Digital Asset Management

Negative Gamma Strategy

LibertyRoad Capital

August 2023

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:

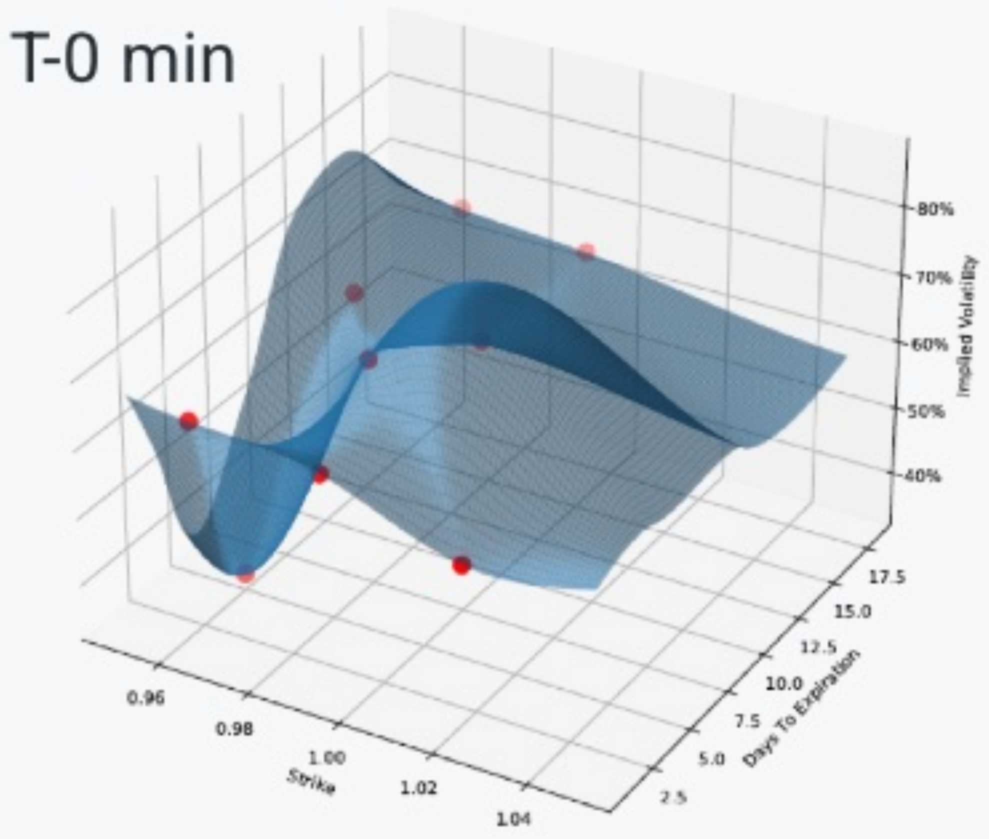
- **Identify opportunities** on the volatility surface and exploit them
- Identify medium term **trend** based on fundamental blockchain and technical analysis
- Incorporate **AI and machine learning** tools
- Exploit **arbitrage** opportunities in key derivatives markets

Key Themes:

