Feinkonzept

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1 What is Bitcoin

2 Auction principle

Explain how the price of Bitcoin is determined

3 Exploited

Edge

Is it even possible to make money? Because if there is a system wouldn't everbody be using it making the edge unusable or exploited?

4 Data sources

Detail your data sources, signal processing, order management, etc.

4.1 Formulas

Below I explain the mathematical formulas for the indicators I'm planning to use for an EMA with a 55-period window and for computing price deltas of 1%, 2.5%, and 5%.

4.1.1 Exponential Moving Average (55)

An EMA_{55} at time t (denoted as $\mathrm{EMA}_{55}(t)$) can be computed by:

$$\mathrm{EMA}_{55}(t) = \alpha \cdot \mathrm{Price}(t) \; + \; \big(1-\alpha\big) \cdot \mathrm{EMA}_{55}(t-1), \tag{1}$$

where

$$\alpha = \frac{2}{55+1} = \frac{2}{56}. \tag{2}$$

4.2 Orderbook Deltas

We define $\Delta_{1\%}$, $\Delta_{2.5\%}$, and $\Delta_{5\%}$ as follows:

$$\Delta_{1\%}(t) = 0.01 \cdot P(t), \tag{3}$$
$$\Delta_{2.5\%}(t) = 0.025 \cdot P(t), \tag{4}$$
$$\Delta_{5\%}(t) = 0.05 \cdot P(t). \tag{5}$$

Here, $P(t)$ denotes the current market price (for example, the midpoint between the best bid and ask, or the last traded price). Each Δ indicates how far away from $P(t)$ we measure or place an order in the orderbook.

For instance, you could place an order on the ask side at $P(t) + \Delta_{1\%}(t)$ or on the bid side at $P(t) - \Delta_{1\%}(t)$ for a 1% offset from the current price.

5 Strategies

5.1 Bias

5.2 Risk Managment

5.3 Finding fitting strategy

5.3.1 EMA + Orderbook delta

5.3.2 Bias + trailing SL

6 Singal processing

7 Implementation and Operation

Discuss the programming tools, security measures, and other implementation details.

8 Monitoring