

Digital Asset Management

Volatility Trading Strategy



LIBERTYROAD
CAPITAL

August 2023

This presentation is for the use of the recipient only and may not be redistributed to any other person(s).



Firm Overview

Liberty Road Capital is a British Virgin Islands based Approved Investment Manager, under the Securities and Investment Business Act, 2010 (“SIBA”).



Founded in
2019



Focused on
Yield Generation

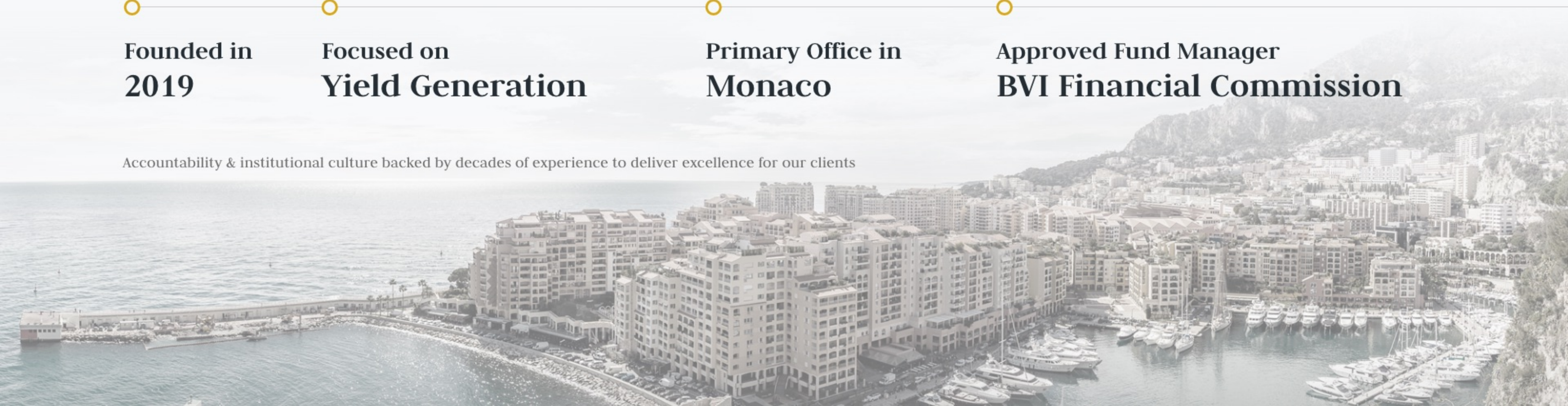


Primary Office in
Monaco



Approved Fund Manager
BVI Financial Commission

Accountability & institutional culture backed by decades of experience to deliver excellence for our clients





Investment Philosophy

Strategy:

- ✎ **Identify opportunities** on the volatility surface and exploit them
- ✎ Identify medium term **trend** based on fundamental blockchain and technical analysis
- ✎ Incorporate **AI and machine learning** tools
- ✎ Exploit **arbitrage** opportunities in key derivatives markets

Key Themes:

- ✎ World class **risk management** utilising the best risk management tools
- ✎ **24/7 portfolio management** via an exceptional portfolio management team
- ✎ State of the art **security and custody** solutions where digital assets remain under the ownership and control of the investor in cold wallets.



Volatility Trading Overview

- 🦁 Exchange arbitrage (Vol surface & futures, CME vs Deribit, etc)
- 🦁 Directional trading (Cash & volatility)
- 🦁 Relative value trading (duration & smile)
- 🦁 Efficient portfolio construction (trading Greeks)
- 🦁 Special situations (event lead)



Volatility Trading Lead Indicators

Forward looking lead indicators used to preempt directional moves:

- 🦁 Put/Call Ratio
- 🦁 Gamma/Risk Premium Ratio
- 🦁 Volatility Smile
- 🦁 Risk Reversal Prices
- 🦁 Gamma/Theta Ratio
- 🦁 ATM/Skew Ratio

$$d_1 = \frac{\ln \left[\frac{S_t}{X} \right] + \left(R_f + \frac{1}{2} \sigma^2 \right) T}{\sigma \sqrt{T}}$$

$$d_2 = d_1 - \sigma \sqrt{T}$$

$$N(d_1) = N \left(\frac{\ln \left[\frac{S_t}{X} \right] + \left(R_f + \frac{1}{2} \sigma^2 \right) T}{\sigma \sqrt{T}} \right)$$

$$N(d_2) = N(d_1 - \sigma \sqrt{T})$$

$$N'(d_1) = e^{\left[\frac{-(d_1)^2}{2} \right]} \frac{1}{\sqrt{2\pi}}$$

$N(\bullet)$ = the cumulative normal distribution function of (\bullet)

$\ln(\bullet)$ = the natural log of (\bullet)

C = Value of the Call option

P = Value of the Put option

S_t = Current value of the underlying asset (t = now)