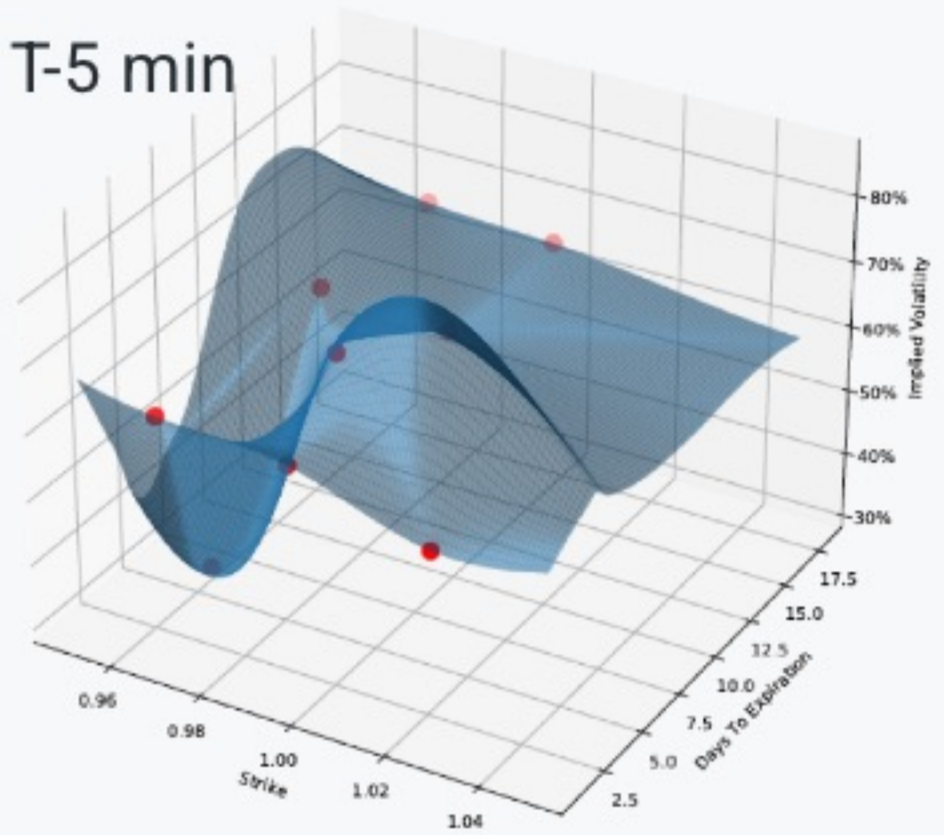
- World class **risk management** utilising the best risk management tools
- **24/7 portfolio management** via an exceptional portfolio management team
- State of the art **security and custody** solutions where digital assets remain under the ownership and control of the investor in cold wallets

