

Evolution of limit order book dynamics: One machine learning high frequency trading model

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- Our main goal is to use boosting machine learning method to predict the limit order book price **cross over** opportunity.
- Use the high frequency data to predict relatively **long time** future price changing trend.
- Features selection: choose what kind of data as our independent variables(**choose x_i s**).
- Compare the accuracy rate and calculation time among different machine learning methods, and show that the boosting method can improve the **predicting performance** to some extent.

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High frequency trading

High frequency trading is a specialized case of algorithmic trading involving the **frequent turnover** of many **small positions** of a security.

Positive impact

- Increased liquidity
- Narrowing spreads
- Improve market efficiency
- Increase fees for Exchanges

Negative impact

- Impact on the institutional investors.
- Increase volatility
- Disadvantages to the small Investors(**asymmetric information**)