# The Project of MFE 5250 CUHK SZ

- **Description**

  Welcome to participate the project of MFE5250, CUHK SZ. The target of this project is to let you know how to investigate, propose, and implement a trading strategy. Hope this project can help you learn useful things.

  Assume your team plans to setup a start-up hedge fund called XXX Capital. At this moment, since your company is looking for investment (maybe angel fund), you need to propose your trading strategy and give an attractive presentation for investors. You are required to finish the tasks below.

- **Task and requirement**
  - Propose a trading strategy.
    - Not limited to quantitative strategy. Any reasonable strategies are acceptable.
    - You do not have to propose your own strategy, and you can apply existing strategies. However, you can definitely get higher marks if you propose your own novel and profitable strategy.
  - Back test your trading strategy
    - Any markets in any exchanges (e.g. stock, futures and options, fx, fix income, mutual funds) are acceptable.
    - No limit on back testing trading period. However, you can get higher marks if you can test your strategy on tens years including one bull market and one bear market, e.g. financial crisis on year 2008.
    - Typical evaluation metrics are sharp ratio, information ratio, maximum drawdown, etc.
    - You can use any programming languages. Recommend C++, Python and MATLAB learned from this course.
  - Research report on trading strategies
    - Investigate the existing trading strategies
    - You are required to compare the trading strategy you have chosen with other trading strategies
  - Research report on general financial topics.
    - You are required to select one of the topics below
      - US CHINA Tension and its Impact on Financial Markets
      - Covid-19 Impact on Financial Markets
      - Semiconductor industry

        - New Economy Companies, e.g. tiktok, meituan
        - 光伏 PV(photovoltaic) Industry
        - Pharmaceutical industry

    - in this report, you should quantitatively or qualitatively analyze the topics, and give a clear conclusion. If you apply some existing or public available content, please kindly cite them in your reference.
    - This report can be written in Chinese or English with the pages >= 10 (tables and pictures are excluded)
  - Design the presentation materials
    - I suggest your team should have an attractive team name.
    - Try your best to show off your team's outcomes!
- **Team**
  - Each team has maximal 6 students
  - Suggested responsibility for each team member:
    - 1 quantitative researcher for trading strategies research
    - 1 quantitative developer for back testing the trading strategy performance
    - 1 sales for presentation materials
    - 2 researchers for writing the research reports
    - another student can be support for other team members
- **Outcomes**
  - 1 demo for your back testing
  - 1 ppt
  - 1 research report on trading strategy
  - 1 research report on general financial topics
- **Submission**
  - **Deadline: Dec.1 12:00 noon**
    - Each team just needs to have one submission
    - Indicate the responsibility of each team member
    - **submit all the outcomes of your team (1 demo code, related data if the data size is not large; 1 ppt; 2 research reports)**
  - Presentation date: Dec.1 afternoon and evening. Venue TBD
  - Send your program code, PPT slides, two research reports to email xyqzki@gmail.com.
    - Write a Readme file for graders to run your program.
    - Write a file to let graders know your team members

- **Evaluation**
  - Each team member has the same mark
  - 15 mins presentation 25'
  - research report on trading strategies 25'
  - research report on general financial topics 20'
  - back testing your trading strategy 30'
- **Note**
  - The tasks for this project actually are not that easy. You are not required to have a really profitable strategy or a really professional and complete research report. Just have a try, and try your best! I believe you guys will learn a lot from this project.
- **Related materials**
  - Finding alpha – world quant
    - See the attached pdf book
  - Active Portfolio Management
    - See the attached pdf book
  - algo trading tutorial

    http://numericalmethod.com/courses/introduction-to-algorithmic-trading-strategies-2011-2013/

**some Chinese learning materials**

- 建议先看《打开量化投资的黑箱》，然后看看《量化投资 以 matlab 为工具》以及知乎的帖子。部分内容来源于后面。链接: https://pan.baidu.com/s/1o77SL6M 密码: tddv

- 知乎

  https://www.zhihu.com/question/28099015
  https://www.zhihu.com/question/27980657

- 【资料分享】Python、研究报告、计量经济学、投资书籍、R 语言等！(Book+Video)

  https://www.joinquant.com/post/467

- 量化投资 优酷视频

  http://v.youku.com/v_show/id_XMTU0NDA2MzI2MA==.html?f=27113684&o=1