The Opportunity

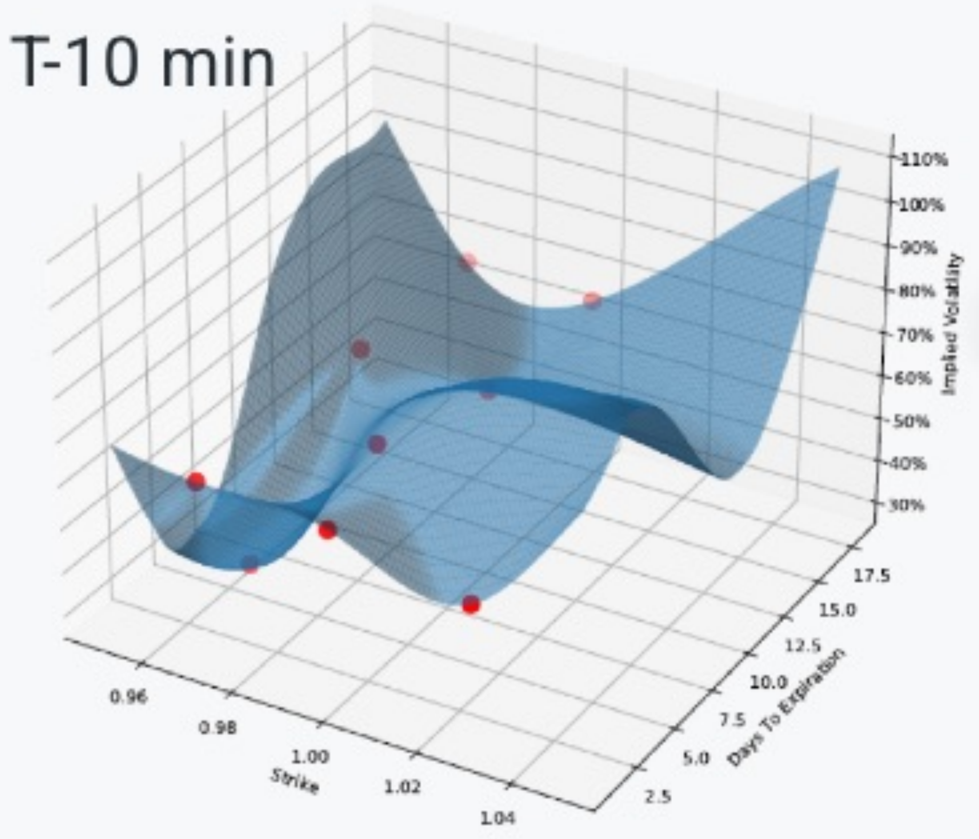
T-0 min



T-5 min



T-10 min



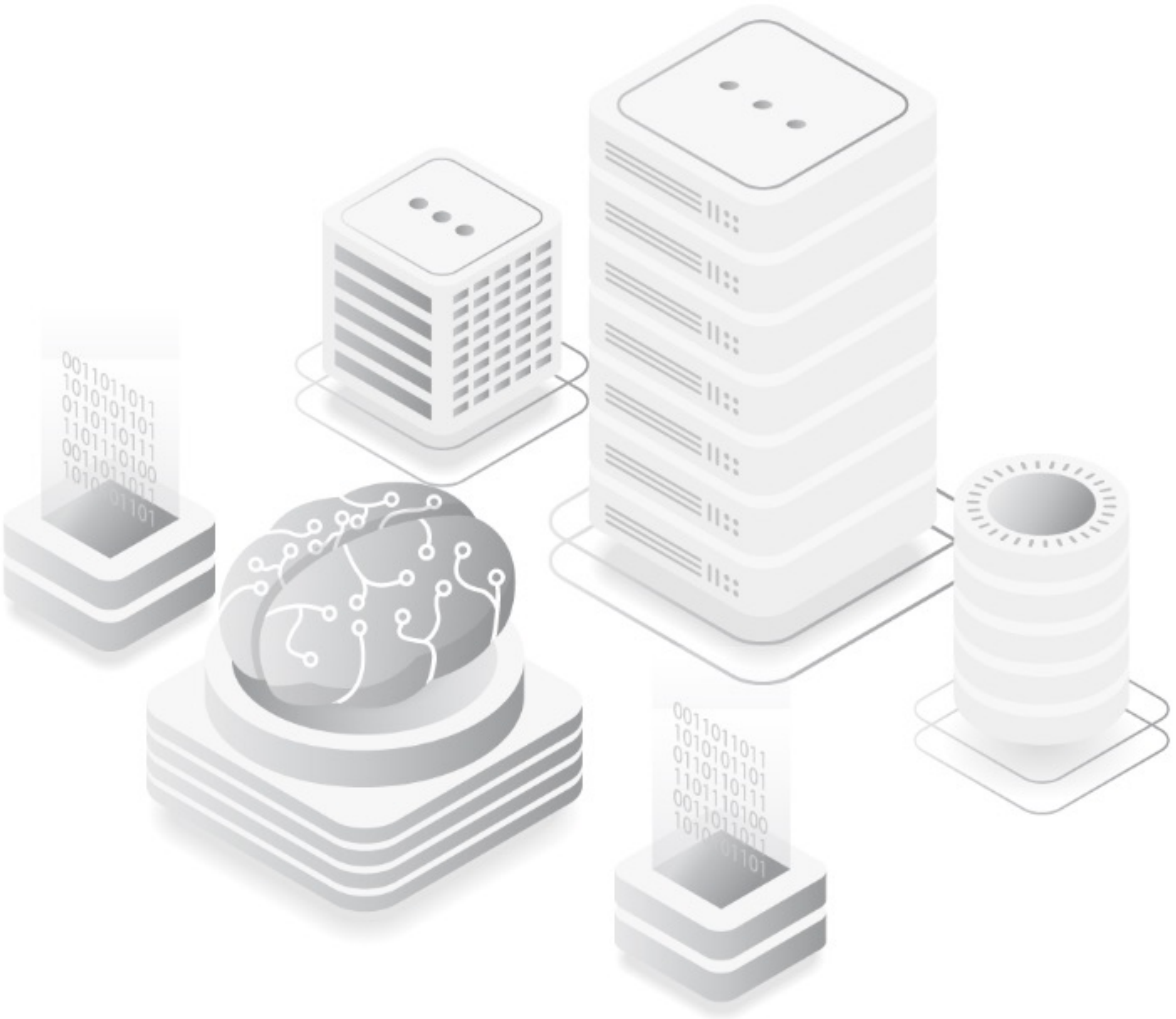
- Large inefficiencies exist in digital asset derivatives markets
- Large risk premiums are available with low risk
- Volatility options surface offers huge opportunities due to market inefficiencies
- Recent advancements in technology eliminate the credit risk of having assets held by exchanges

