

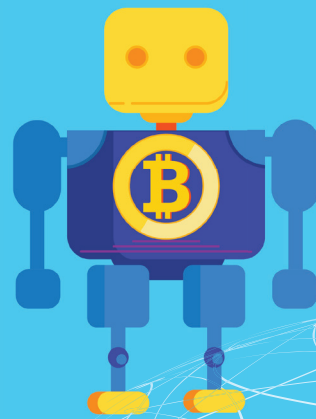
NVEST.AI WHITEPAPER V1.1

EMPOWER YOUR INVESTING WITH AI

October 19, 2018, White Paper version 1.1

**Data & analytics for crypto traders
and investors.**

Built by a decentralized community.





Abstract

As the cryptocurrency ecosystem continues to evolve, the velocity, variety and volume of data has grown exponentially. There is simply too much data for a single human brain to process. Yet successful trading and investing is dependant upon smart decision making - spotting new trends before the crowd or discerning the signal from the noise as examples. Investors who can harness the flow of information and make data driven decisions and will be one step ahead.

Sophisticated technologies including advanced statistics, Machine Learning (ML) and AI are perfectly suited to analyze large and complex data. However, for the majority of crypto traders and investors today who are not advanced software engineers, accessing the ever growing advances in AI & ML remains out of reach. As well, for all analytics, the combination of domain knowledge needs to be paired with technical expertise in order to obtain optimal results.

At nvest we believe that all traders and investors should have access to data and powerful AI algorithms regardless of their technical background. The nvest technology platform will host a variety of proprietary tools/applications (apps) created by the nvest team and designated token rewards will incentivize community members to create and share new tools and content. Nvest tools will empower traders allowing them to use data and information as key inputs in their decision making process.

The nvest platform will streamline application development by providing plug-and-play ML & visualization libraries and remove time consuming barriers like data collection and scrubbing. It enables developers to focus on building innovative analytical tools without having to worry about the backend processes. As a community, nvest is focused on creating a symbiotic relationship between investors/traders (users) and technologists who will build and create on top of it (creators).

By targeting both users and creators, strong network effects will accrue to the nvest community and benefit all users. As the crypto and nvest's community grows, nvest will be perfectly placed to disrupt the multibillion dollar financial information industry.

Mission Statement

Create a revolutionary data and analytics platform for crypto for traders and investors by combining accessible AI technologies with incentivized community participation.

Nvest.ai – Complexity Simplified Elegantly



1 INTRODUCTION

Technology is changing every industry. Tasks like investing and trading are easily performed by computers as they are data and numeric intensive and do not require any physical actions. But today's computers still need data and instructions in order to work. While some academics assume markets are 'perfectly efficient' and all investors have access to the same data and information which is reflected in market prices; in the real-world traders and investors know that's almost never the case. In a world awash with data and where Machine Learning is increasingly being adopted, nvest provides a technology solution for traders and investors, by providing them the tools they need to make better decisions. The following principles guide the nvest project:

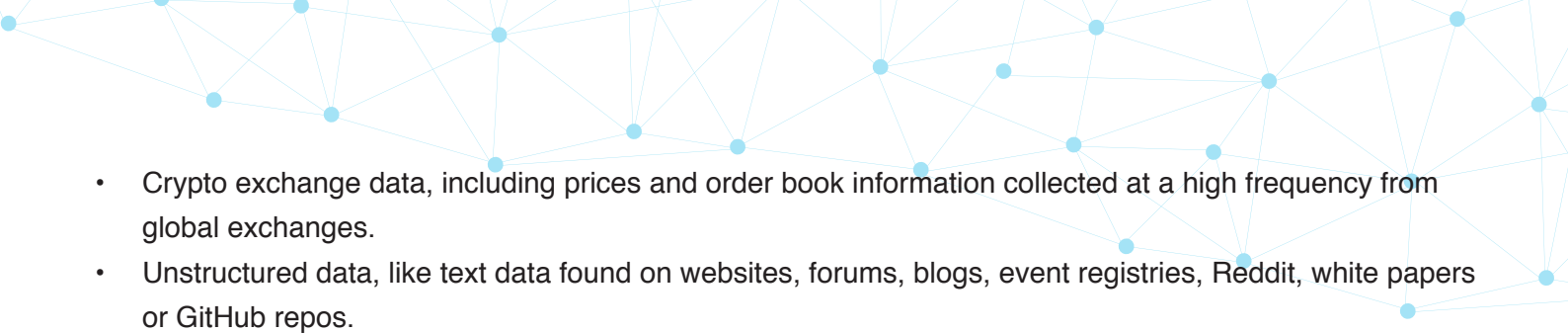
1. In today's crypto markets, users who adopt a technology strategy to capture insights from data and harness sophisticated machine learning algorithms have an edge over users who do not have any technology strategy.
2. All users should have access to powerful algorithms, regardless of their technical background.
3. Providing preprocessed data and easy to use tools empowers users to focus their time and energy on tasks where they can add more value.
4. Beautiful and interactive visualizations are essential to provide a clear window into the otherwise complex data and number-crunching results.
5. A community can use a token to provide an incentive mechanism for users with different backgrounds to create, collaborate and share their expertise.
6. The value of an investment community is increased when users of different backgrounds interact and contribute. This creates positive network effects for current and prospective users
7. The initial overhead involved in data collection, processing and algorithmic development is often large and fraught with many unexpected details that require thoughtful domain expertise, yet it is essential for all Machine Learning tasks. Amortizing this cost over many users is an efficient solution.

2 PLATFORM

In order to harness insights from data, the nvest platform is built upon the following technology pillars: **Data, Algorithms & Visualization:**

Data: Nvest will collect, process and provide users with professional quality raw data. The foundation of all data analytics rests on quality data, as the saying, garbage-in-garbage-out, illustrates. As analytical capabilities extend from relatively constrained structured data to big data, unstructured data, real-time streaming, blockchain data and other data types, data integrity is increasingly a major concern. In order for data to be used in Machine Learning and analytics, it much be cleaned and scrubbed, a non-trivial task. Recent studies suggest that around 60-80% of a data scientist's time is spent collecting, reviewing and cleaning datasets and only the reminder spent performing analysis and predictions.¹ In addition to collecting and cleaning the data, to make full use of the voluminous data available, domain and technical competence is essential to ensure that curated data is useful and appropriate for AI and algorithmic processing.

A sample of the data nvest will collect, includes:

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- Crypto exchange data, including prices and order book information collected at a high frequency from global exchanges.
 - Unstructured data, like text data found on websites, forums, blogs, event registries, Reddit, white papers or GitHub repos.
 - Streaming data from sites like Twitter, Telegram, WeChat, Line, Discord etc.

Nvest will collect and extract data for all existing and planned crypto projects, such as original white papers, social media statistics, GitHub tracking, team members, industry focus etc, along with proprietary data sets like GitHub scoring, white paper rankings and many others. Domain expertise is essential when exploring and creating new data sets.

Most of the data will be collected and cleaned by the nvest platform, but we will partner with existing data organizations to provide part of the data services when it is the most effective route. Our goal is to provide users with a single point access to a large variety of datasets that have already been reviewed for integrity and are available for use in applications and/or data analysis. Data will be available for users to explore via an easy to use dashboard interface and an API for developers.

Algorithms: While accessibility to Machine Learning has greatly improved in recent years, to properly harness its power, one needs to be able to write code, ensure input data is properly formatted, remove any errors or biases, select an appropriate model algorithm and then tune the many model parameters which often requires complex mathematical understanding. Nvest's team of machine learning experts will build plug-and-play intuitive and easy to use tools that remove many of these barriers. Nvest empowers all users with the ability to explore machine learning models without any software programming required! Advanced users will be able to easily change settings and customize to their own needs. For developers and data scientists, nvest will promote a best in class developer API which will provide the ability to tune more granular, model settings.

Visualization: AI and Machine Learning algorithms often produce complex results. Given a human's limited ability to store and interpret large amounts of data², visualization is often relied upon to improve interpretability. With the improvement of web 2.0 tools like D3.js, interactive visualization adds another dimension to the nvest experience and allows for interpretation of more complex information. Visualization is a core attribute of nvest and we will provide a variety of static and interactive charts and figures for users to explore, save and share. Developers will be able to access our open source libraries of visualizations and easily deploy them into their applications.

3 APPLICATIONS/TOOLS

Applications: Nvest's technology platform hosts all application/tool development along with the user experience. By creating a modern, flexible platform, nvest's technology stack streamlines new application development, enabling fast launch, testing and analytic review of third party apps. In this way, the value of nvest is not tied to one or two '*killer apps*', which may go out of fashion, but rather a marketplace of different applications, created by the nvest team and community.

