

Data Science in Finance

Sponsored by



Introduction

If you are considering a career combining quantitative analysis and finance, there are few areas with as much promise as data science. As the variety and depth of data available online continues to increase, so will the potential for its use in investing.

While “quant funds” like Two Sigma have been taking a data driven approach to investing for more than a decade, in the past few years more and more firms have been establishing data science teams of their own. *This is your chance to take advantage of a significant emerging trend.*

Key traits

The key traits firms in this space look for are:

- **Curiosity** You should have a personal interest in developing a deeper understanding of the world by looking at it through data. Many data scientists even do independent research in their spare time.
- **Practicality** When faced with a business problem, you should have intuition around which approaches have promise and which don’t – or at least the ability to quickly test possible avenues before you actually take them.
- **Resourcefulness** Instead of settling for the resources you are given, you should be able to find new data sources and new code libraries to build on your initial analysis.

Please note that a strong understanding of statistics and data science is a plus but not a necessity. This program is being run in large part so as to give you a chance to improve your expertise in those areas.

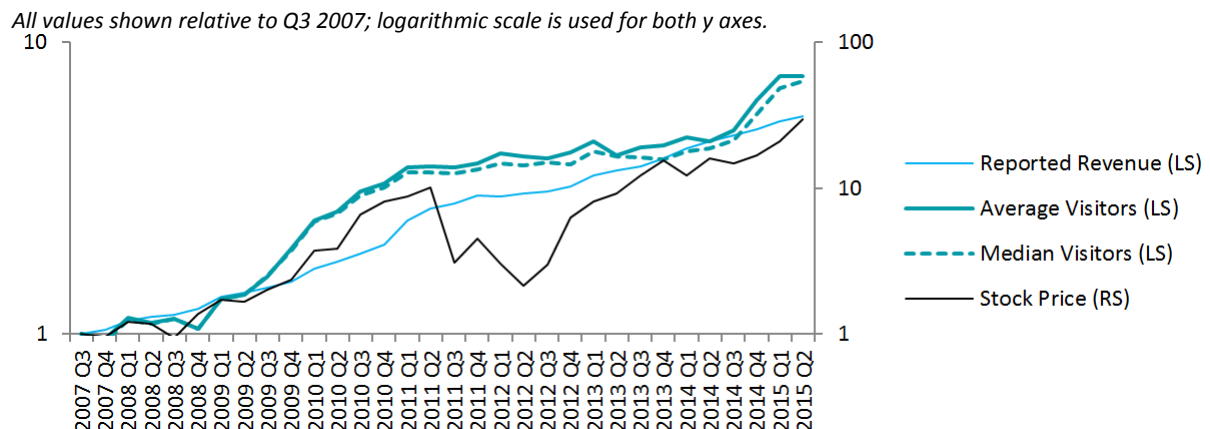
Your assignment

Background

You are most likely familiar with Netflix – a leading provider of online streaming media. Those of you who looked at the company’s stock (ticker NFLX) might have gone through the firm’s financial statements. Unfortunately such statements are only issued once a quarter. Is there another dataset we can use to figure out whether or not the day-to-day changes in NFLX share price make sense?

One such dataset is the number of unique visitors to *netflix.com*. [Thinknum](#) provides a daily time-series; we pre-loaded it for you [here](#).

Before you start looking at daily data, try and get a sense for the relationship between Thinknum’s data, Netflix revenues (from their quarterly financials), and their share price (from Yahoo! Finance). Having done this ourselves on a quarterly basis, we saw the following relationship:



Instructions

The output from your analysis should be a 1-2 page write-up. We expect it to take at least 2-3 hours to complete, but you are welcome to spend as much time on it as you deem appropriate; feel free to [contact us](#) if you feel stuck or would like to clarify anything.

Your write-up should open up with a chart like the one shown above; feel free to add or exclude whatever time series you deem most useful. Please then provide a few lines of commentary. The rest of your write-up should be dedicated to answering the following questions:

*What do you expect the company’s Q3 revenues to be when they are announced on October 15th?
Would you buy / sell the stock right now? If so, what is your target price?*

You are encouraged to demonstrate the three traits described above. Bonus points will be given to those who extend their analysis to also cover firms like Amazon, LinkedIn, etc; to make this easier, we have uploaded historical financial data for 18 firms (including NFLX) [here](#).

Authors of impressive submissions will be highlighted to Two Sigma’s recruiting team.

This is not an offer to sell or the solicitation of any offer to buy any securities.