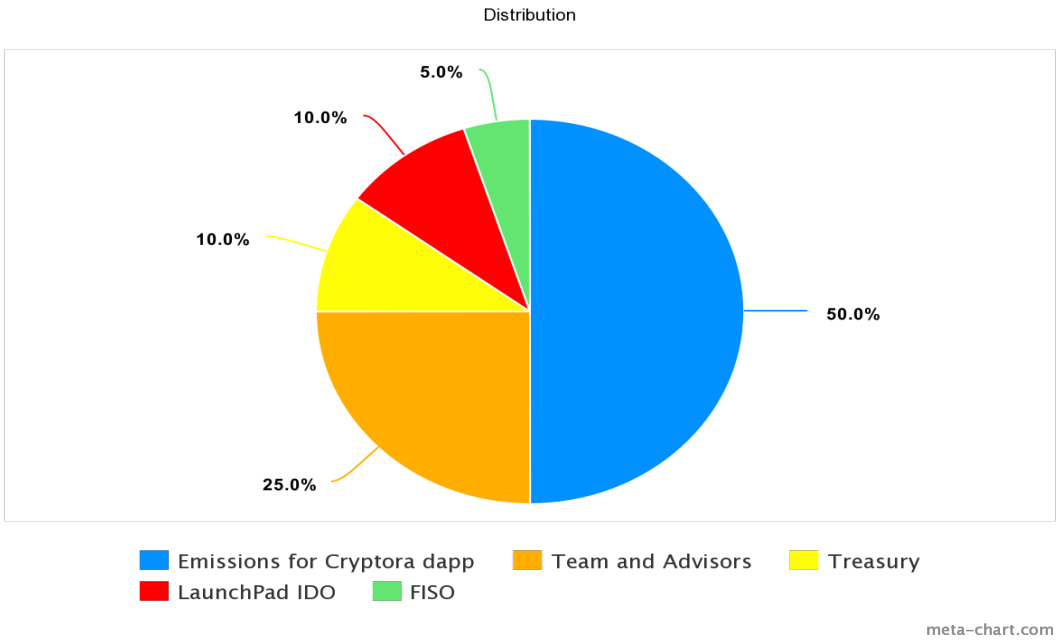
5.4 Governance:

We would like to be a Decentralised Autonomous Organisation (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 Algorithm (NFT) = 1 Vote

5.5 Distribution

The Cryptora token distribution would be as follows:



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.

5.6 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.

5.7 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.

6 Our Road map

7 Summary

Cryptora aims to help investors trade smarter when investing through Algorithmic trading, to achieve this goal Cryptora needs to revolutionise the way we invest our money. It is evident that through the use of algorithms investors can be more accurate and efficient with their investments by allowing mathematics to guide decision making rather than emotion. We aim to create a passionate community for algorithm creators and investors alike where they can publicly promote their algorithm strategies and allow others to share in the success. The platform is designed in a way that encourages healthy competition among algorithm creators which in turn leads to the more profitable algorithms rising to the top of the platform. Integrating algorithms as NFTs not only allows for the creators to own the rights of their algorithm but also receive a steady passive income of the trading fees creating a large degree of utility for the NFT.

- At Cryptora we believe it would be best to transition towards becoming a Decentralised Autonomous Organisation (DAO), initially the decisions would be made by the team but we would slowly transition to a DAO. This allows for the Algorithm community to help shape and innovate Cryptora to become the very best version of itself.

Join us on our mission to help make algorithmic trading more accessible, so that we can help investors worldwide trade smarter.