# Fintech Society Trading Algorithm Competition 2024

RoboFunds Competition 2024 – RFC2024

The challenge involves creating the best algorithmic trading bot by individuals or teams of up to 5, Competitors can use any strategy or tricks they desire to generate as high of a return as possible not including glitches or exploits in software. When the competition ends and bots are submitted to be tested the winner is implemented into investment society to trade approximately £250. The traded assets will be a pre-determined selection of shares.

## Allowed Shares:

Any listed index or component of said indexes:

* S&P 500 (^GSPC)
* FTSE 100 (^FTSE)
* NASDAQ ()

## Rules

1. Individuals or teams of up to 4. Competitors cannot be on multiple teams or submit individually if already on a team.
   * (Both teams face disqualification if a person is on two teams) The offending competitor is banned from future events.
2. Traded assets must be liquid and medium to large cap if the algorithm works on specific assets only.
3. No interference with other teams, such as sabotage.
   * Offending player is banned and their team is disqualified.
4. Competitors have to submit a competition form which provides information on the trading algorithm created, team members and link to github repository before deadline.
   * Teams with missing information or late are not considered.
5. Trading algorithm must have a mechanism for managing risk with hedging or limiting position size.
   * No YOLO trades.
6. Trading algorithm must be original, no copy and pasting.
7. Trading algorithm must contain a single function called **Trade** which takes a data frame and returns data in JSON format of the trade to be executed.
8. Code must not rely on third-party libraries to make decisions on trades or risk management unless it uses neural networks.
9. Decisions cannot take longer than 1 period, which it is meant to trade, or 5 minutes real-time.
   * E.g. Using 1 minute data means decision cannot take longer than 1 minute.
10. Libraries must be well known and reputable.
    * Such as pandas, scipy, scikit-learn, tensorflow, numpy and any built in libraries.

## Program requirements (WIP)

The submitted software must meet the criteria to be accepted and tested. The program will also be tested in other areas but failure to meet these criteria will result in overall failure. All price information inputted is assumed to be correct by the program.

1. The function create\_trade() located in \_\_main\_\_.py must only output the next desired trade to be executed using the relevant provided objects from trading\_api.py.
2. create\_trade() has to be reliable. This includes: not crashing, no output errors, not get stuck in infinite loops/recursion and be able to handle bad inputs. Not meeting this requirement fails your application.

## Winning Criteria and measurements (WIP)

Information ratio

Sharpe ratio

Performance against index/Relative return

Value at Risk

Volatility and Average Max downdraw

Monte-Carlo simulations using properties of allowed stocks at distinct points in time.

Win/Loss