A sample of nvest applications (apps) is included below. For more information see Appendix 3:



□ **Pattern Finder:**

Explore the current price movement of a crypto currency (or any financial market instrument) and compare it with historical data. Scan for technical analysis price patterns, obtain probability estimates for trades like win/loss ratios, profit targets, optimal holding period, maximum loss estimates, and much more. Use Pattern Finder to set alerts or as an input for an automated trading strategy, with no coding required. Don't guess what will happen, be prepared for tomorrow by using history as a guide.

□ **Bot Builder:**

With simple drag-and-drop functionality, create your own algorithmic tools on an array of data, including prices, events and text processing. Your bot can be as simple or as complex as you want it; trigger an instant message alert if the price of Bitcoin goes above a certain level or go advanced and build your own altcoin trading strategy. Bot Builder provides easy to use templates to enable new users to experiment without writing any code.

□ **Token Discovery:**

Use Natural Language Processing (NLP) to enhance your fundamental research by summarizing white papers or other text documents like blog/forum posts, create custom sentiment scores, aggregate news and social media feeds into your own custom service, view semantic relationships and many other NLP related tasks. Use nvest's pre-built models and easily change settings to customize to your specific needs. Analyze more data than you could ever read and discover new insights.

□ **Crypto Sight:**

Monitor prices, volumes, rankings wallet movements, hash rates, wallet creations and other data across the entire crypto market. Use statistics to analyze, filter, and screen structured data across tokens and determine what are the current macro and industry trends. Use CryptoSight to create your own customized reports, alerts and dashboards.

□ **Portfolio-Rizer:**

Summarize all your crypto holdings and wallets in one place and provide portfolio level calculations and recommendations. Leverage advanced quantitative finance methods to calculate common risk and performance metrics.

□ **Opinionator:**

Buy/sell or request expert information and reports. Read a cryptographer's review, ask an industry veteran for their thoughts or visit the marketplace to view all reports available. Opinionator allows users to monetize their knowledge via content distribution to the entire nvest user base.

User experience:

Nvest's platform is embedded with machine learning technology to improve the user experience, including automated recommendations for potential trades, new projects to follow, articles to read (content), tutorials, users to follow, alerts and many more. Users can easily update and customize recommendation settings, for example changing the frequency of automated alerts and save personalized settings, like visual

preferences for charts and UI setup. Alternatively, for users who want to remain anonymous nvest will respect their privacy and not track those users.

Nvest provides a completely flexible and customized user experience. Users can choose the tools they want to use, the data they want to analyze and even the community members they wish to follow and engage with. The nvest community caters to both traders and investors, from neophytes to experts and provides each with the tools and support to meet their specific needs.

4 TARGET MARKET

The initial target market for nvest, which we refer to as ‘users’ are professional crypto investors and traders. While there are many amateur or occasional crypto investors and traders, as exchanges like Coinbase and Binance have greater than 10 million users each and there are over 29 million wallets on Blockchain.com³, nvest will target only the top tier of users initially, specifically those who are active with their portfolio and/or have a sizeable amount invested. If we use the number of Bitcoin address with greater than 1 BTC as a proxy, our current market is about 575,000 users.³ This group includes day-traders, hedge fund managers, long term investors and other active crypto investors. They have the most incentive to use our AI tools and since they already own crypto this removes a common friction point among many dApp’s, which is obtaining crypto to facilitate transactions. By targeting professionals and more active participants initially, we are deliberately focusing on a smaller audience than what is the potential for nvest, and this is a strategic tactic. Peter Theil and Elon Musk used a similar strategy when they started PayPal, specifically targeting large sellers on Ebay and in his recent book, Peter Theil explained why.⁴

“The perfect target market for a start-up is a small group of particular people concentrated together and served by few or no competitors. Once you create and dominate a niche market, then you should gradually expand into related and slightly broader markets.”

Given the rapid growth of cryptocurrencies and the difficulty involved in creating complex machine learning tools that are accessible and easy to use, we see the need for professional investing tools to be very high and current solutions below potential or unmet.

Target Market #2: Creators

A key differentiator of the nvest platform is the strategic targeting of ‘creators’, who will enrich the community by creating and adding tools to the platform. While the *users* and *creators* are not necessarily mutually exclusive, as there are increasing numbers of traders who are comfortable writing code, nvest will create content and user environments specifically targeted to software developers and data scientists. We will cater to developer’s specific needs and simplify the process involved in building and deploying new applications on the nvest platform.

There is an enormous need for data scientists and Machine Learning professionals today however not all candidates have the correct experience or training that employers need. In addition, there are many developers today looking to make extra income on the side. We aim to make nvest a community where junior developers can learn and interact with experts, where someone can find work for a few hours to supplement their income and create a community that fosters innovation.

The most popular and accessible data science programming languages today are Python and R, both of which have millions of users, though exact figures are surprisingly unavailable. Of the 18M users on Stack Overflow, Python is the fastest growing programming language, and comprises nearly 9% of all posts.⁵ Nvest will ensure both Python and R are well supported by creating libraries and packages for both. Software developers who don't use Python or R will also be supported with access to a REST API available in all common programming languages. In addition, developers who are skilled at creating visualizations and easy to use UX interfaces will be targeted and we will ensure they have the necessary support, in particular JavaScript, node.js, Angular etc.

5 MARKET SIZE, STRUCTURE & COMPETITION

Financial markets facilitate the movement of money between investors and firms and are key to the modern economy. Exchanges, like the New York Stock Exchange, NASDAQ and CME allow investors and traders to easily transact, similar in the crypto world to Coinbase, Bittrex, Binance and many others. While exchanges provide a valuable service, the complexity of modern financial markets has necessitated financial information service providers as well, for example the well-known firm Bloomberg.

A single Bloomberg terminal is licensed at roughly \$25,000 USD per annum and is considered a necessity for most institutional investors. Including the financial service divisions of close competitors Thompson Reuters and FactSet, the annual revenue of these three firms alone, we estimate, was over \$15 Billion (B) in 2017. For comparison, the world's 10 largest listed stock and derivative exchanges generated \$21B in revenue in 2017 and had a combined market cap of over \$255B.⁶ Clearly information services related to trading and investing is big business, worth over \$180 Billion, if we use valuation metrics of exchanges as a proxy.

Professional investors pay a high price to access services like Bloomberg because of the depth and

Table 1: Nvest.ai Competitive Position

Company	User Price	Data Feeds	Data Analysis	Visualization	Target Market	Social	ICO Raise/ Current Valuation	Max ROI
nvest.ai	Nvest Token	Excellent, structured and unstructured	Next Generation	Excellent	Crypto trader/investor & Data Scientists	Yes	\$20M target	-
Santiment	Open Source	Poor so far. Sentiment focus	Sentiment Only	Poor	All Crypto currency	Not sure	\$12M raised, \$116M mkt cap	27.3x
Enigma	Token	Expected to be Excellent	Good	None	Quant Crypto currency	Not sure	Raised \$45M Market Cap \$219	13.6x
Cindicator	Token	Good	Mostly Polls	Basic	Crypto currency traders		Raised \$15M Market Cap \$36	31.6x
CoinFi	CoinFi Subscription	Ok, focus on structured data with some sentiment	Ok	Ok	Crypto currency traders	Yes	\$15M raised \$52M market cap	0
Numerai	Free	Excellent but encrypted	Up to users	Basic	Data Scientists	Yes	\$24M market cap	18.2x
Blox/ CoinDash	Coindash Token	Block chain data	Excellent	Basic	Crypto currency	Yes	\$16M raised \$61M mkt cap	27.7x
investFeed	Mid	Only Tweets	Excellent	None	Active Traders in Stock and Crypto markets		\$4M raised, \$24M mkt cap	8.6x
Bloomberg & Reuters	Extremely High	First class structured data. Growing unstructured	Excellent	OK		Basic	Bloomberg \$9.4B in Sales - 2016	-

breadth of its data and tools. While there are many other software providers, some providing niche services or others at a lower price point, the scale of the three largest firms enables them to offer the broadest array of data and analytics which is tough to compete against.

We believe the tremendous growth in both established and new projects in the crypto markets indicates that there is a need for professional investor tools in this market as well. While a few recently launched projects aim to serve this market, none so far that we can identify provides the depth of nvest's functionality or platform advantages. A brief summary of the competitive environment can be found in Table 1.

6 NETWORK EFFECTS

Financial markets by design are competitive, encourage secrecy and are often dominated by large players with limited incentives to share. Nvest breaks this paradigm by bringing together a diverse user base with different skill sets and encourages users to create, share and learn within a community by focusing on incentives. As nvest creates and hosts an increasing number of value added tools, investors and traders will be drawn to our platform in order to access them. And when that happens there will be more incentive for outside developers to build new tools because of the large audience they can reach.

