SIG

SIG x UNSW FINTECH ALGOTHON

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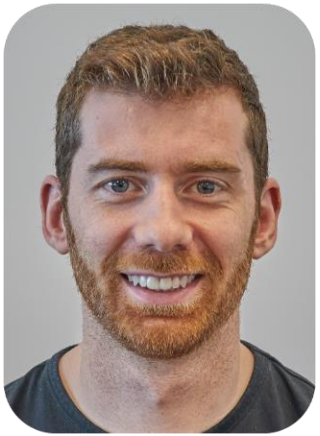
Team SIG

Davor
Quantitative Trading Strategist

Gavin
Trading Systems Software Engineer



Eamon
Graduate Quantitative Trader

Nat
Campus Recruiting

Kym
Campus Recruiting

Who We Are

- One of the largest proprietary trading firms in the world
- 2,300+ employees globally, 150+ of whom are based in Sydney
- 14 global locations
- Beyond trading, SIG is active in global private equity, institutional brokerage, and structured capital.

What We Do

We bring together the brightest minds, the best technology, and the most expansive library of data in the industry to design and implement quantitative trading strategies that make us leaders in the financial markets

Our Differentiated Approach:

- Commit our own capital to trade financial products around the globe
- Trade all asset classes, but primarily focus on derivatives
- Participate in both market making and market taking
- Build virtually all of our own trading technology from scratch

Intersecting Trading, Technology, and Research

A Culture of Reason

- Founded by poker players
- Game theory and decision science are central to our education programs and approach to the markets
- Games are a big part of our culture. A few of our favorites are:
  - Poker
  - Chess
  - Avalon
  - Strategic board games like Catan
  - Magic the Gathering

We don’t tell you what to think – we teach you how to think

Quantitative Trading & Buyside Research Roles

- What we look for: Trading
  - STEM/Quantitative background
  - Demonstrated interest in strategic games and/or competitive activities
  - Ability to communicate in a trading environment
- What we look for: Buyside Research
  - Finance/Economics or related background
  - Demonstrated passion for stock markets and why they move the way they do
  - Ability to communicate in a trading environment
- What you can expect:
  - Education, including options theory and decision science taught by SIG Traders and/or Researchers
  - Fun, fast, dynamic work and amazing colleagues that will help you to succeed

Recruitment Process

- Challenging and engaging process that is tailored based on the candidate and position

- Our goal is to learn more about you, your skillset and approach to problem solving, while you explore what it is like to be part of SIG
- Apply at sig.com/campus

Algothon - What you need to know

THE NEW 2021 STRUCTURE

What has changed for this year?

Single Proficiency Stream

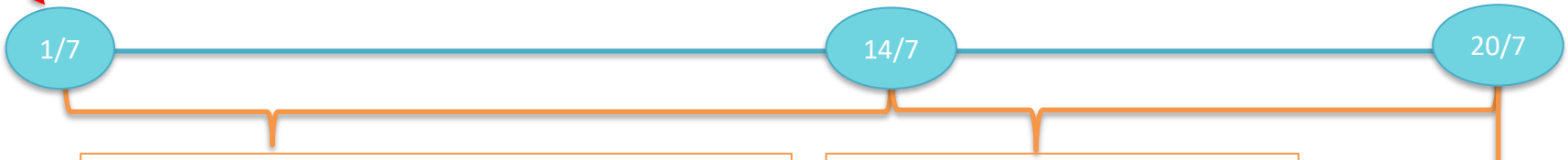
Programming with Python
Python 3.6+

Simulated Trading Universe

Timeframe
1st Jul 19:00 AEST – 14th July 9:00 AEST

COMPETITION PROCESS

How will the Algothon work?