Trend Identification

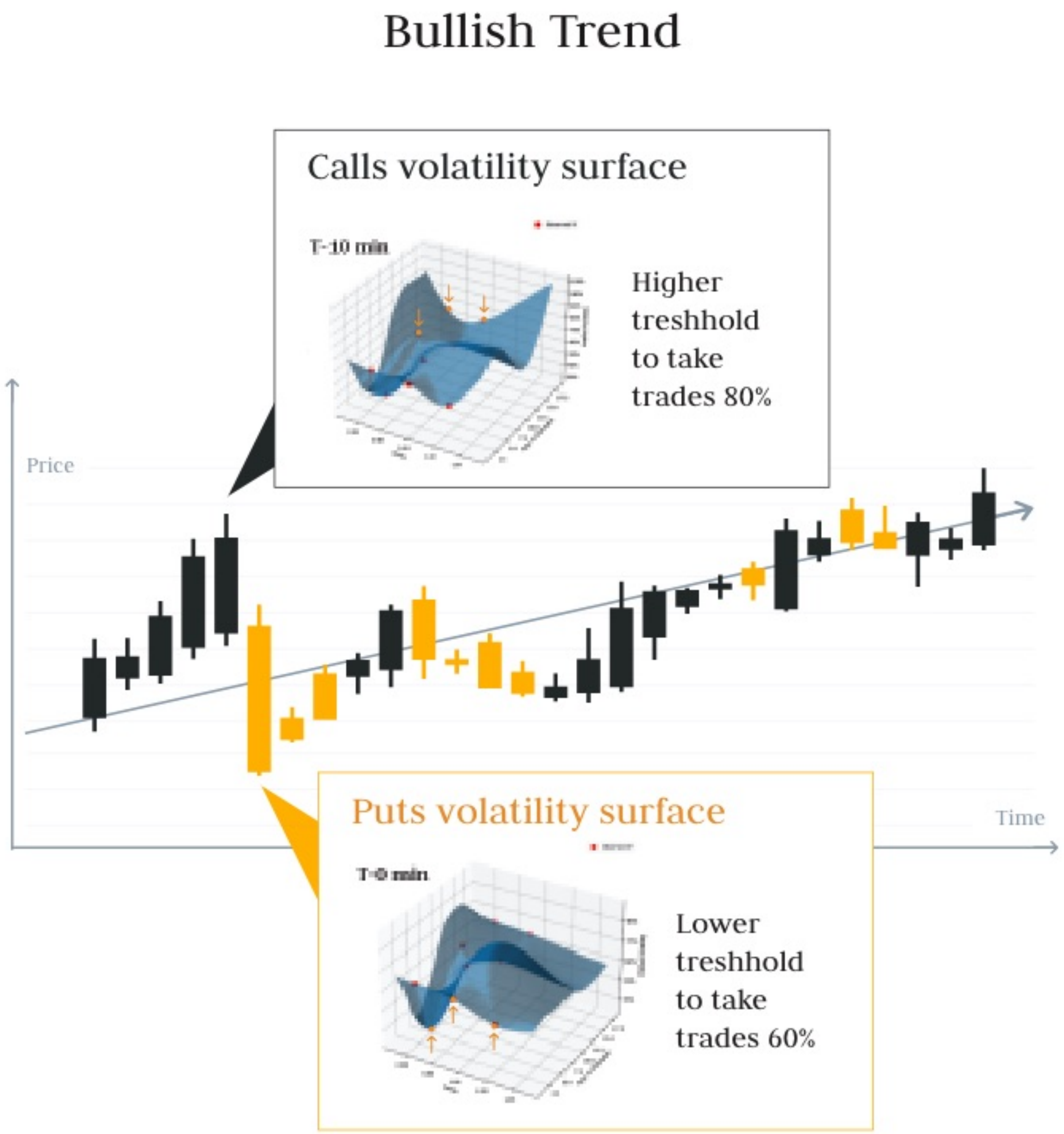
- Fundamental blockchain analysis is used to identify medium term trend
- Factors examined include exchange in/out flows, weak and strong hands, bitcoin liquidity ratio, difficulty of mining, miner flows
- Technical analysis is used in combination to reinforce blockchain analysis. Factors include RSI, Moving Averages and Fibonacci levels
- Trend is influential in determining Machine Learning probability success rate threshold. Threshold is lower for calls in Bull Markets and Puts in Bear Markets