By creating a community of users and creators, we can foster innovation and creation which increases the value add of the nvest platform and creates strong network effects. As a decentralized community nvest can outmaneuver traditional, centralized organizations and has the potential to disrupt the entire financial service information industry.

7 TOKEN ECONOMICS:

Access to tools/apps running on the nvest platform will require payment using nvest tokens. The price set to access tools will vary but the initial goal is to build a large user base, so prices will be set at affordable levels. **Master Holders**, (see TOKEN DESCRIPTION) will decide on the specific pricing policies for tools.

Tokens received as payments for using the platform will be property of the nvest organization (See ORGANIZATION). The nvest organization will distribute all tokens received according to guidelines which again will be determined by the Master Holders. Tokens generated from applications or tools built by the nvest team will initially be distributed according to the following guidelines (after any applicable taxes/ charges, and subject to review by the Master Holders)

Nvest Token Distribution Policy

Percent	Distribution Party
30%	Tokens deposited into a reward pool for technolo- gists and tool creators. Distribution guidelines for re- ward pool will be objectively based on usage statis- tics and transparently displayed.
70%	Tokens held by nvest Organization and used for general budget.

When the nvest platform is open to applications built by the community, the organization will ensure that at least 60% of the tokens received from those apps go back to the contributor for his/her work. The exact split will however depend on a variety of factors, including technology workload placed on nvest's platform and improvements vs existing solutions. Master Holders will decide the specific token reward terms.

Once the token generation event is complete, Master Holders will be given the opportunity to vote on a variety of smart contracts that will be created which will contain the exact details related to token economics and the distribution policy.

Master Holders will also be allowed to vote on burning part of the nvest tokens, subject to a legal opinion which can assure that nvest tokens will remain exempt under applicable federal securities laws.

Token Intrinsic Value

The theoretical value of the nvest token should be linked with the utility gained from using nvest apps. If an application can save or make a user profits, then the token value should reflect a part of that value.

Making successful investment decisions is more than just making a trade recommendation to buy or sell a given token - it can be providing investors with portfolio management tools, informative personalized alerts, or enhancing research through Natural Language Processing. A key point here is that nvest apps do not need to have a direct profit and loss attributable, like a trading strategy, in order to provide value.

Should the number and quality of applications built on top of the nvest platform increase, it is likely to provide users with more value and therefore the value of the token should see commensurate growth.

However any growth of the platform is based on a number of factors and nvest makes no claim that any future growth will be achieved. See Terms and Conditions for more details.

For more details regarding nvest tokens, please see e **Token Description**.

8 STRATEGY

As a start-up focused on growing its user base in the rapidly evolving crypto industry, nvest will rely on lean startup methodology towards technology and product development. As nvest's products are digital services, concepts like MVP, continuous deployment, actionable metrics, user feedback, failing fast, and strategy pivoting will be emphasized. We also understand that even the best technology can fail if it is not marketed correctly and we will ensure that adequate budget and importance is given to the marketing team who will be expected to provide continuous feedback.

The team at nvest is committed to providing high quality results in every aspect including visual design, user experience, data collection, algorithmic implementation and we will embed this in our culture and values.

We fully expect competitor projects to copy our ideas; therefore, building a strong user base of both users and creators is critical to our success. As an early mover delivering accessible AI tools to investors, we will move fast, delight our users and focus on creating a large network.

9 TECHNOLOGY & ENGINEERING

The nvest technology platform is developed with the following tenets in mind: scalability in the types and size of data, scalability in processing and computation, intuitive data models, collaboration and quick experimentation and concrete metrics for success. With these, our goals are to provide a state-of-the-art platform with complete coverage of all relevant data sets necessary for market analysis - cleansed and intuitively modeled. The system is modular with plug-and-play components for quickly extending the feature

set. The underlying technology stack consists of the following 5 layers (see appendix 1):

1. Data Ingestion and Preprocessing: This layer consists of statefull processes that mine, collect and preprocess data from external sources. The processes are run on a distributed cluster to preprocess and cleanse raw data feeds and crawler results, storing the raw data files on an HDFS data lake.

2. Data storage, Modeling and Representation: The output from the ingestion layer is then abstracted and stored in an accessible form, optimized for running queries efficiently. The databases will consist of distributed mongoDB instances for hierarchical data as well as Amazon Redshift clusters. Kinesis messaging stream will be used to subscribe changes to the data and post-processing will run on an EMR cluster with Spark.

3. AI/Machine Learning Experimentation and Modeling: Deep learning models are developed and trained over the data abstraction layer (above) to provide predictive and generative features that cross the market data, personalized user preferences and other external sources. For knowledge extraction, modern NLP models will be applied to process language based inputs, leveraging Part of Speech Tagging and training domain specific word-embedding models for classification of terms and topics. These models, in combination with the deep learning architecture over structured market data, will be used for aggregating relevant and trending crypto and market “concepts” for prediction and analysis.

4. Predictive and Generative Models: Models trained will be applied to their use-cases to provide insights about cryptocurrencies. These models will process thousands of features to detect patterns and knowledge from the base data sets. These results will be further exposed via APIs and allow for integration with data scientists, business partners and app developers.

5. Collaborative UI and Interactive Visualizations: output from predictive analytics and generative models are interfaced with rich and customizable UI components, leveraging visualization projects such as D3.js. Open source libraries will be created to enable developers to easily access previously deployed visualizations with limited work. Users can share, follow or contribute to the results.

In addition to the base technology platform, nvest also provides proprietary and highly optimized models that uniquely set it apart from potential competitors. In particular, nvest takes a novel multi-dimensional signal processing technique to both training models as well as exposing APIs to developers. An example of a proprietary algorithm is our optimized wavelet feature space (Appendix 2), in combination with RNNs, which provides a rich vector space representation for analysis and search of trends/patterns over arbitrary **scales** and **times**. Our basis functions have been finely tuned to provide better time-variant causal processing across data sets with high dimensional feature spaces.

The nvest platform is accessible via web and mobile apps using reactive design principals. Modern cross-platform JavaScript framework is used to quickly develop the front-end apps and admin consoles. Front end UI layers are optimized to deal with large amounts of data, and when applicable proprietary JavaScript processing is used to reduce server workloads.

Technology security is maintained using industry best practices for all access points, vulnerabilities and system designs. All external traffic will flow through SSL layers. Audit trails of all transactions will be recorded, and OS/system patches will be updated on a regular basis. Regular security reviews will take place by third party security consultants. PII will be isolated in a separate data layer.

10 SCHEDULE AND ROADMAP

DISCLAIMER: Information provided is not a commitment, promise or legal obligation to deliver any functionality. All forward looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Please see Terms & Conditions for more information. For a detailed history of nvest please see www.nvest.ai/roadmap.html

The nvest platform is currently running live on stock market and limited crypto market data at www.nvest.io. Upon completion of the token distribution, we will merge nvest.io with nvest.ai.

It is important to note that nvest is building a software platform focused on data and analytics. We utilize the blockchain primarily for ownership, governance and payments. Inasmuch our technology development is quite different vs many blockchain focused projects. We are not building a mainnet / testnet but will leverage other projects who have built that technology, with the current plan to base the project on Ethereum ERC20 technology for token distribution. We are exploring the possibility to leverage blockchain server processing to host our services, including projects like Sonm and potentially leverage other blockchains like EOS for high frequency transactions.

Phase 1: 0 – 3 Months

- Token Generation Event
- Technology Development:
 - Upgrade data feed services and increase direct exchange connections to collect and store data, including price, order book, and block-chain information.
 - Collect unstructured data related to cryptocurrencies
 - Upgrade current visualization layer and UX.
 - Release upgrades of tools: PatternFinder and BotBuilder on nvest.ai
- Build out nvest team with strategic hires, focused on software development and machine learning.
- Reach out to contacts to establish strategic business relationships in financial markets, data science and Machine Learning.
- Create user group for beta testing and feedback

Phase 2: 3 – 9 Months

- Technology Development:
 - Expand the nvest platform in areas such as NLP, high frequency data and unstructured data.
 - Create user dash boards and customizable widgets
 - Focus on interactive visualization of all nvest tools. Integrate popular libraries like d3.js
 - Develop API protocols. Beta release to select data scientist and channel partners
- Enhanced integration of token-based transactions.
- Security review of user account systems, token transaction systems and PII.
- Ramp marketing expense to focus on new user acquisition. Ensure analytical capabilities are in place to evaluate ROI

Phase 3: 9 – 18 Months

- Collect comprehensive feedback. Analyze user preference and utility of current nvest tools. Pivot where necessary.
- Make smart recommendations to users based on their history and preferences.