SOLUTION BUILDING

1. Build your model using ***prices.csv***
    - First 250 days of trading data
2. Submit a source code containing *getMyPosition()* function
    - Returns vector of stock positions
    - Function to be used in evaluation
3. Submit a 1 min video
    - Explains the rationale/motivation for the strategy built

PRELIMINARY JUDGING

1. Function *getMyPosition()* passed through next 250 days of data
2. Finalists announced Sat 17/07
    - Finalists given additional time to modify code

FINALS

- Final 250 days of data will be run through code LIVE
- 5 min presentation and 4 min Q&A

SIMULATED TRADING ENVIRONMENT

SIG have created a simulated trading environment through a dataset which will be provided by FinTechSoc, this ‘trading universe’ consists of…

- Simulated ‘daily’ price data of 100 instruments.
- A dollar position limit of $10k (max long/short dollars) per stock
- Commission rate of half a percent or 50 bps (commRate = 0.0050). Commission deducted from your P/L.
- The stocks get 1 price update per ‘day’.
- The full data set includes the above for over 1 years worth of simulated trading.

Note that the dataset for preliminary judging will *not* be the same as the data in your pack. Finalists will be provided with this additional data after the first round, to allow for amendments to their algorithm.

The dataset for final judging will also be *new unseen data*.

PYTHON ARCHITECTURE / INTERFACE

To assess the success of your algorithm, SIG have created an autotesting python program, which you will also use to test your algorithm before submission. *eval.py*.

This is a simple evaluation function which keeps track of your basic trading performance and outputs a ‘daily total position’.

All you have to do is…

- Assess provided **price data** from our simulated trading universe.
- Build a predictive model.
- Back-test the predictive model across given price data.
- Evaluate your algorithmic strategy and submit!

SUBMISSION

Preliminary Submission Deadline – 9am 14th July

- Team name , captain and email

- Link to public GitHub repo, containing your source code in a file titled *[team_name].py.*
  - This file will contain your python algorithm, containing function ***getMyPosition().***
  - Your function must take in the **data** provided in ***prices.csv.***
  - ..and **output** a vector of integers, **each denoting your daily position**.

- 1 minute video, briefly explaining your algorithm
- Any supporting documents or libraries

- Final Round submission will also include a slide deck for your presentation & Q&A

Algothon participants must have Python installed (v3.6+).

- We highly recommend using standard popular analytics/plotting libraries such as NumPy, Pandas and Matplotlib.
- This can be done using the Anaconda package manager, which supports Windows, Linux and Mac.
- Other libraries such as TensorFlow and SciPy are also supported by Anaconda.
- More resources for using Python can be found on the Notion pages.

TESTING AND CODE REVIEWS

- Code Review:
  - Reduction in simple\obvious bugs
  - Improved design\architecture
  - Knowledge spread

- Unit testing:
  - Verify code works as expected, detect problems early during development.
  - Easier and safer to refactor\modify code as requirements changes
  - Ultimately makes everyone more productive.

- Helpful python libraries: timeit, profile, trace, PySnooper

JUDGING CRITERIA

Your algorithms will be assessed based on the quality of **overall performance**, as well as the creativity/originality of implementation, and how your presentation outlines your thinking.

Judging criteria will include:

- Profit and loss,
- Total portfolio return, and
- Sharpe ratio.

Prioritising one metric over all others is inadvisable. However, feel free to create an algorithm that preferences achieving optimal results in one or two metrics as long as there is **valid reasoning behind your decisions.**

JUDGING CRITERIA DATA

Price data is generated synthetically for a period of consecutive 750 days.

- The first 250 days of prices provided at start to train/test your models.
- In Round 1 we will evaluate your trading strategy on days 250-499 only.
- The final round we will evaluate your trading strategy on days 500-749 only.
- Your getMyPosition(priceHist) function will always be invoked once a day with the entire price history so far – i.e. on day t, priceHist will contain the entire price history from day 0 to day t.

RESOURCES & ADVICE

Algothon Information Hub
For detailed competition info
and resources

ANACONDA.

QUANTSTART — **Beginner's Guide to Quantitative Trading**

Quantopian — **Quantopian Lecture Series**

Learndatasci: Data Science Tutorials

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...or source your own…

Q&A