Alchemy

A decentralized trading model training platform based on on-chain secure encryption operation and random forest algorithm

White Paper V1.3

Project Background

Programmatic Trading

Programmatic trading originated in the stock market in the 1970s, and then developed and spread rapidly. Especially in the futures trading market, programmatic trading has gradually become the mainstream. Some data show that programmatic trading of futures in mature markets abroad has accounted for 70% -80% of the total transaction volume, but domestic has just begun. Disadvantages such as traders' emotional fluctuations in purely subjective transactions are becoming an obstacle to profitability, while the accuracy and 100% execution rate inherent in programmatic transactions bring advantages to its profitability. In the investment banking business, JPMorgan Chase uses machine learning to help the bank's global stock algorithm execute 1,300 stock transactions per day. As Morgan launches the DeepX system to new countries, the number of stocks that can execute transactions every day will increase. Natural language processing offers the potential for machines to digest thousands of written reports and categorize languages as emotions, resulting in broad investment prospects

In a case study, JP Morgan Research built an algorithm based on 250,000 analysis reports that provided source material to learn the meaning of financial terms. 100,000 news articles on global stock markets to inform future stock investment decisions.

Such signals produced strong returns and exceeded some benchmark indices. These new data forms must be analyzed before they can be used in trading investment strategies.

From the birth of Bitcoin in 2009 to the emergence of more than several thousand species, from a handful of geeks to a consensus of more than 20 million people worldwide, the market value once reached $ 850 billion. According to CoinMarketCap data, daily crypto currency transactions amount to tens of billions or even hundreds of billions of dollars. Various disadvantages in purely subjective transactions have brought a lot of losses for most small traders in digital currency transactions.

Our Mission

Use technology to help more ordinary users make decision-making strategies in complex investment environments more quickly.

Existing pain points

Pure subjective trading are extremely susceptible to emotional fluctuations, false news,

etc., and the threshold for programmatic trading is high. It is in the hands of most programmatic investment institutions. It is extremely difficult for ordinary individual investors to use automatic machine trading and institutional countermeasures, leading to investment loss

Alchemy Introduction

Alchemy is a decentralized data model training platform based on on-chain secure cryptographic operations and random forest training models. Blockchain ecological nodes return beacons by transmitting transaction decision data to achieve data retrieval, use, and weight verification At the same time, Alchemy uses the decentralized decision model of the random forest deep learning algorithm to build a unique algorithm training system, and uses the beacon of the data sample feedback to modify the fitting model, thereby opening a new era of decentralized data model training platforms.

The Alchemy smart contract records the relevant transaction / transfer data on the platform. The multi-party secure encryption operation and sandboxed data transmission guarantee the independence of data ownership and use rights. The Alchemy ecosystem does not store supplier data, but encapsulates the data into Sandbox, using only beacon fitting models for data sample feedback; Alchemy ecological nodes can return beacons to correct the model by transmitting transaction decision data and obtain corresponding Token rewards; nodes that mortgage a certain number of tokens can be verified Nodes, check nodes obtain transaction data training sets by means of voting on ecological nodes. Alchemy smart contracts use machine learning to trace back all transaction records, and after processing the shared data information to obtain the most Alchemy Coin as a target, and refer to other currency quotes, etc., train high-precision automatic programmatic transaction models and automatic Trading platform.

When Alchemy's model meets the requirements, the model can generate different currency pairs based on the algorithm and start automated transactions. At the same time, the model will be continuously optimized and adjusted.

Alchemy Coin (ACOIN) is Alchemy's core token and will participate in the governance of the platform in two different identities.

The first stage-model training period: ACOIN will be used as a beacon in the early stages of model construction and training, which is the key to model training after data

extraction and structure. ACOIN quantity is the result of a certain process indicator. At the same time, nodes that transmit transaction decision data for model correction in this process will receive corresponding Coin rewards. The platform will use the number of ACOIN as a beacon, and combine the Gini coefficient and information gain of the transaction training set to train the model. Partially over-trained training set is pruned.