X = Exercise price or Strike price

R_f = Risk free rate or return

T = Option life as percentage of year

σ = Standard deviation of the growth rate on the underlying asset

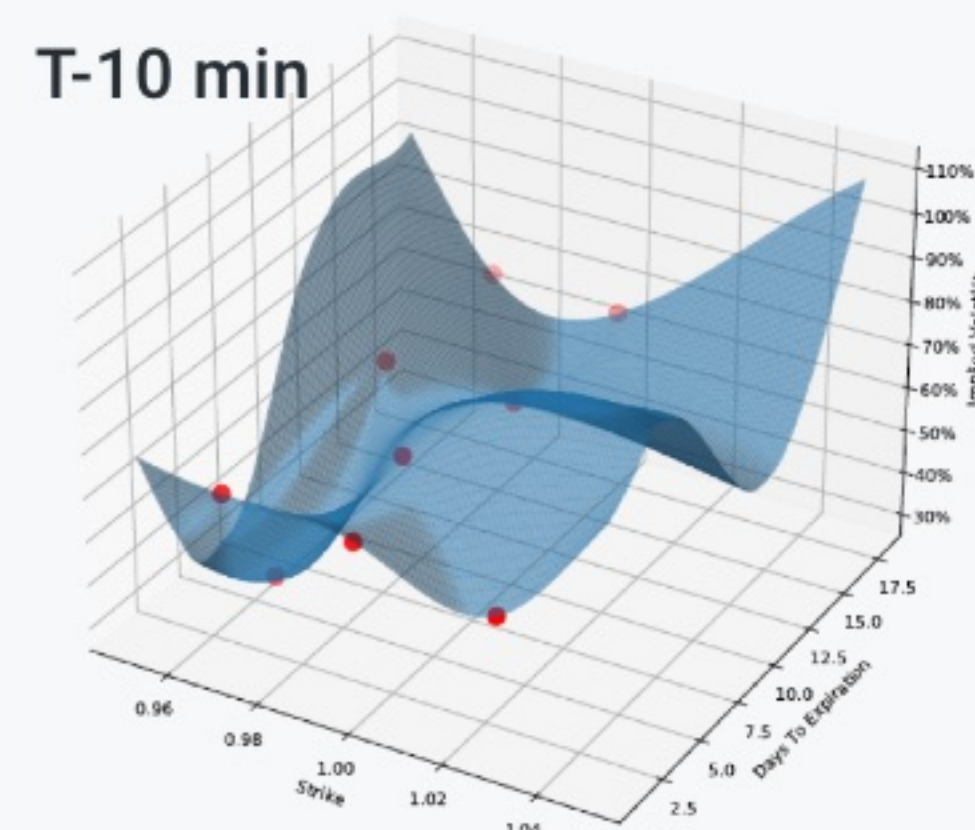
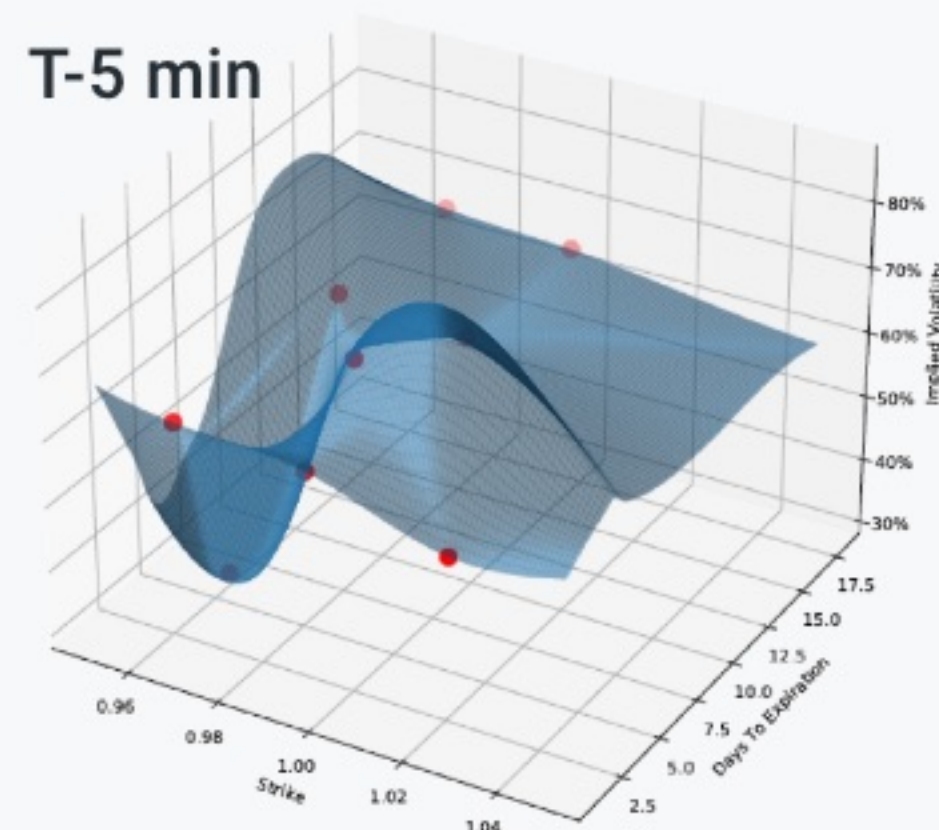
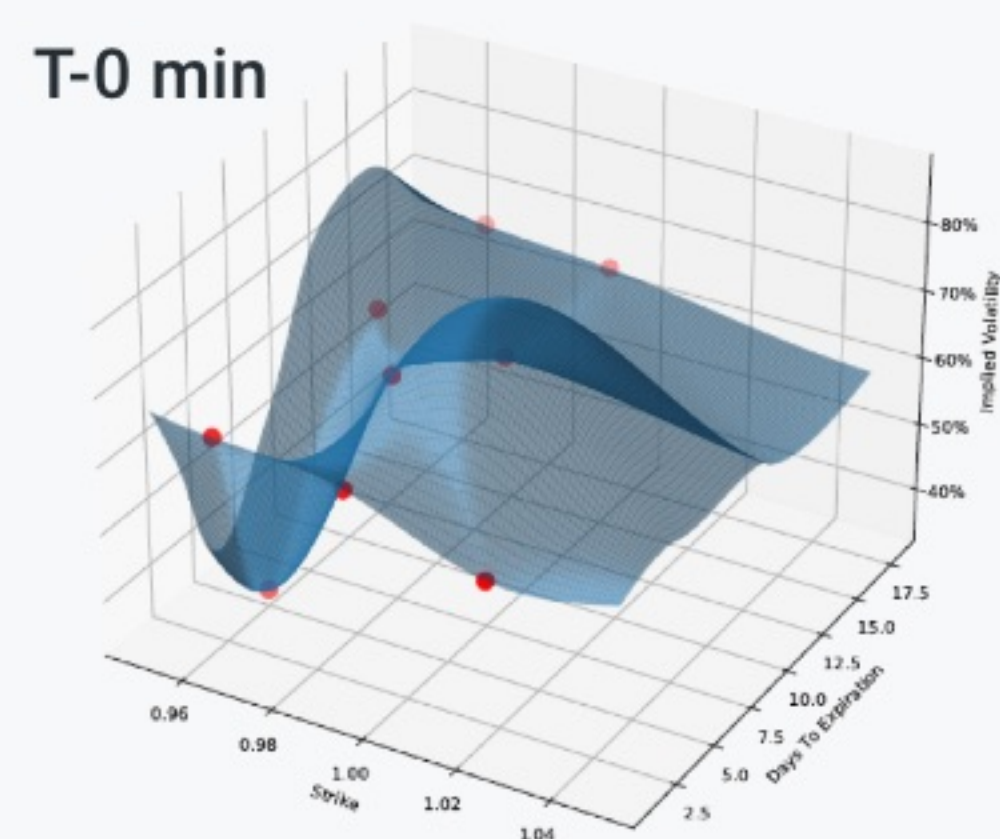
π = Pie value

