

# Quant Epoch

Algorithmic Trading Technology

Contact: [Sergey Malchevskiy](#)

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# ABOUT US

## **O1** EXPERIENCE

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We are computer and data scientists with a deep passion for algorithmic trading. Our track record includes successful delivery of machine learning projects and customized financial solutions for the trading and investing industries.

## **O2** RESEARCH

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We conducted extensive internal research in various aspects of algorithmic trading. The public outcomes are listed below:

- **Unsupervised Learning to Market Behavior Forecasting**
- **Pairs Trading with Cryptocurrencies**
- **Application of Gradient Boosting in Order Book Modeling**
- **Event-Based Portfolio Rebalance Approach**
- **Renko Brick Size Optimization**

# PROBLEM

Creating a **profitable, low-risk,** and long-term **stable** trading mechanism is an extremely challenging task in modern science and engineering.

## **O1** **Uncertainty and competitiveness**

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Patterns that are found can quickly disappear, and there is a chance of survivorship bias.

## **O2** **High failure rate**

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The probability of failure when creating a startup is 95%, and this metric is even worse in this industry due to technical and scientific complexity.



# PROBLEM

Creating a **profitable, low-risk,** and long-term **stable** trading mechanism is an extremely challenging task in modern science and engineering.

## 03 **Extremely expensive R&D**

This is due to the high salaries of qualified specialists, as well as data and computations costs. Additionally, creating a valid proof-of-concept often requires multiple repeats from start.

## 04 **It takes a long time**

It can take a few years before entering the MVP stage, provided that everything works out well.

# RESEARCH

A multi-layered optimization mechanism is used to ensemble a large number of low and medium correlated micro-strategies.

## **01** No Holy Grail

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There is no single trading strategy that performs well. Instead, **we rely on** the law of large numbers, statistics, and well-formed portfolios.

## **02** Regime-switching approach

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The system must **adapt to** market conditions, direction, volatility, and other factors.

## **03** Volatility-adjusted core pattern with high risk-reward asymmetry

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A pattern should have **a low number** of parameters to minimize the risk of overfitting, but a potential is high.

# RESEARCH

A regime-switching trading mechanism is used to ensemble a large number of low and medium correlated micro-strategies.

## **04** Customized score functions

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The concept of "performing well" is **versatile**.

## **05** Proprietary technological stack

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An **end-to-end pipeline** includes a fast computational backtesting framework that is similar to production software. The portfolio constructor can produce tens of different risk-reward profiles (hedge mode optional).



# RESEARCH

Key characteristics of the current state of technology listed below.

## **01** **Single pattern. More than 10,000 micro-strategies**

Strategies are activated **depending** on the current market state.

## **02** **Many micro-strategies. Single portfolio**

Our portfolio constructor combines a set of strategies to create a single portfolio with a **smooth and growing** equity curve. Additionally, we slice the capital into small portions for order execution.

## **03** **No position averaging. No sitting out losses**

Position averaging and sitting out losses are generally considered **bad practice** for long-term performance.

# BACKTESTING SIMULATION

We conducted a backtesting simulation over several years on hundreds of assets from Binance (spot market, USDT). Our framework can produce multiple portfolios depending on different **risk-reward profiles**. We prioritize achieving a **smooth equity curve** regardless of the type of profile used (no re-investing, no leverage).

## BULLISH MARKET

**70-100%**

CAGR

**10.5%**

Max Drawdown

**≈1100**

Trades  
per Month

**267 min.**

Avg. Trade  
Duration

## FLAT OR BEARISH MARKET

**30-50%**

CAGR

**9.2%**

Max Drawdown

**≈850**

Trades  
per Month

**263 min.**

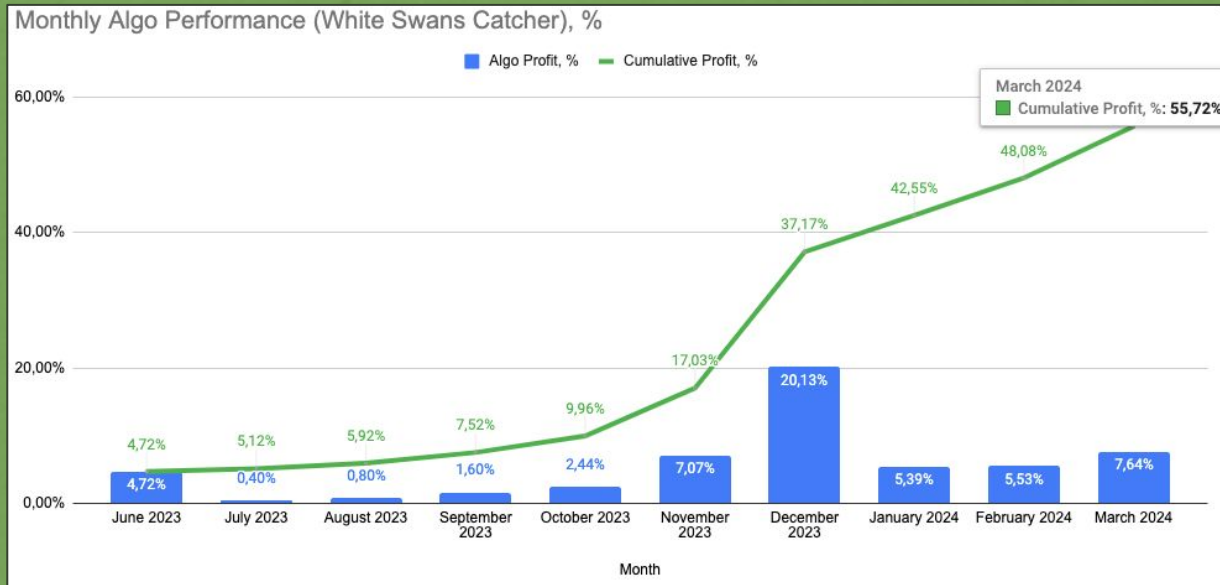
Avg. Trade  
Duration



# LIVE TRADING PERFORMANCE

The solution has been launched since June 2023.

It has a smooth curve, regardless of the market's movement direction.



**55.72%**  
Algo's Return

**5.9%**  
Max Drawdown

**4.33**  
Sharpe Ratio

# SOLUTION

The developed technology can be useful for various cases.

## **O1** Capital allocation for portfolio diversification

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Suitable for hedge funds, family offices, and proprietary trading firms.

## **O2** Advanced trading tools for clients

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Offer your clients quantitative trading tools with a favorable risk-reward ratio. Suitable for crypto trading platforms, digital assets management companies, crypto banks, end etc.

# SOLUTION

Ways to use the solution through white-labeling or acquisition technologies. It depends on your case.

## **O1** Technology acquisition

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Suitable when you need to use it with all rights in your proprietary infrastructure.

## **O2** Software as a service

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Suitable when you need to use the certain system modules (e.g., the trading signals system).



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