The second stage-model application period: After the model training is continuously strengthened to perfection, the partially perfected model will be opened to users of the external system. Users pay ACOIN to obtain the rights to use Alchemy. The data model of the training set is used for mortgage voting. According to the performance of the quarterly trading strategy of the fitted data model, the verification node income and the ecological node voting income are determined.

At the same time, in order to encourage everyone to be cautious in trading, Alchemy Coin has also implemented a strict deflation mechanism. Each transfer will be directly destroyed by 1% of the transaction amount.

Alchemy DEX

In order to ensure the authenticity of the data on the Alchemy platform and the security of transactions and facilitate the selection of data, Alchemy will deploy a DEX trading system with ACOIN trading pairs based on the underlying technology of the blockchain and build cross-chains between Alchemy and different digital assets Chain communication network.

Today, the decentralized exchanges considered by the cryptocurrency community are based on "cross-chain atomic transactions" (AXC transactions). Through AXC transactions, two users on two different chains can initiate two transfer transactions, and the transactions are either submitted for execution on the two ledgers or both are not executed (that is, the atomicity of the transaction). For example, two users can use AXC transactions to implement transactions between Bitcoin and Ethereum (or any two tokens on different ledgers), even if there is no mutual exchange between the Bitcoin and Ethereum blockchains connection. Under the AXC trading model, the two parties of the exchange user do not need to trust each other and do not need to rely on the transaction matching service. The disadvantage is that both parties to the transaction must be online at the same time to conduct the transaction.

Another type of decentralized exchange is a distributed exchange with an independent blockchain that makes a lot of copies. Users of this exchange can submit limit orders and shut down their computers, and transactions can be executed while the user is offline. Blockchain will complete matching and transactions on behalf of traders.

A centralized exchange can build an order book account with limit trading with a large trading volume to attract more traders. In the field of exchanges, liquidity will trigger more liquidity, so the network effect it has in the exchange business is more and more obvious (or at least the "winner-take-all" effect). At present, the daily trading volume of head cryptocurrency exchanges can reach billions of dollars. Under this strong network effect, the trading volume of AXC-based decentralized exchanges is unlikely to exceed that of centralized exchanges. If a decentralized exchange is to compete with a centralized exchange, it needs to support the operation of deep trading order books composed of limit orders. And only blockchain-based decentralized exchanges can achieve this.

The fast transaction execution provided by Alchemy DEX is a big advantage. Alchemy's internal network can quickly and preferentially determine finality (Byzantine fault tolerance) without sacrificing consistency to achieve fast transaction completion-at the same time for transaction order transactions, cross-chain communication and transactions with other networks.

Alchemy DEX, its trading throughput energy and commission delay are almost comparable to those of centralized exchanges. Traders can submit limit orders while the parties are offline. And, based on the A Byzantine consensus and the new cross-chain communication, traders can quickly complete the in and out of funds on the exchange and other networks.

Alchemy Core can be used as a source of tokens linked to other cryptocurrencies. This hook is similar to the relationship between the Cosmos hub and the partition, and both must update each other's latest blockchain in a timely manner to verify that the tokens have been transferred from one party to the other. The partitions pegged on the Alchemy network are kept in sync with the center and other cryptocurrencies. This indirect partitioning can keep the logic simple. And it is not necessary to understand other on-chain consensus strategies, such as Bitcoin's proof-of-work mining mechanism.

Send tokens to Alchemy Core

Each validator hooked to Alchemy Core will run a bridge application with a fixed protocol on top of Alchemy's Byzantine consensus, but will also run a "full node" of the original blockchain.

When a new block is dug out from the original blockchain, the validators linked to Alchemy Core will sign and share the tips of the starting point blockchain, and their respective local perspectives can be agreed. When a bridged partition receives payment from the original blockchain (such as a sufficient number of confirmations on the chain of POW mechanisms such as Ethereum or Bitcoin), a balance with the corresponding account is created on the Core partition.