$N(d_1)$ = the rate of change of the option price with respect to the price of the underlying asset

$N(d_2)$ = Probability of the option being "in the money"



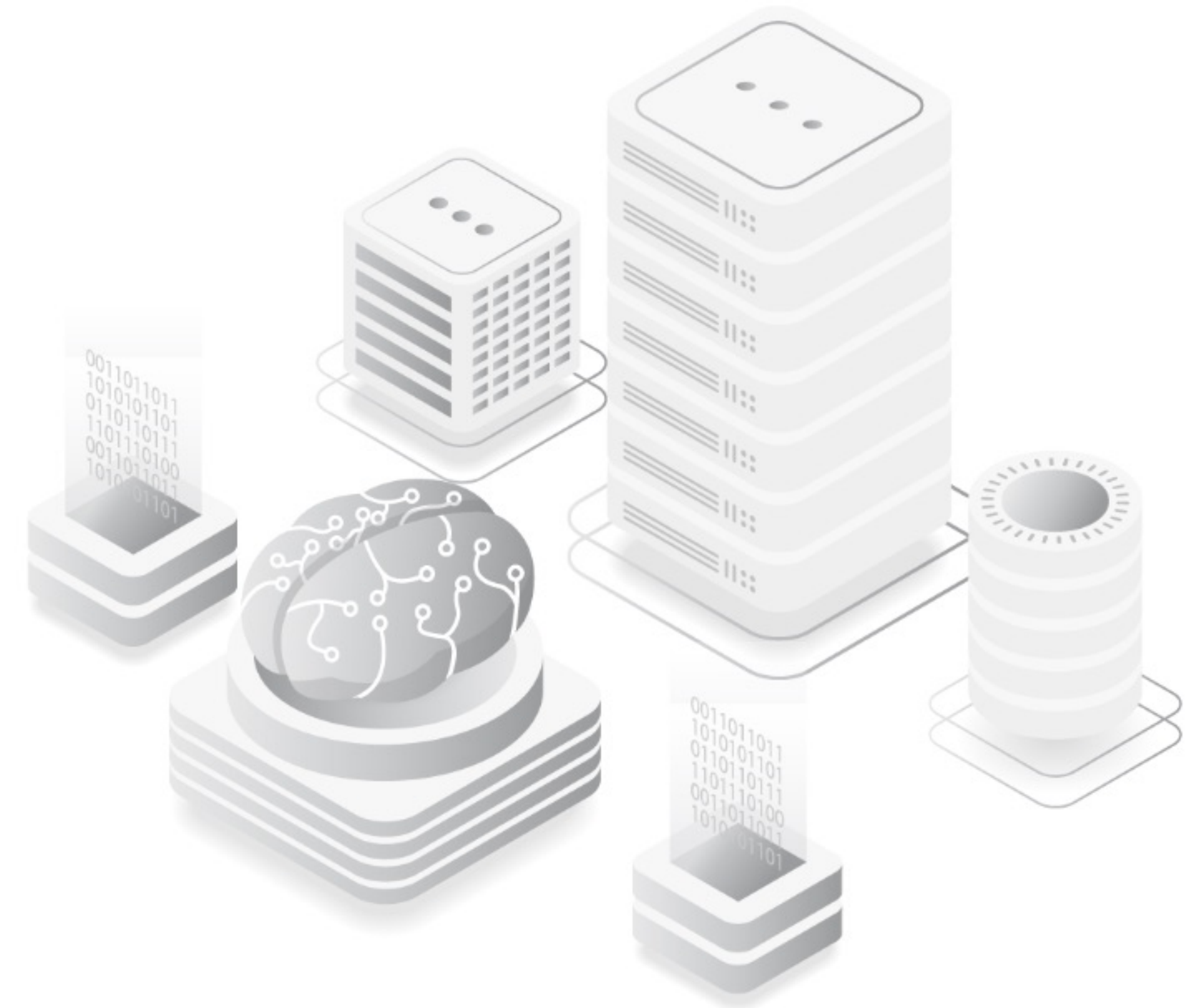
The Opportunity



- ✦ **Large inefficiencies** exist in digital asset derivatives markets
- ✦ Large risk **premiums** are available with **low risk**. **Large gamma** is available for **low risk premium**
- ✦ Volatility options surface offers **huge opportunities** due to market inefficiencies
- ✦ Latest technology **eliminates the credit risk** of having assets held by exchanges

Machine Learning Algorithm