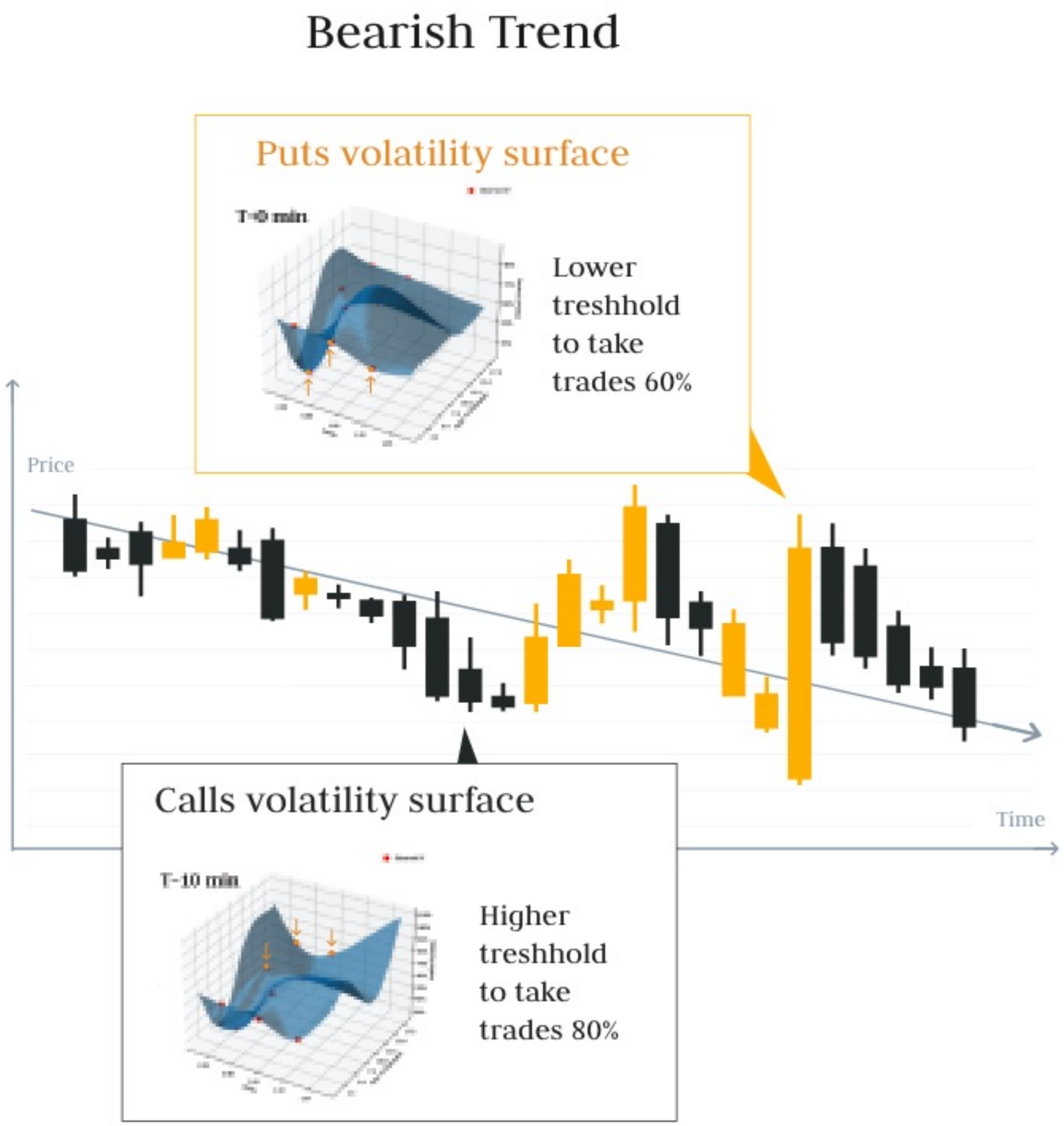
Machine Learning Algorithm

- 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
- Trades taken based on outlier parameters likely to result in profitable trades. Threshold of 70% likely success rate is minimum threshold
- Experienced Portfolio Manager oversees and executes the trades