- Beta release nvest mobile app
- Create specific content and user experiences for software developers and data scientists.
- Host first contest for community created tools. Provide nvest token rewards.
- Drastically increase content available, including tutorials, daily commentary and expert reports.
- New version release of tools such as Token Discovery, Crypto Sight and Portfolio-Rizer.

11 MARKETING

As nvest is a startup technology platform, the company has been focused on core development needed to bring the project into operation. However many technology companies fall into the trap of *'if you build it, they will come'* and do not succeed no matter how advanced the end product. We fully understand this, and we will devote sub-stancial resources to brand awreness, user acquisition, product marketing and design functions. Nvest's public launch is an important product marketing opportunity given that initial investors will likely over-lap with the target consumer user base.

Examples of marketing and promotional activities to drive user growth and product-adoption will include:

- Active blogging, social media posting and promotion of user generated content on nvest and popular crypto sites.
- Bounty campaigns to promote the project across social media
- Contacting fund managers, traders, widely followed crypto investors/influencers for expert reviews and input towards new tools they would like to have.
- Contact partners in Trading, FinTech and Data Science
- SEO, including landing pages & keyword campaigns
- Online advertising
- Industry networking
- Sponsoring & attending user groups and meetups

Strategic Partners

Nvest is interested in partnering with strategic firms that would benefit from our tools, such as hedge funds, exchanges (to offer nvest to their users), crypto marketing professionals and influencers. We are interested in making pre-sale offers to potential partners. (See TOKEN DESCRIPTION – PRE SALES for more information.)

12 TOKEN DESCRIPTION

Nvest will create 1,000,000,000 Ethereum ERC20 tokens to be held by the nvest organization and distributed to holders during the token generation event. Nvest tokens will serve as a utility token, do not pay any interest or dividends and should not be considered a security for investment purposes. Please see **Legal & Regulatory** for more information.

Holders of 500,000 or more nvest tokens will confer voting rights proportional to their ownership and will be considered, "Master Holders."

Token Distribution

Tokens	Pct	Holders
350mm	35%	Nvest.ai (Founders and Employees)
50mm	5%	Advisors & Partnerships
50mm	5%	Reward Pool initial contribution
20mm	2%	Bounty & AirDrop
530mm	53%	Public & Private Sales
1,000mm	100%	Total

Decentralized Autonomous Organization (DAO): Nvest will create a democratic decentralized organization that exists solely in the blockchain. The DAO will be responsible for voting on all matters related to nvest tokens. In order to be a participant in the DAO, a token holder must meet the minimum threshold to be a master holder, currently set at 500,000 tokens, or 0.05%. The initial smart contract created with the token offering will grant Master Holders the right to vote on an additional smart contract which will contain all the rules regarding Master Holder voting.

Master Holders will be granted voting rights to make decisions on all matters related to nvest tokens, including reward pool distribution policies, app pricing and all blockchain related issues. In addition, master holders may receive discount pricing and first access to all nvest apps and tools.

Fund Raising: General sales will be open to the public beginning on February 2, 2019 through February 28, 2019, subject to change. Nvest's initial token distribution will be denominated solely in Ether, and tokens will be issued at a nominal value of \$0.03 USD. A minimum sale target will be set at \$6 Million USD, which if not received by the conclusion of the distribution event will result in the cancellation of the campaign and all funds will be returned. A token maximum capital raise will be set at \$15M. If the token minimum is met but not the token maximum then any remaining tokens will be burned along with a portion of the team and advisor tokens to ensure the stated distribution remains.

A maximum of 40,000,000 tokens (4%) will be available for any individual address and a minimum deposit of 0.01 Ethereum will be required to participate. The exchange rate, token contract address and detailed terms will be published on the nvest website 48 hours before the distribution. The exchange rate per ETH will be updated daily via an oracle.

Full details of nvest's token will be described with the release of nvest's smart contract which will take place at least 4 weeks before any public generation event for review and comments.

Private and Pre-Sales: Prior to the public sales, select private-sales will be offered to strategic partners, advisors and large investors for a total of \$1M USD. Nvest will also accept pre-sales, in the amount of \$2M USD, which will be governed by the smart contract but receive a sliding bonus from 20-30%⁸.

For more information please contact, avi@nvest.ai

Vesting: All team members, advisors and strategic partners will be subject to vesting terms which prohibit selling any token for 12 months following the token creation.

Reward Pool: All tokens designated to the reward pool will be locked and inaccessible until a follow on smart contract is created which will detail how the reward pool tokens will be distributed. Only Master Holders will be allowed to vote regarding the reward pool distribution policies.

13 Budget

Nvest Annual Budget

Percent	USD	Category & People
58.3%	\$4,050,000	Technology Development: 8 Machine Learning Experts 8 Software Engineers & UX 3 Jr Developers & Offshore
10%	600,000	Marketing, Customer Service & Business Development
5%	600,000	Exchange Fees (listing)
3%	200,000	Data Feeds
3%	150,000	Operational Expenses
10%	150,000	Legal, Audit and Regulatory
5%	300,000	Reserve
100%	\$6,000,00	Total

The forecasted annual budget for nvest is \$6M USD and is mostly related to technology staffing. We believe in hiring a small expert team to build out the nvest platform vs hiring many developers. Given the recruiting trends for experienced Machine Learning professionals, we will need to pay competitive salaries in order to attract quality talent. We will explore hiring more engineers if the maximum fundraising goal is met.

14 TEAM

Avi is nvest's financial data and market expert. He graduated with honors from the Schulich School of Business and is a CFA Charterholder. He has over a decade of financial market experience and currently works as a Senior Investment Analyst for an SEC registered investment advisor, HEIC, which manages high net worth clients in Miami. He has extensive experience using and creating financial data and tools, including algorithmic trading, economic forecasts, portfolio management, fundamental security analysis and quantitative factor analysis. He has global experience across a wide range of financial assets including equities, ETF's, futures, commodities, high yield bonds, foreign exchange, asset-backed securities, hedge funds and cryptocurrencies.

As nvest's founding partner, his role will focus on product development, data services, user experience and marketing strategies. [LinkedIn](#)

Solly is nvest's technology expert and will be responsible for software architecture, implementation and team staffing. Saul graduated with a PhD in Computer Science, specializing in Machine Learning in 2005. He has held various senior level positions in the technology field, including leading a team of over 30 developers, responsible for a company's entire technology stack and high-traffic low-latency website. Currently he leads an expert AI team at one of the world's largest technology companies.

Saul has extensive software development experience across multiple architectures, environments and programming languages. As a proponent of machine learning before it was highly popularized, he has vast academic and practical experiences and industry contacts which will be needed for team recruitment.

Saul is a committed founding partner at nvest however his current employment situation does not allow for

more public disclosure. For more information please contact us.

Waleem is nvest's resident Data Scientist. He earned a PhD in Financial Economics from the University of Alberta and a Masters in Economics from Central Michigan. Waleem is currently a manager of Business Intelligence and Analytics at Alberta Pension Services, a large Canadian pension plan. He has expert experience with machine learning including Time Series Modeling, Autoregressive Markov Regimes and Anomaly Detection. He has vast experience in applied predicative analytics to business problems. Waleem is an expert in R, Python, SAS, MATLAB and C/C++. [LinkedIn](#)

Jenni is nvest's senior software engineer. She holds a BS in Computer Science & Electronic Engineering from University College London and Stanford (combined). Jenni has worked at Cambridge labs, specializing in Machine Learning and Statistical modeling and has several years' experience in software development and applied machine learning. She is an expert in firmware systems and has worked on various projects including autonomous driving, bio informatics, risk management, algorithmic trading and machine vision, among others. She is a MATLAB and C++ expert. [GitHub](#)

Eddie is a software engineer and web developer. He holds a BS in Computer Science from NYU and has several years' experience in software development, with a focus on web technologies. Eddie is an experienced full stack developer. [LinkedIn](#)

Bruno is nvest's digital marketing manager. He holds an MBA from Millennia Atlantic University. Bruno has several years of progressive experience in marketing focusing on financial markets in Brazil with proven results and he is an expert at marketing analytics and digital media. [LinkedIn](#)

Advisors

Leandro Ruschel, is the founder of Liberta Global and L&S Group. The L&S group represents more than seven different companies in Brazil and provides financial services including overseeing R\$700M for client advisory and has over 150,000 subscribers to their comprehensive financial education including a well-regarded trading school. Leandro is regularly interviewed by major Brazilian media companies and is renown in the Brazilian financial community for his influential role developing Technical Analysis and is the author of the book "Me, the Stock Market and my Grandmother" (Eu, A Bolsa E Minha Avo). [LinkedIn](#)

Mickael Salabi, is the manager and founder of Tokenpot Capital a crypto hedge fund. He has been a blockchain enthusiast since 2012 and been an early investor in various projects including Ethereum, Iota, Qtum and others. Mickael is also an advisor to [Digitex Futures](#) (DGTx) and was their first outside investor. Mickael has worked as senior technical architect at RazorFish and has worked in the technology field for several years. [LinkedIn](#)

Sol Kafai is a Barrister and Solicitor (Lawyer), and works as in house counsel at one of Canada's largest financial services firms.