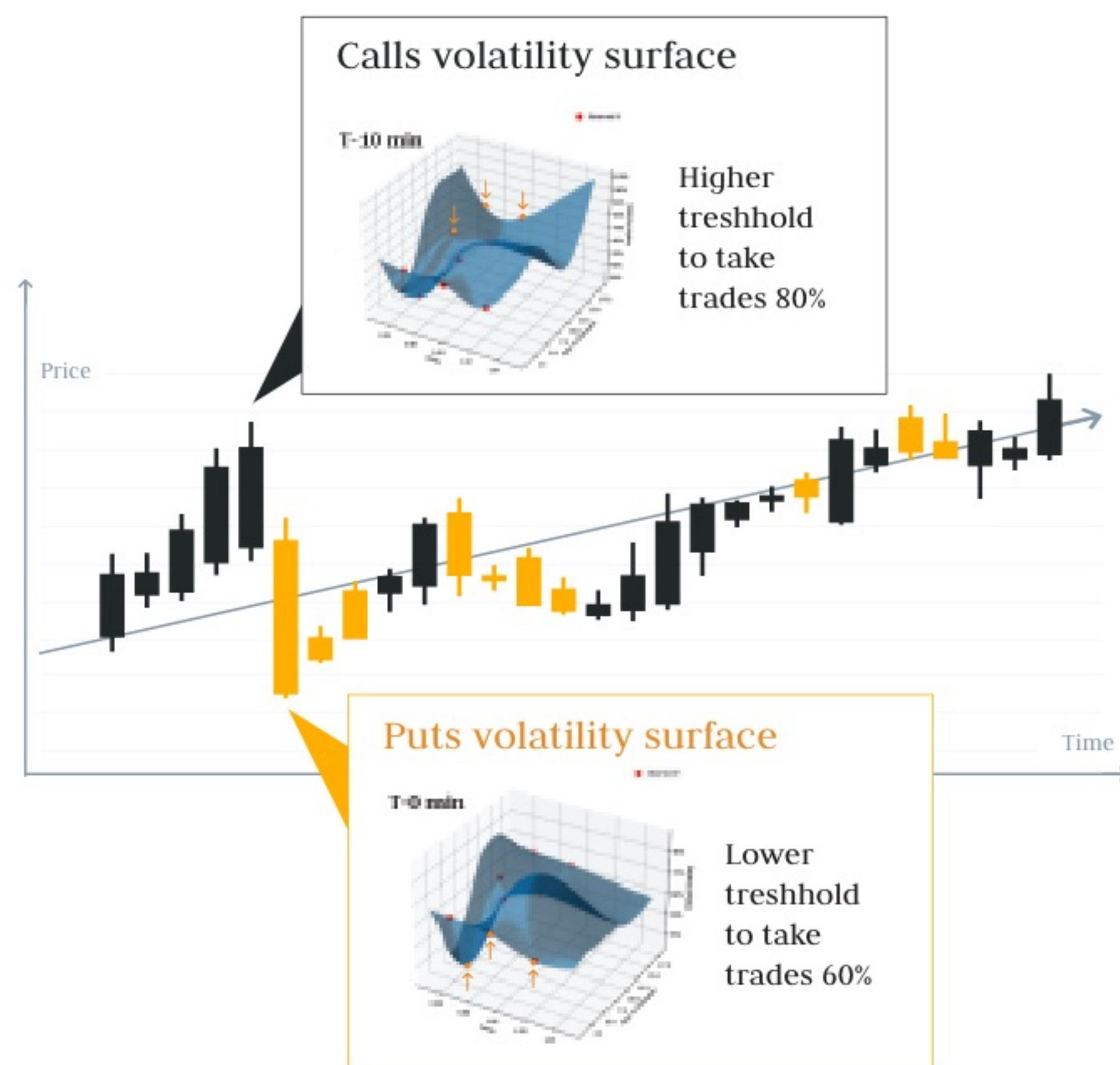
- Algorithm **identifies market opportunities** in real time and assesses probability of trade success
- Filters** include Delta, Theta, Gamma, Vega, Duration, Realised Volatility, Implied Volatility, Moving Averages and RSI
- Machine learning algorithm calculates a **trade confidence of success** based on historical parameters, against current market parameters
- Outlined parameters likely to result in **profitable trades**. 70% likely success rate is minimum threshold
- Experienced Portfolio Manager oversees and executes the trades
Experienced Portfolio Manager oversees and executes the trades