In the case of Ethereum, the Core partition can share the same validators as Alchemy Core. On the Ethereum side (original blockchain), a bridge contract will allow Ethereum owners to send Ethereum to the bridge contract in the bridge partition of Ethereum. Once the bridge contract receives Ether, Ethereum cannot be withdrawn unless the corresponding cross-chain communication data packet is received from the bridge partition. The bridge contract follows the validation group of the bridge partition, which may be the same as the validator group of Alchemy Core.

As far as Bitcoin is concerned, the concept is similar, except that instead of a bridge contract, each UTXO will be restricted by a threshold multi-signature P2SH database. Due to the limitations of the P2SH system, the signer cannot be the same as the validator group of Alchemy Core.

Withdraw Tokens from Alchemy Core

The Ethereum on the Core partition ("bridged Ethereum") can be transferred in and out of Alchemy Core. After completing the transfer to a specific Ethereum extraction address, the "bridged Ethereum" transferred out is completely deleted. A cross-chain communication message can prove the transaction on the bridge partition. This message will be announced to the Ethereum bridge contract so that the Ethereum can be taken out.

As far as bitcoin is concerned, the rigorous transaction script system makes it difficult to realize the mirror image conversion mechanism of cross-chain communication coins. Each UTXO has its own specific script, so when a Bitcoin compliance signer changes, each UTXO must migrate to a new UTXO. One solution is to compress and decompress UTXO-sets as

needed to keep the total number of UTXOs down.