Trend Analysis Impacting Machine Learning

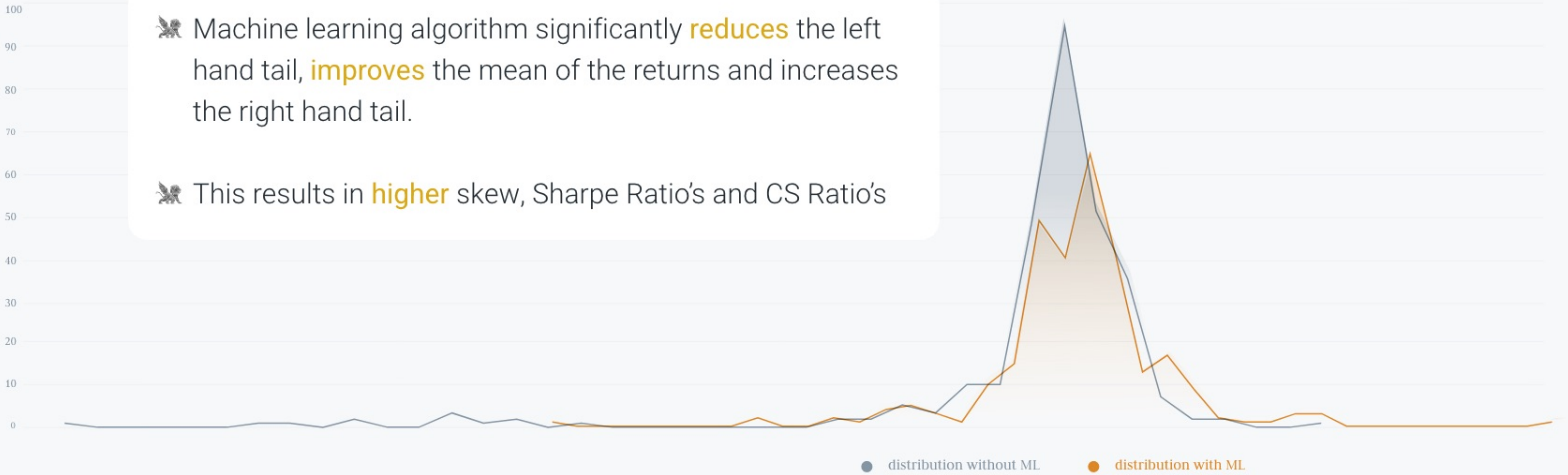




Impact of machine learning

- 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



LibertyRoad Capital

Exchange Arbitrage

- Algorithm identifies **risk free opportunities** in real time due to market inefficiencies across exchanges
- **Offsetting trades** are executed simultaneously to lock in profits.

QUANTITY BTC	PRICE USD	EXCHANGE
[illegible]	[illegible]	[illegible]
3.10000000	9603.68	gemini
0.51890000	9603.37	market1
1.75880723	9603.30	gemini
0.25000000	9603.19	market1
3.00000000	9603.09	market1
2.00402175	9602.55	market1
0.00400000	9602.20	market1
0.15600000	9601.87	market1
5.90000000	9601.77	market1
2.00000000	9601.44	market1
2.50000000	9601.43	market1
16.52595233	9601.14	market1
0.16680000	9600.60	market1
0.08000000	9598.00	market1
	9.80000 USD ARBITRAGE	
1.91304361	9607.80	kraken
0.14200000	9607.70	kraken
0.01000000	9607.60	kraken
1.00000000	9605.00	kraken
0.43190000	9604.40	kraken