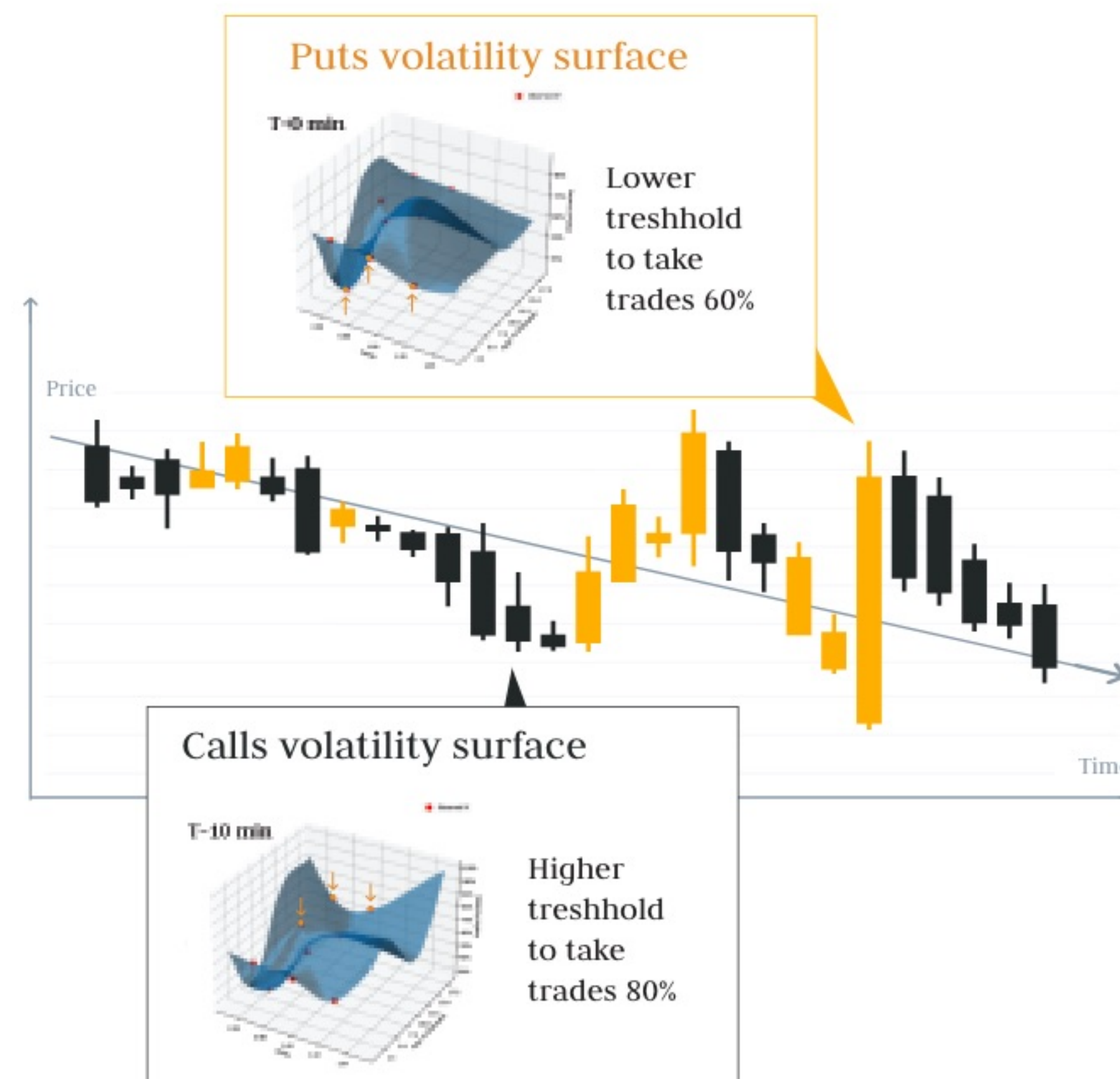


Trend Analysis Impacting Machine Learning

Bullish Trend



Bearish Trend

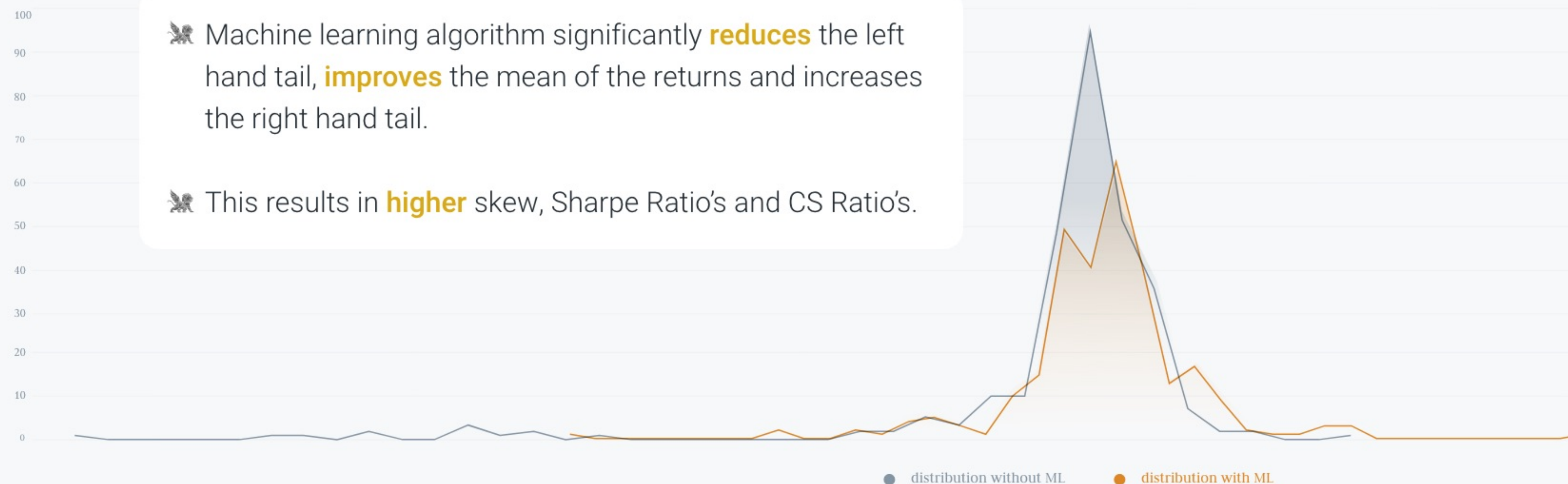




Impact of machine learning