Alessandro Barroso, is the Manager of Equity Trading Software Development at Franklin Templeton Investments. Alessandro is a trading and crypto enthusiast and has designed many different trading software including advanced technical indicators and automated trading strategies. Alessandro also has over 15 years' experience in software development, with a focus on web technologies. [LinkedIn](#)

We have contacted and are engaging with several high-quality advisors. Stay tuned.

15 ORGANIZATION

The nvest organization will register an offshore based entity that will create all the tokens and then distribute them during the token generation event. We have been in contact with various lawyers and will likely domicile an LLC based in either Bermuda, Curacao or another crypto friendly caribbean island with well establish laws. The beneficial owners of the organization will be the co-founders, Avi and Solly. After the token generation event and all tokens have been distributed, the rules governing the tokens will be made by Master Holders and the DAO. Any tokens earned by the organization will be distributed according to the policies set by the DAO.

The nvest organization will sign a binding lifetime agreement for all software development regarding the nvest platform to be performed by an operating company domiciled in Miami, Florida, where the nvest team will be located.

16 LEGAL & REGULATORY

Nvest tokens are a utility token and do not provide any legal ownership rights, dividends or interest and they do not meet any legal qualification of a security. Any person or entity purchasing nvest tokens will agree to all Terms and Conditions, posted on the Nvest website: www.nvest.ai/terms-conditions.html

RISKS:

ACQUIRING NVEST TOKENS ("NVST") INVOLVES RISKS, IN PARTICULAR THAT NVEST TOKENS MAY FLUCTUATE IN PRICE, PRIVATE KEY MAY BE LOST, SUBJECT TO HACKING, EXPOSURE TO RISKS USING ETHEREM PROTOCOL, RISKS ARISING FROM TAXATION, LEGAL AND REGULATORY BODIES AND A VARIETY OF OTHER UNANTICIPATED RISKS. COMPREHENSIVE RISK DISCLOSURES CAN BE FOUND IN THE COMPANY'S TERMS AND CONDITIONS.

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ANY DISPUTE, CONTROVERSY OR CLAIM ARISING OUT OF OR IN RELATION TO NVEST, THE NVEST ORGANIZATION AND THE CURRENT WHITE PAPER SHALL BE RESOLVED ACCORDING TO THE LAWS OF BERMUDA, WITHOUT REGARD TO CONFLICT OF LAW RULES THAT WOULD CAUSE THE APPLICATION OF THE LAWS OF ANY OTHER JURISDICTION. ANY DISPUTE BETWEEN THE PARTIES ARISING OUT OF OR RELATING TO NVEST SPECIFIC TERMS OR ITS SUBJECT MATTER OR FORMATION (INCLUDING NON-CONTRACTUAL DISPUTES OF CLAIMS) THAT IS NOT SUBJECT

TO ARBITRATION WILL BE RESOLVED IN THE COURTS OF BERMUDA. TOKEN HOLDER'S RESIDING IN COUNTRIES OUTSIDE THE ORGANIZATION'S DOMICILE SHALL REVIEW THEIR RESPECTIVE RIGHTS AND RESPONSIBILITIES.

17 CONCLUSION

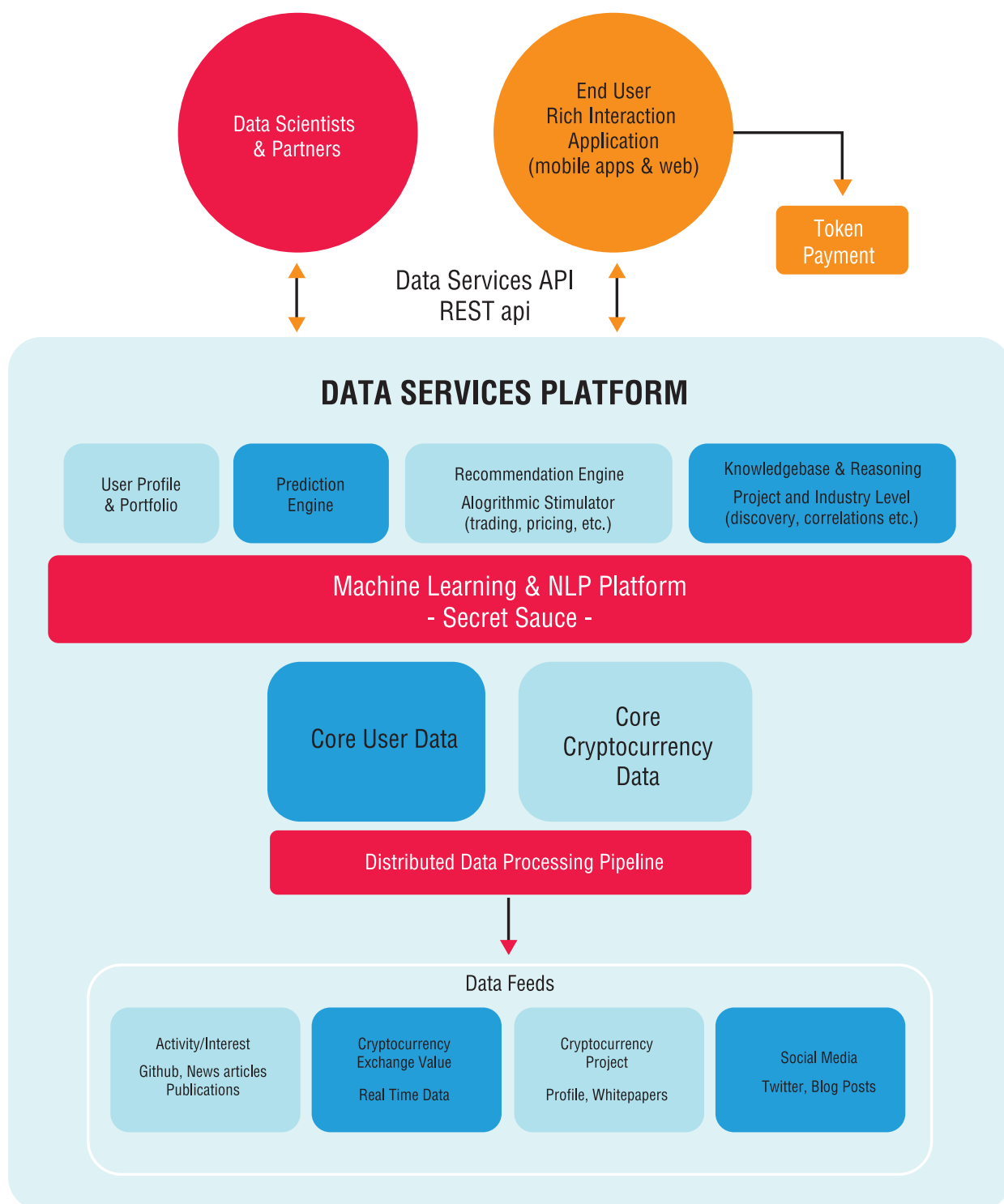
Nvest is creating a revolutionary technology platform for crypto investors and traders. The success of crypto exchanges like Coinbase, Binance and KuCoin is proof of new crypto ecosystem evolving, however exchanges are just one aspect in an advanced financial market and large opportunities for ancillary services has yet to be met. By providing traders and investors with intuitive and easy to use AI tools, nvest empowers traders and investors to make data driven decisions and will become highly valued by its users. And as the trader/investor user base grows, token economics will incentivize creators to join as well, creating a symbiotic community that can disrupt the multibillion dollar financial information industry. The future of investment decision-making is within sight. Join the nvest community and help make it a reality.

Nvest.ai – Complexity Simplified Elegantly.