Multipurpose Integration

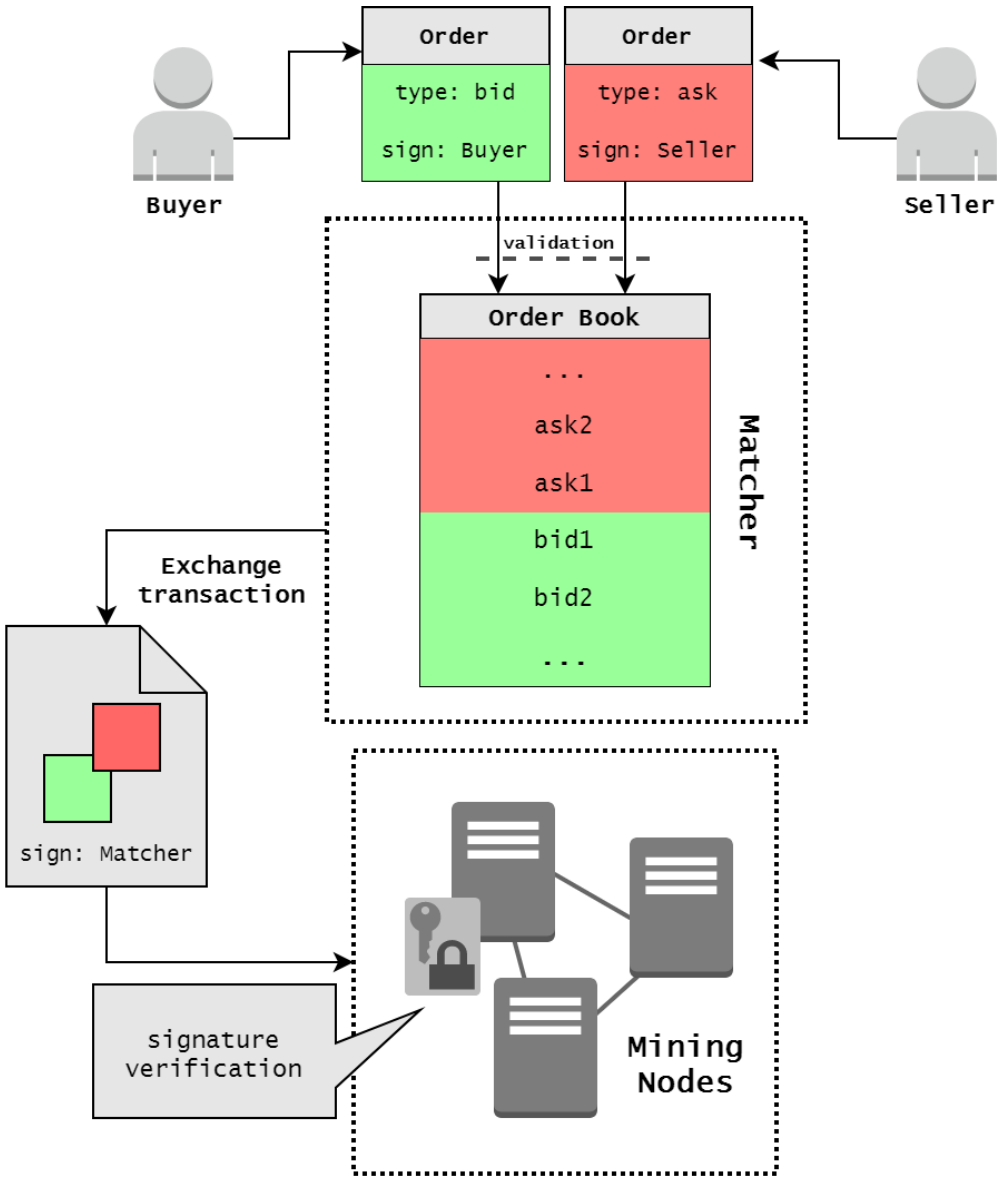
Alchemy Core can run different application logic. The application is set when the partition is created and can be continuously updated by the administrator. This flexibility allows the Alchemy Core partition to be used as a pegging carrier for other cryptocurrencies, such as Ethereum or Bitcoin, and it can also be linked to derivatives of these blockchains. Using the same code base, the verification program and initial Distribution is different. This allows a variety of existing cryptocurrency frameworks to run, such as Ethereum, Zerocash, Bitcoin, CryptoNote, etc., and combines it with Alchemy's Byzantine consensus to become a consensus engine with better performance in the general network, providing platforms between platforms. More opportunities for interaction. In addition, as a multi-asset blockchain, each transaction may contain multiple input and output items, each of which can be any token, making Alchemy directly a decentralized exchange. Of course, it is assumed here that the transaction order passes Match on other platforms. The alternative is to make the partition as a distributed fault-tolerant exchange (including the order book account), which is a strict improvement over the centralized cryptocurrency exchange-the current exchange has been frequently attacked in the past.

Alchemy Sandbox Specializing in Data Beacons

Select effective classifiers in transaction big data: i) Which type of classifier should be selected in many competition models, such as multilayer perceptron (MLP), support vector machine (SVM), decision tree, naive Bayes classification Ii) Given a specific classification algorithm, the implementation of that algorithm should be chosen-for example, even if all other parameters remain the same, different initializations of the MLP will produce different decision boundaries. Unfortunately, the most commonly used program-selecting the classifier with the least error in the training data-is a flawed program. As far as the training data set is concerned, its performance may mislead the classification performance of previously unseen data, even when calculated using cross-validation methods. Then, in all (possibly infinite) classifiers that may have the same training, or even the same (pseudo) generalized performance calculated on the validation data (a part of the training data used to evaluate the performance of the classifier), Which classifier should be selected. Everything

else is the same. People may tend to choose randomly, but with this decision comes the risk of choosing a particularly poor model. Use a set of such models-instead of just selecting one-and combine its outputs in the following way. For example, simply averaging them can reduce the risk of unfortunately choosing a classifier with particularly poor performance.

All the ledger records in Alchemy DEX, cross-chain asset interactions, and cross-chain communication between different transaction pairs will automatically enter the Alchemy Sandbox. Decentralized beacons provide classified beacon data and samples for the model.