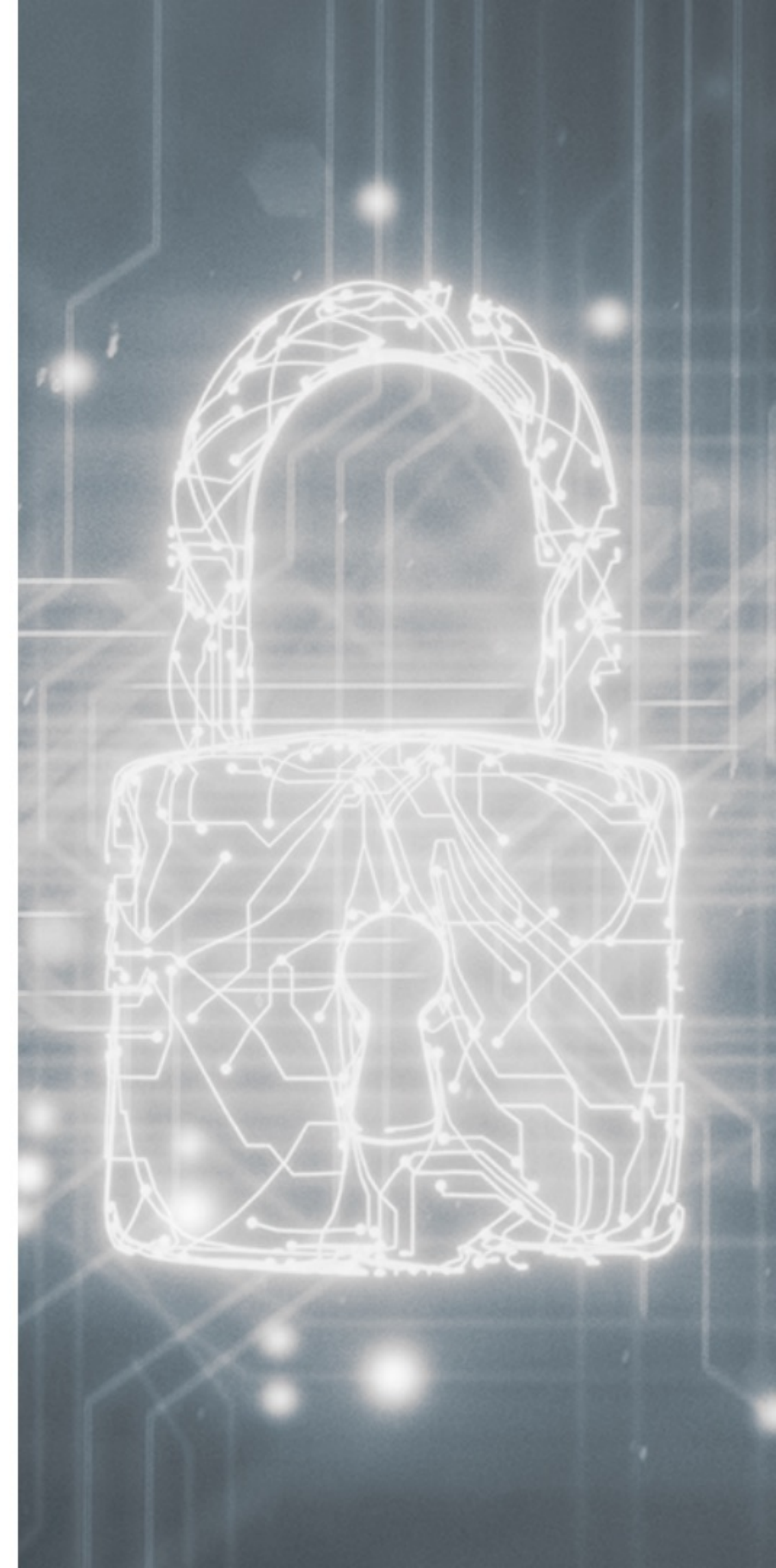
Machine learning algorithm significantly **reduces** the left hand tail, **improves** the mean of the returns and increases the right hand tail.