REFERENCES

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2. Most humans can't memorize more than 7 digits at a time https://en.wikipedia.org/wiki/The_Magical_Number_Seven,_Plus_or_Minus_Two and human spatial ability to deal with multi-dimensional data is limited <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4529354/>
3. <https://blockchain.info/charts/n-unique-addresses> <https://bitinfocharts.com/top-100-richest-bitcoin-addresses.html> <https://www.financemagnates.com/cryptocurrency/news/binance-user-base-reaches-9-million-extends-trading-support-etc-pairs/> <https://www.ccn.com/a-giant-grows-larger-coinbase-has-about-as-many-customers-as-fidelity-investments/>
4. Zero to One: Notes on Startups, or How to Build the Future, Peter Thiel, 2014 Python users <https://insights.stackoverflow.com/trends?tags=r%2Cstatistics%2Cpandas%2Cpython> <https://stackoverflow.blog/2017/09/06/incredible-growth-python/> another reference
5. Source: Bloomberg
6. Pre-Sale bonus tokens will be set forth according to Terms and Conditions. Please email us for more information.
7. Nvest Terms and Conditions can be accessed online: www.nveset.ai/terms-conditions.html

Appendix 1 – Technology Platform Design



Appendix 2 – Machine Learning Base Component

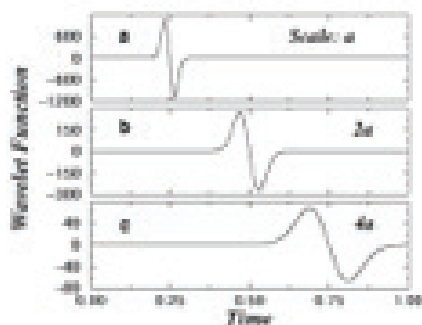
MACHINE LEARNING BASE COMPONENT

Predictions

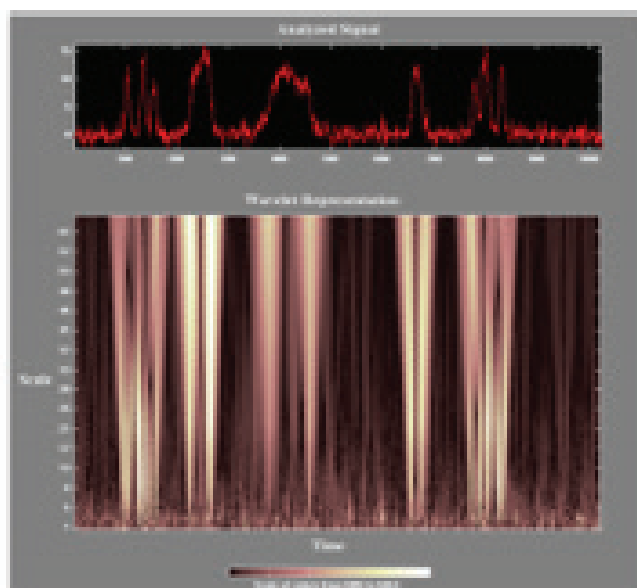
Clustering & Classification

Deep Learning Models
Contextual Crypto Currency Embedding - Modern NLP

Unique Multi-Fature Multi-Scale
State Sequence Representations (ie Wavelets)



$$h(s, \tau) = \int \theta(t) \Omega_{s,\tau}(t) dt$$





Appendix 3 Some of nvest's awesome tools

Intro: Nvest is a technology platform providing data and analytics for crypto traders and investors. We provide different tools or applications (apps) and enable our users to make data driven decisions. Nvest also streamlines application development and enables creators to easily build and deploy their own ideas. This means that the initial apps launched are just a sample of what will be offered in the future as the developer community grows.

To kick start the platform, the team at nvest will create several applications targeted to crypto traders and investors. We will seek feedback from our users and pivot when necessary. The site nvest.io has a working version of Pattern Finder and Strategy Builder (a pre-cursor to the Bot Builder tool) for users to test and explore. Current examples are first version releases used to demonstrate how traders and investors can use data and analytics in their decision making process. Version updates should dramatically improve the user experience and output results.

A core thread running through all nvest applications is that they are easy to use and interpret. As nvest obtains more user data, applications will become smarter and be able to learn user preferences and provide better recommendations to a user's specific needs.

Pattern Finder

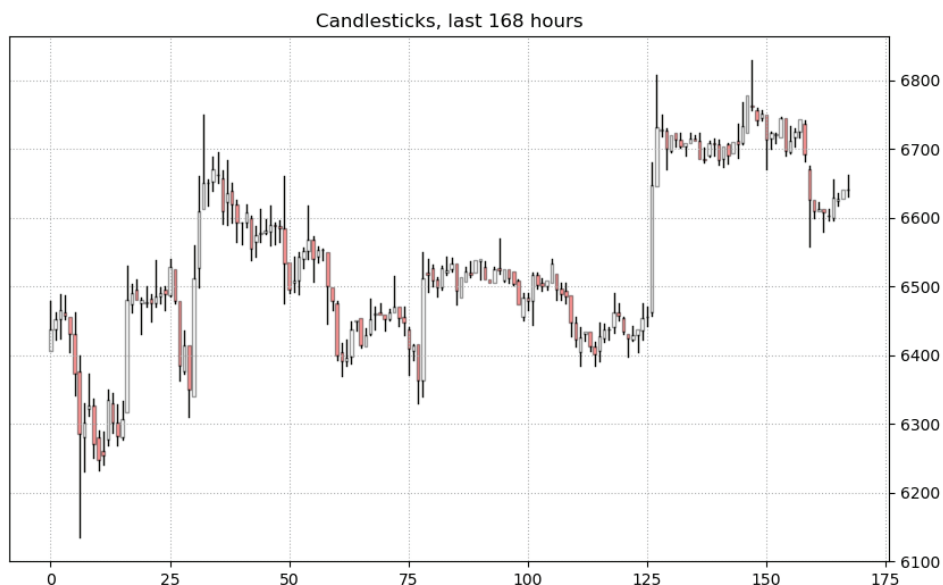
Pattern Finder is specifically built to analyze time series data, like crypto prices, volume, order flow, sentiment scores and more, in order to find patterns in the data automatically. Just as the popular music app Shazam can analyze a song in seconds, Pattern Finder can do a similar analysis on charts and data. It can scan for commonly used technical analysis, like price patterns, candlestick formations, trend lines, moving averages, oscillators, breakouts, consolidations and many more. It works on Bitcoin, ETH, LTC or any altcoin you can think of, as long as there is price data.

Try Pattern Finder on nvest.io right now!

Pattern Finder's results include many different data points, like future price probability estimates, win/loss ratios, profit targets, maximum loss estimates, best fit indicators to name a few. Armed with Pattern Finder data, traders can better analyze a trade setup, game plan for possible outcomes, or even use Pattern Finder to generate a template for an automated trading bot, with no coding required.

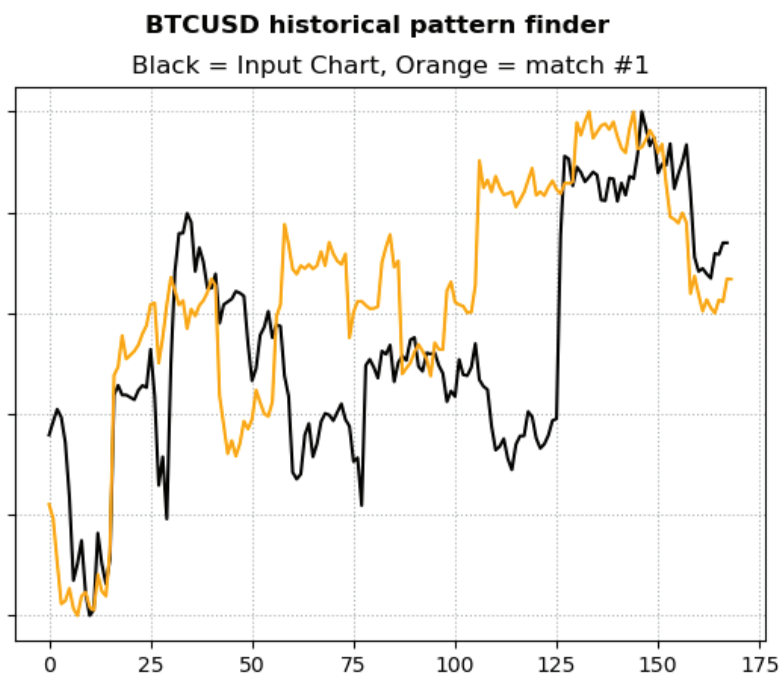
Traders Intuition

Many traders like to look for price patterns in charts, the problem is that technical analysis can often feel more like voodoo than a science. In the chart below we have a candlestick chart of hourly bitcoin prices from the end of May, 2018.



In order to simplify the chart we are going to discard the High, Low and Open values from the candle stick and show just the closing prices as a line chart. Later we can add back these elements as additional 'dimensions' or features for Pattern Finder to search.

