

MAFS6010U Deep Learning Trading Course Project Instruction

About us

Professor

- YAO Yuan

Teaching Assistants:

- De Lavergne Cyril
- Huang Yifei

Wechat: cdldl24



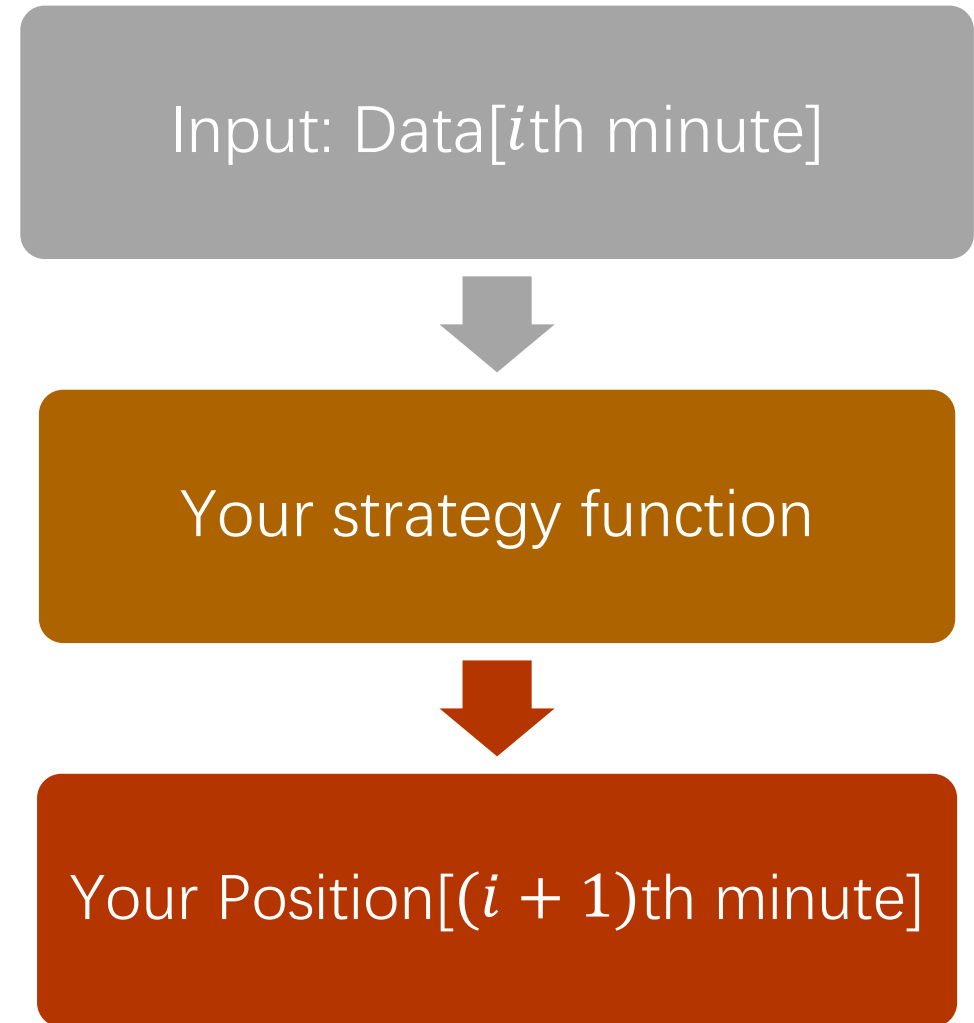
About Data

- You are provided with historical minute-level OHLCV data of 4 major crypto currencies – BTC (比特币), BCH (比特币现金), LTC (莱特币) and ETH (以太坊).
- Data download address:

<https://drive.google.com/drive/folders/1jBqUZgipKoATfdIlbDCTqY5nb7m3ewlw>

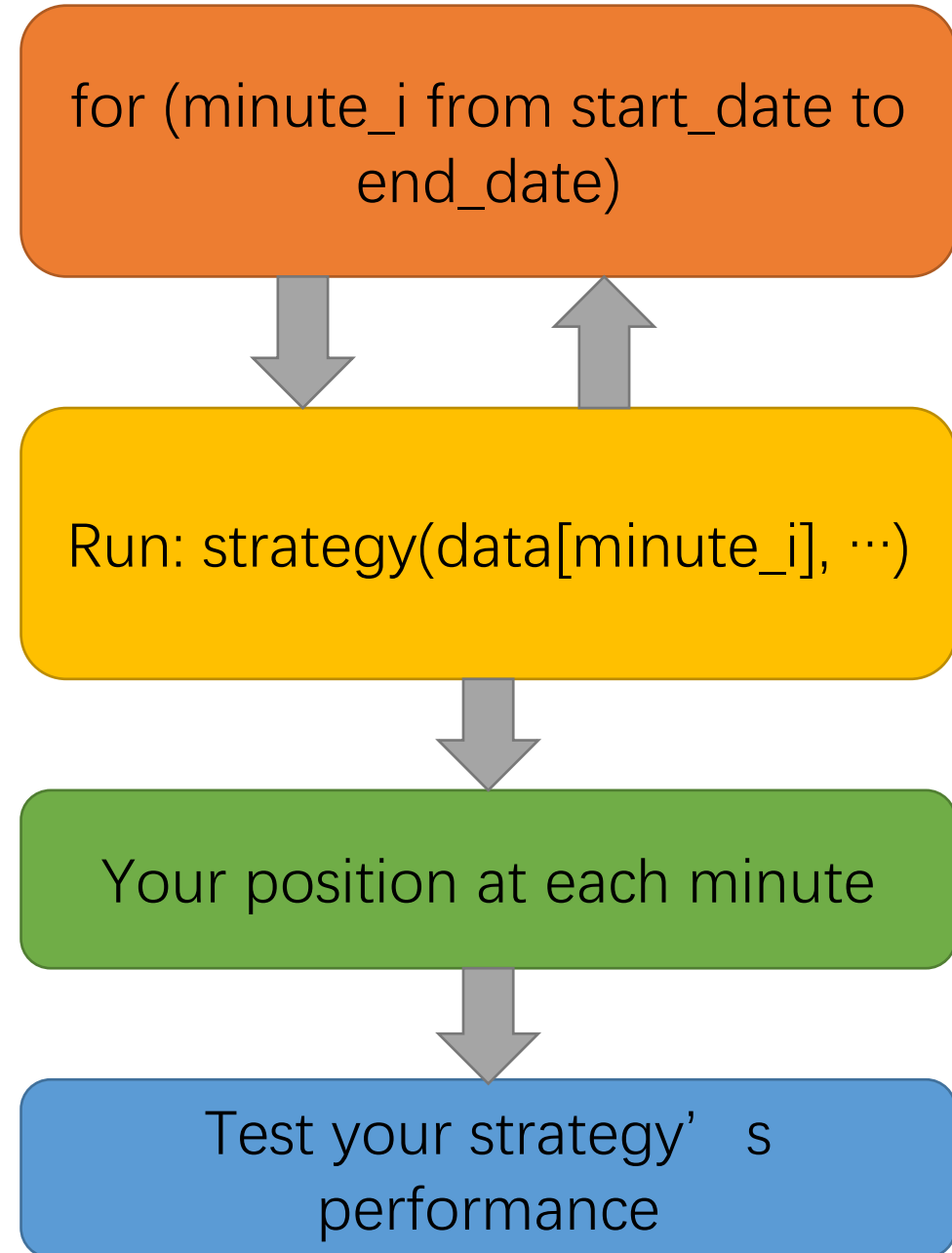
Your job

- Write a high frequency or minute-level trading strategy function. Given data from **one minute**, it can output **its desired position next minute**, which implies how will you trade (long/short) assets next minute in R or Python 3.



Your job

- Submit your strategy **weekly** (deadline is usually Friday mid-night) to cdldl@connect.ust.hk. TA will test your strategy's performance using **data from next week**.
- The testing program, several demos and this instruction are also provided to you.



Trading Guideline

- The initial cash is \$ 100,000 (US Dollars)
- At one minute, your strategy should make decision about longing / shorting different crypto currencies next minute by giving your **desired position next minute**.
- **The transaction rate is 0.0005 for each trading action**. For example, suppose you strategy will short 5 BTC next minute, and the average price of BTC is \$9000 next minute, then your transaction cost will be $9000 \times 5 \times 0.0005 = \2.5 . Suppose after 1 hour, the average price turns to 9500 and you want to close your position, then you need to pay another $9500 \times 5 \times 0.0005 = \$ 23.75$ as transaction cost (TA will take care of transaction costs)

Performance evaluation

The Formula for Sharpe Ratio Is

$$\text{Sharpe Ratio} = \frac{R_p - R_f}{\sigma_p}$$

where:

R_p = return of portfolio

R_f = risk-free rate

σ_p = standard deviation of the portfolio's excess return

Work Submission

- Create a folder whose name is your team name (avoid special characters)
- In this folder, there must have a “strategy.py” file. You can also add other facility files in this folder. See the comments in demos for more information.
- Then zip your folder in a single .zip or .rar file. Submit it to the following mail address or my Wechat:

cdldl@connect.ust.hk

Work Submission

- One week later, TA will test your strategy on new coming data and publish a leaderboard to you.

	A	B	C	D	E	F	
1	Team Name	Programming Language	Weekly Return	Sharpe Ratio	Maximum Drawdown	Rank	Comments
2	BOOM	Python	11.00%	9.79	-1.10%	🐱 1st	
3	Yogurt	Python	4.70%	8.94	-1.30%	2nd	
4	BugCreatingMachine	R	3.73%	14.33	-4.23%	3rd	
5	Hearthstone	R	2.83%	11.06	-2.00%		
6	SoFarSoGood	Python	2.30%	3.58	-2.90%		
7	TangTangTang	Python	1.50%	3.15	-2.10%		
8	General	R	1.13%	3.71	-2.11%		Yellow alert. Submission doesn't follow the guideline.
9	dreamtoomore	R	0.83%	3.15	-2.38%		
10	anchor	Python	0.30%	3.42	-0.40%		

Demos

- Moving average
- R: Arima (5min bar)
- Python: LSTM (1hour bar)

<https://drive.google.com/drive/folders/1jBqUZgipKoATfdIbDCTqY5nb7m3ewlw>

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