This results in **higher** skew, Sharpe Ratio's and CS Ratio's.



Secure Digital Infrastructure

- 🦁 All assets are retained by investor in a dedicated secure offline cold wallet
- 🦁 No movement of assets takes place
- 🦁 Investment Manager trades the portfolio under an Investment Management Agreement, but is not able to move assets from wallet
- 🦁 Settlement takes place in real time, and a hold or credit is placed against cold wallet which is periodically settled by client
- 🦁 100% secure. Zero Credit risk





Process Overview



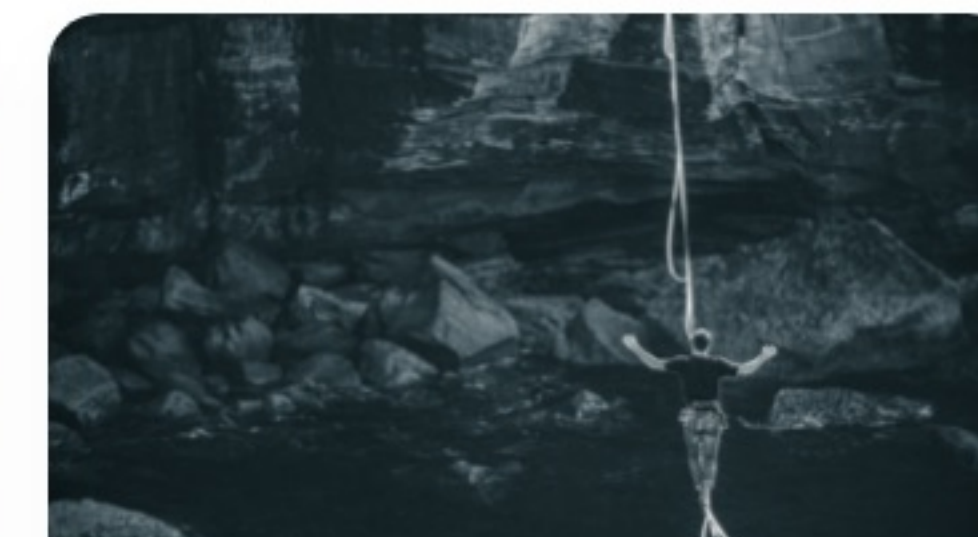
Institutional Infrastructure

Secure. Frictionless. Ownership remains with Investor.



Investment Opportunity

Live opportunities identified by AI. Volatility Surface. Arbitrage via Product, Curve, Exchange.



Risk Management Procedures

Embedded in the investment process. Extreme Value Theory, Overseen by AI.

Client Funds

- ✦ Ownership retained
- ✦ Real-time monitoring
- ✦ Secure wallets & cold storage
- ✦ No movement of assets

Investment

- ✦ Algorithmic Arbitrage
- ✦ Live Volatility Surface
- ✦ Artificial Intelligence

Risk Management

- ✦ Extreme Value Theory
- ✦ EVAR
- ✦ Live constantly monitored Greek limits

Portfolio Management

- ✦ World Class PM team
- ✦ 24/7 management

Operations

- ✦ Monthly liquidity
- ✦ Daily Portfolio Visibility



Risk Management

Investment Management Process

Liquidity Risk

- ✦ Real-time monitoring of liquidity
- ✦ Strategic long bias positions

Counterparty Risk

- ✦ Cold storage
- ✦ Sophisticated MPC wallet
- ✦ 2 of 3 signature control
- ✦ 2 keys retained by coin owner