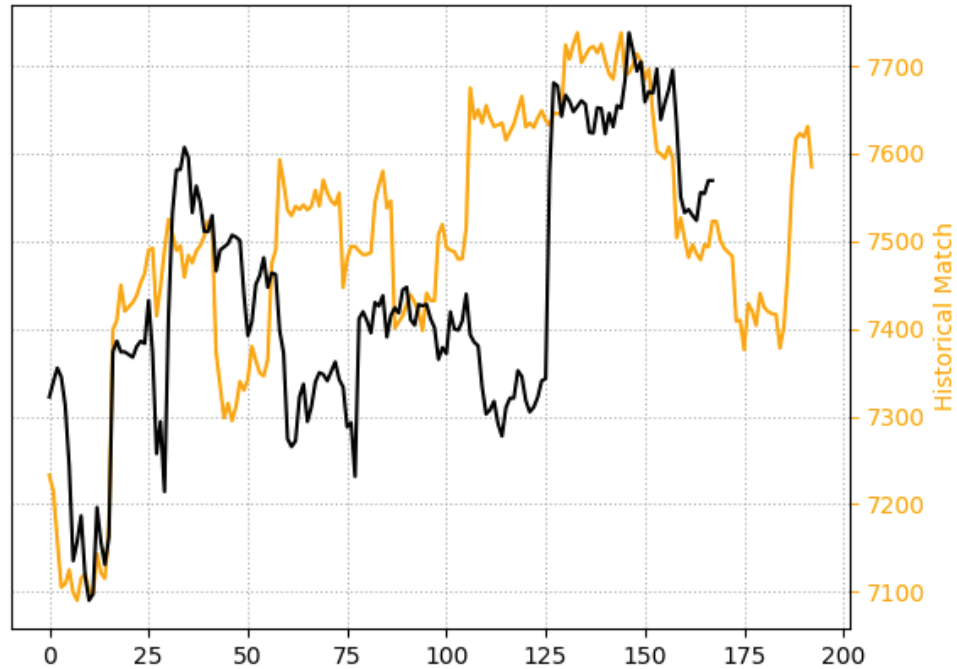
Next we ask Pattern Finder to look through historical data and locate a similar looking price charts. The algorithm returns the following result, with our initial chart in black and the Patter Finder match in yellow.



Now that Pattern Finder has identified a match with historical data, we can use that information to help provide objective statistics and data to analyze the current market. For example, we can see what happened to our 'match' on the following day or next 24 periods. In this case price went down a little then back up.

BTCUSD historical pattern MATCH #1

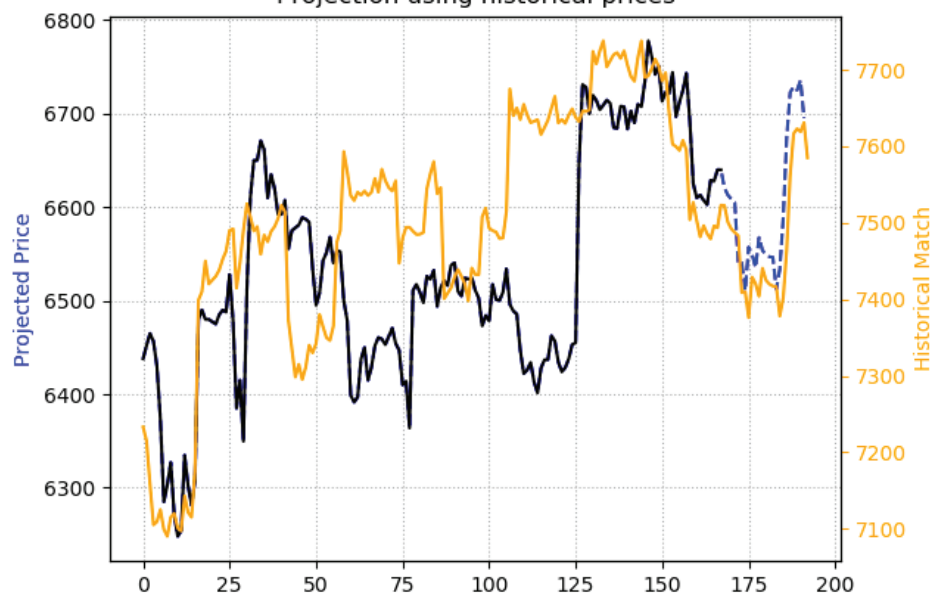
2018-05-28 to 2018-06-05



Sticking with the just the current data, we can use it to make an estimation of what the current chart would look like if the historical path was followed.

BTCUSD historical pattern MATCH #1

Projection using historical prices



While this is a very naive and simple projection, it does provide objective insights that a trader or investor can use in their investment process. For example, advanced users can select multiple 'matches' and generate a wide range of statistics.

Multidimensional Feature Representation

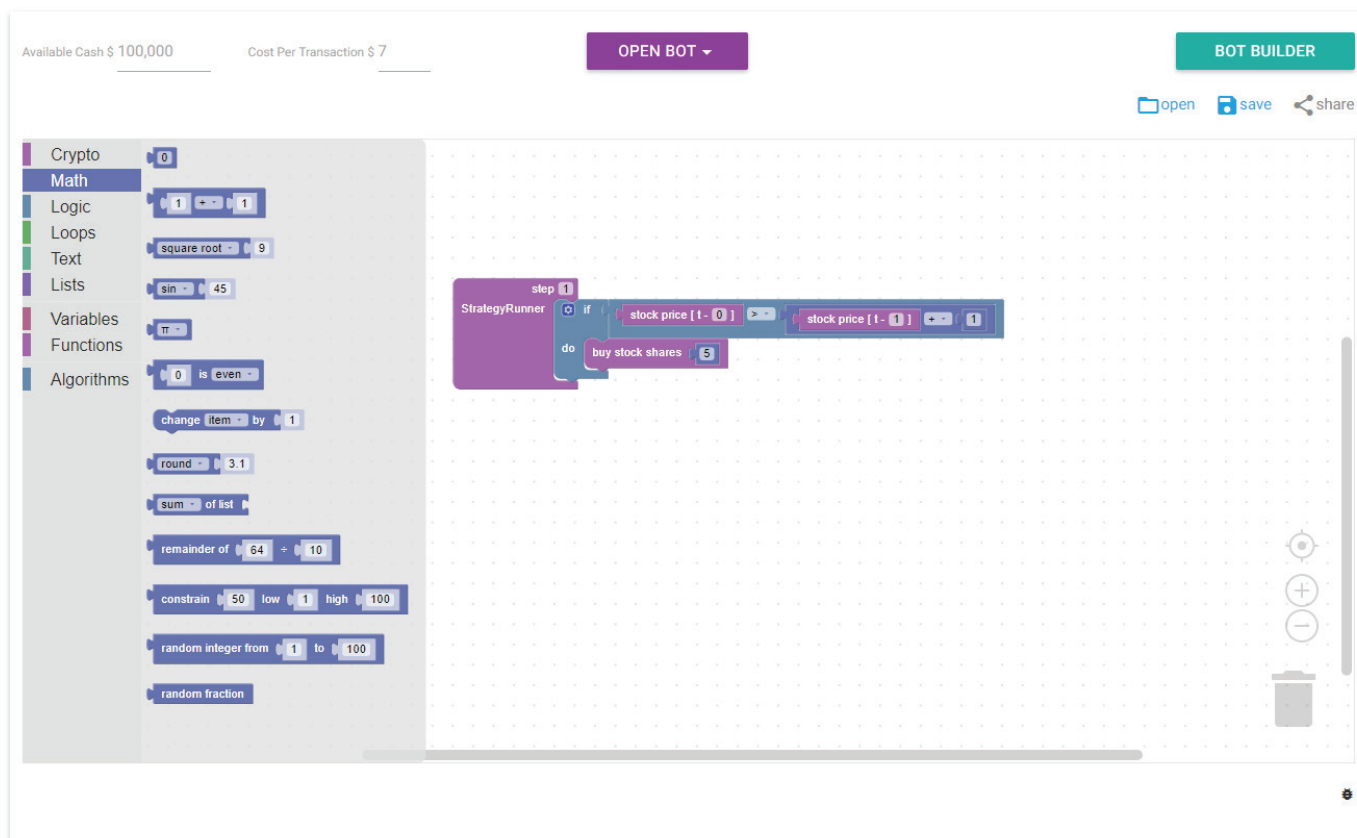
While finding matches in data is pretty neat, the magic of Pattern Finder is that since its done by a computer, it can process thousands of data points across multiple dimensions and data types. It can search for price patterns like we did above as one input dimension and combine it with candlestick formations, sentiment data, trend signals and pretty much anything you can think of that has quantified by data. Using nvest's advanced signal processing techniques, Pattern Finder empowers users with historical data without having to write complicated back testing and trading algorithms. Instead one can think of Pattern Finder using heuristics or what is sometimes called fuzzy logic to determine the rules automatically.