Token Metrics of Alchemy Coin

Alchemy Coin, referred to as ACOIN coin, is a decentralized blockchain digital asset based on Ethereum. It is based on the ERC20 standard token of the Ethereum blockchain.

Initial issuance of 100 million ACOINs and will never be issued more

Constitute	Proportion	Amount	Distribution details
Community	30%	30 M	LockDrop
Team	20%	20 M	Lockup for 36 months
Market Incentive	20%	20 M	Promotion cooperation for the projec; Will be publicized before use
Foundation	30%	30 M	To support the ecology of the project, and the community will be publicized before use

Destruction mechanism: 1% of each transaction will burned instantly

Team holds Proportion Release Plan

0.5% to be released monthly, starting from the 36th month

Proportion	Amount	Release Time
0.5%	0.5 M	Jan.2023
0.5%	0.5 M	Feb.2023
0.5%	0.5 M	Mar.2023
...	...	...
0.5%	0.5 M	Mar.2026
0.5%	0.5 M	Apr.2026

Lock Drop rules

Way of Participation

It is carried out in 6 phases. Users deposit and lock USDT, and obtain corresponding new tokens according to the amount of the lock-up.

Supported Tokens

USDT

Settings of Each Round

Hard cap is set for each round and each user. And the minimum lockup limit: 10 USDT. The allocation will be divided equally according to the user's total lock factor.

Data of Each Round

Round	Hardcap	Amount	Personal Hardcap
R1	50K	5M	500
R2	100K	5M	1,000
R3	150K	5M	1,500
R4	200K	5M	2,000
R5	250K	5M	2,500
R6	250K	5M	2,500

Operating Procedures：

Start of the activity – The user selects the amount of lock – The hard cap reaches the end of the round – Asset lock – The return of the locked asset is ended – The system settles the quota.

Core Team

Daniel Yeo

Daniel has 31 years of experience in financial prime brokerage business working with Wall Street establishments like Merrill Lynch, Leman Brothers, Goldman Sachs, Audrey Lanston, Credit Suisse and Cargill. Daniel had worked in this licensed career in geographies that spanned across Singapore, Japan, the US and Hong Kong. He attended the Management Program at the Harvard Business School. Daniel has been licensed with the US NFA Series 3 and 30 as a branch manager, and in Hong Kong under SFC as a Responsible Officer.

Neil Bryant

Neil Bryant is an experienced Internet and Blockchain start-up manager and CEO. He has helped to raise $30 million so far for blockchain projects, through presenting at conferences, PR, media, representation, investor outreach activities. Neil is also the CEO of Arround and COO of IDV partners.

Rodian Mikhalev

Rodian has 10 years of experience in sales, business development and blockchain.

Rodian founded Directblockchain.net in 2017, which covers enterprise education, fund raising, business development, crypto events, digital markets & branding, buying/selling Bitcoins OTC and etc.

Alchemy Roadmap

2019 Q4： Token and economic model completed design

2020 Q1：Alchemy launches on a centralized exchange to complete Lock Drop

2020 Q2：Launch decentralized data model training platform

2020 Q3：Launch Alchemy DEX and start testing beacon data

2020 Q4：Complete Alchemy FPGA acceleration services and launch Alchemy acceleration services

2021 H1：Complete the first version of the Alchemy model and open the first version of the strategy model call

2021 H2：Complete Alchemy decentralized exchange version

2022 Q1：Officially launched the public version of Alchemy AI

Risk Warning and Disclaimer

Disclaimer

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Risk Warning

Security: Many blockchain projects cease operations due to security issues. We attach great importance to safety, but there is no 100% safety in the absolute sense in the world, such as various losses caused by force majeure. We are committed to doing everything possible to keep your related assets safe.

Competition: We know that blockchain is an extremely competitive field. With

thousands of teams planning and starting development, the competition will be brutal. Alchemy does not use any form of fundraising, so there is also the possibility of project failure.