Event Risk

- ✦ Tactical hedging of tail risk events
- ✦ Strict risk limits & internal protocols

Technical Default Risk

- ✦ Ongoing engineering analysis of digital assets
- ✦ Real-time onchain data feeds and analytics

Best practices

- ✦ No single person, server, vault location or device failure can compromise our operations
- ✦ MPC wallet authorization for fund access
- ✦ Exchange partners rigorously selected based on data security practices & management
- ✦ Short term positions managed with strictly imposed risk limits
- ✦ Mitigating exposure via e-wallets, exchange accounts & other counterparty risks
- ✦ Overseen by independent risk management committee





Volatility Trading Strategy - BTC Performance

Summary Statistics

(Period: April 2019 – August 2023)

Annualised Return (since inception)	88.3%	Annualised Volatility (Standard Deviation)	50.7%
Sharpe Ratio	1.71	Omega Score Annualised	10.26%
Largest Drawn Down	-30.07%	Length (Months)	4
Skewness	1.5	Kurtosis	3.7
CS Character	4.94	CS Ratio	8.47
Up Months	31	Percentage	57.41%
6 Month Rolling Return	28.52%	3 Months Rolling Return	1.11%

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD
2019			-0.12	16.77	7.74	13.92	-7.41	-9.72	-12.33	2.64	5.34	9.24	26.07
2020	11.28	-0.42	44.64	21.48	-3.18	-7.08	19.17	7.08	1.14	38.88	30.81	50.40	214.20
2021	22.32	15.24	2.25	3.57	5.28	-4.98	-0.36	7.71	-3.38	12.32	-3.69	13.53	69.81
2022	1.68	2.59	23.82	-13.07	-2.68	34.98	-8.29	-9.98	-3.62	-8.18	1.49	-7.45	11.29
2023	-7.09	-1.47	-4.71	27.63	4.49	9.39	-6.47	-1.81					19.96

Quantitative trading returns are back tested returns. Document outlining returns available on request.
Gross returns for LRC reference accounts. Calculated as simple interest rate. MTD.

Accountability & institutional culture backed by decades of experience to deliver excellence for our clients



Volatility Trading Strategy - ETH Performance

Summary Statistics

(Period: April 2019 – August 2023)

Annualised Return (since inception)	94.0%	Annualised Volatility (Standard Deviation)	60.2%
Sharpe Ratio	1.52	Omega Score Annualised	11.63%
Largest Drawn Down	-49.35%	Length (Months)	4
Skewness	-0.9	Kurtosis	7.0
CS Character	5.18	CS Ratio	7.89
Up Months	32	Percentage	62.26%
6 Month Rolling Return	34.60%	3 Months Rolling Return	3.19%

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD
2019				4.20	41.16	9.15	13.05	-13.08	7.44	-7.44	-1.74	-7.38	45.36
2020	32.49	45.30	-0.54	-15.84	-15.57	-1.23	30.00	0.42	6.42	8.28	47.13	19.02	155.88
2021	16.11	7.68	9.24	17.07	37.14	3.90	4.50	39.27	-3.06	12.27	-5.13	3.45	142.44
2022	-3.75	16.62	5.31	-2.64	5.83	17.05	5.75	-2.09	-1.64	-2.43	-43.19	35.49	0.30
2023	-10.99	-17.80	22.99	5.26	3.16	-6.40	-4.53	14.12					5.81

Quantitative trading returns are back tested returns. Document outlining returns available on request.
Gross returns for LRC reference accounts. Calculated as simple interest rate. MTD.

Accountability & institutional culture backed by decades of experience to deliver excellence for our clients

Team



Russell Thompson

30+ years Finance & Trading. Ran Pan-Asia Trading for AIG, and ran desks for HSBC Hong Kong, and Midland Montagu.

Founder/ Owner The Cambridge Strategy, USD \$3.5B AUM in emerging markets strategies.

Firm attained top 1% of returns for Investment Management firms for the past 10 years.

Tom Bowles

Financial Quantitative Expert, with 25 years experience in top-tier hedge funds, asset management and family offices in London, New York and Monaco with AUM from \$1bn to \$30bn.

Specialised in quantitative and machine learning, with a PhD from Oxford in mathematical forecasting.

Successful entrepreneur track record, building 3 MedTech companies with strong +\$1bn exits.

Anna Dinescu

12 years Project Management in top tier multi-nationals, fin-tech startups and investment companies.

Specialised in Business development and Fund-Raising for VCs/Hedge Funds/FO focused on fin-tech, blockchain, digital assets and alternative asset investment portfolios.

Dan Hanson

25 years of FX and PM volatility trading experience.

Ran FX Option desks at Merrill Lynch, Standard Chartered and Citibank, specialising in Emerging Markets characterised by asymmetric distributions, pegged ccys, illiquid markets and Frontier markets.



LIBERTYROAD

CAPITAL

Contact Information

Europe

Anna Dinescu

Founding Partner

t: +336 78 63 10 62

e: anna@libertyroadcapital.com

North America

Jonathan Morris

Partner

t: +1 (212) 991 8332

e: jonathan@libertyroadcapital.com