Check out our Pattern Finder updates on Bitcoin updated every week on [Twitter](#)

Bot Builder

Nvest is collecting lots of data but it doesn't do you any good unless you can do something with it. With Bot Builder you can easily access the data and create your own bot to perform an action with it. Your bot can be as simple or as complex as you want it; trigger an email alert if the price of Bitcoin goes above a certain level or go advanced and build your own altcoin trading strategy. Bot Builder provides easy to use templates to enable new users to experiment. Using nvest's drag and drop user interface, built on top MIT's wonderfully popular [Scratch](#) library, Bot Builder allows you to create your own algorithms without writing any code.

Bot builder is currently running on [nvest.io](#) under the tab 'Strategy Builder'. While current functionality is limited to building a trading strategy, nvest will add useful features like email/ sms/ telegram alerts and reporting features.



Crypto Sight

As crypto markets have evolved into an entire ecosystem with thousands of projects and hundreds of exchanges, analyzing the entire system can provide insights that can be missed if you aren't looking holistically. Since nvest is in the business of collecting and analyzing data, we make it easy to analyze the entire crypto market. We leverage established solutions from traditional financial markets and apply them to crypto markets, all the while understanding the nuances and tailoring the output for crypto.

Crypto Sight provides a variety of templates for users to start, including daily market summaries, crypto scans and statistical insights and guides users to build and customize to their own needs. See a sample of a CryptoSight report [here](#).

Technical traders can use pre-built scans to find trading opportunities or create their own customized versions. For more fundamental oriented investors, CryptoSight can provide a quick way to recap and filter news on specific projects and interests.

Check out the gallery of crypto sight images on our [reddit](#) or [twitter](#) pages. All of these and more will be available to users, in real-time and easily customized to your own needs.

Symbol	Price USD	MarketCap	Rank	1D%	3D%	Trend1	Trend2	Up!
bitcoin	7260.06	\$125,536.58	1	-0.17	3.16	1.7	10.54	
ethereum	289.26	\$30,025.07	2	-1.74	2.21	-0.27	-7.73	
ripple	0.335961	\$13,605.42	3	-1.92	0.19	0.45	-2.96	
bitcoin-cash	626.36	\$11,233.85	4	-3.02	15.33	2.47	15.53	
eos	6.47	\$6,014.08	5	-1.97	0.62	4.29	20.48	
stellar	0.225325	\$4,217.85	6	0.26	1.46	0.27	-0.48	
litecoin	65.37	\$3,825.38	7	-0.43	5.55	1.99	10.08	
tether	0.998642	\$2,829.06	8	0.08	-0.14	-0.04	-0.17	
cardano	0.103607	\$2,713.26	9	-0.79	1.38	0.7	-2.04	
iota	0.698262	\$2,010.16	10	-2.04	-1.96	4.01	12.47	

Showing 1 to 10 of 100 entries

Previous 1 2 3

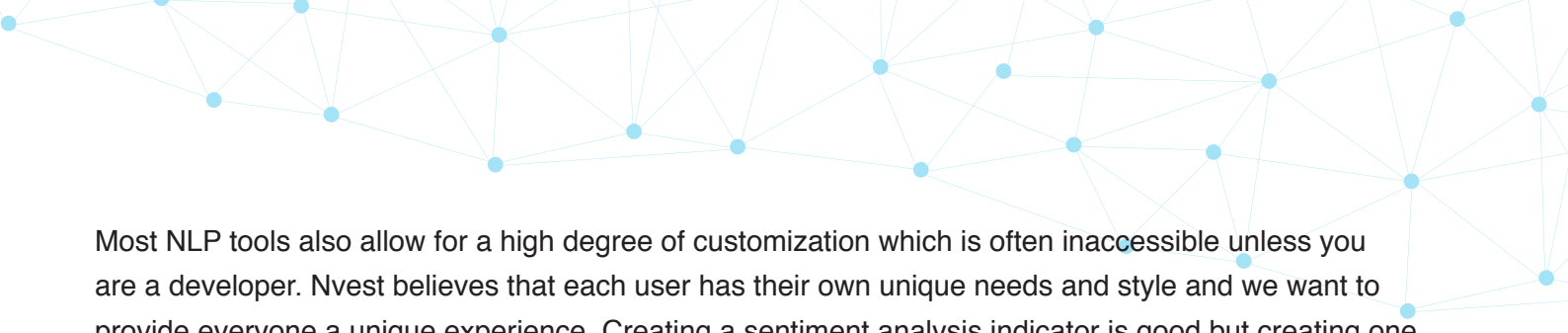
Coin Market Cap Charts



Token Discovery

Statistical analysis is good when you have numbers, but what do you do when the data you are dealing with is words and text? Fortunately machine learning has been working on the problem for a while and recent advances in the field of NLP (“Natural Language Processing”) allows for excellent analytical insights on text data.

NLP encompasses a variety of different applications, from sentiment analysis, speech recognition, automatic summary, topic segmentation, relationship extraction and others (see [Wikipedia](#)). A common thread in many NLP tasks is that they require lots of data and they still involve human oversight, particularly related to training data, before the algorithmic models can be created. The good thing is that once an NLP



Most NLP tools also allow for a high degree of customization which is often inaccessible unless you are a developer. Nvest believes that each user has their own unique needs and style and we want to provide everyone a unique experience. Creating a sentiment analysis indicator is good but creating one personalized just for you is so much better. Should a day trader and a long term investor use the same sentiment analysis settings? By guiding users through the different settings available and making them easy to adjust, nvest enables each user to maximize their experience.

Token Discovery tools can be applied to a variety of data sources and can be easily accessed via the nvest API. You can use Token Discovery to analyze a white paper and use the results as an input in your ICO spreadsheet. For example, if there is a particular word or phrase that you are interested with, or conversely, want to avoid, you can easily create your own Token Discovery score to scan through hundreds of white papers, bitcoin talk announcements and other data sources and receive a nightly report of the results. You can use pre-built models like a grammar score, word complexity score or even a fraud test as a new data point to include in your ICO analysis. Or maybe you want to read a review in a different language or you don't understand all the technical jargon and crypto slang, you can use NLP combined with Deep Learning to make translations for you. Enhance your ICO spreadsheet with advanced data that is processed in seconds and always up to date with Token Discovery.

Opinionator

Detailed analysis performed by a specialist can often yield valuable information and insights that a non-specialist would never see. Nvest provides a platform for crypto experts to present their analysis and in return earn nvest token rewards. While many investors and traders publish their views and analysis it's hard to distinguish who the experts are and what their opinions are worth.

With Opinionator, nvest creates a market for both consumers and publishers of research. It allows anyone to publish their analysis with a variety of settings (public/private) and simplifies payments.

Using nvest tokens as rewards, Opinionator is ideal for new research analysts and provides them reach to the entire nvest community of users. If a given research analyst is able to provide a different angle of insight to what is generally available (ie most of the research on topic is related to technical analysis and then a cryptographer offers a totally different view) then their input should be highly valued and incentivized. Given that higher quality research should demand higher prices, consumers can also view how many nvest tokens a user has earned as an extra input when searching for research, similar to searching for high gross blog posts on Steemit.

Portfolio-Rizer

Successful investing often involves managing a portfolio of investments and for traders managing multiple positions at the same time. Porfoliorizer gives you the tools, specifically tailored to crypto markets so that you can analyze your entire portfolio. You can view attribution reports to show you where you made and lost money, monitor where your portfolio volatility is coming from, see how correlated your holdings are, create stress tests, goal settings and more. Leveraging traditional financial portfolio theories and tools, nvest's Porfoliorizer tools will also be tailored to crypto markets, which has price volatility and skew unlike



traditional assets of stocks and bonds and is more akin venture capital investments. This means that existing portfolio management tools built for the stock market may need to be modified in certain instances. Nvest expert team will ensure any portfolio tools released will be theoretically and practically adapted to crypto since most portfolio management theories and applications require a strong mathematic knowledge alongside practical understanding of how markets work.

Crypto portfolio analytics are often neglected or difficult to use but with nvest we make it easy and intuitive, allowing you to analyze your entire portfolio and provide you a richer set of insights that you could get from just analyzing an individual crypto on its own. As crypto markets mature, many crypto investors will realize that managing their portfolio will be just as important as managing the next trade.