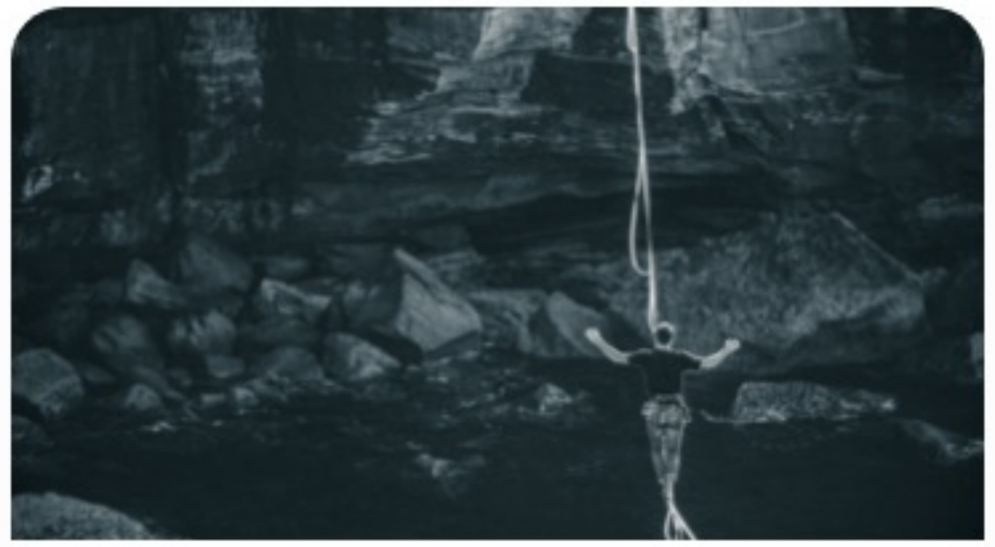
Process Overview

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

Secure Digital Infrastructure

All assets are retained by investor in a dedicated secure offline cold wallet.

Assets can be traded against while offline in cold storage.

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.

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

Negative Gamma Strategy - BTC Performance

Summary Statistics

(Period: April 2019 – August 2023)

Annualised Return (since inception)	74.1%	Annualised Volatility (Standard Deviation)	40.0%
Sharpe Ratio	1.80	Omega Score Annualised	14.30%
Largest Drawn Down	-10.65	Length (Months)	2
Skewness	1.4	Kurtosis	2.2
CS Character	2.80	CS Ratio	5.04
Up Months	37	Percentage	68%
6 Month Rolling Return	-6.31%	3 Months Rolling Return	-2.39%

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD
2019				-0.50	-1.68	1.36	20.78	8.80	2.38	4.22	-7.20	6.00	**22.16**
2020	22.52	4.92	-6.36	42.24	4.58	6.34	6.72	8.62	-0.50	9.24	15.90	33.82	**148.04**
2021	-7.72	20.70	5.80	15.68	4.08	15.98	-6.06	-6.22	10.76	38.93	24.54	8.46	**124.93**
2022	0.80	3.50	0.21	2.27	-2.37	4.96	1.11	-7.85	0.50	3.39	-1.20	2.86	**8.28**
2023	-2.70	0.00	-2.84	-7.81	6.72	3.79	7.29	-13.47					**-9.01**

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

Negative Gamma Strategy - ETH Performance

Summary Statistics

(Period: April 2019 – August 2023)

Annualised Return (since inception)	37.2%	Annualised Volatility (Standard Deviation)	45.7%
Sharpe Ratio	0.77	Omega Score Annualised	16.12%
Largest Drawn Down	-46.67%	Length (Months)	4
Skewness	-0.9	Kurtosis	1.6
CS Character	2.83	CS Ratio	2.18
Up Months	37	Percentage	71.15%
6 Month Rolling Return	-64.84%	3 Months Rolling Return	-27.85%

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD
2019				-0.49	3.12	2.54	10.12	14.28	5.50	2.49	1.72	0.26	**39.54**
2020	-0.50	8.91	-15.27	30.84	13.89	5.16	5.47	17.27	8.08	-0.06	11.94	20.76	**106.49**
2021	8.68	26.86	7.95	14.49	11.81	23.80	17.71	-2.17	13.78	7.22	-1.76	-16.30	**112.07**
2022	1.15	0.03	-27.67	7.65	17.57	7.65	3.02	3.75	0.30	-2.45	-32.79	17.05	**-4.74**
2023	-3.80	5.24	-34.15	-1.35	-1.49	-9.68	2.08	-20.25					**-63.40**

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Gross returns for LRC reference accounts. Calculated as simple interest rate.

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.

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

LIBERTYROAD
CAPITAL

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