

Data Science in Finance

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Price data

A few students reached out to us asking where they can find historical price data for Netflix. You can download this information for any US listed stock from Yahoo! Finance by using the following syntax:

`http://ichart.yahoo.com/table.csv?s={ticker}`

By way of an example: <http://ichart.yahoo.com/table.csv?s=NFLX> gives you a CSV with all historical prices for Netflix stock. *Make sure you convert prices to returns before doing any analysis on them.*

What we look for

The Netflix case given in the assignment is just an illustration of how you can use novel data sources to supplement and support fundamental research. What will really set apart top performers in this program – and in this field – is the ability to go beyond the examples you are given. This can be done in a number of ways; from least to most difficult:

1. By extending your analysis to other names.
2. By incorporating more data into your analysis.
3. By coming up with other ways to gain insight into the performance of publicly traded companies through novel data sources.

Each of these paths is explained in more detail below.

Looking at other names

To help you look beyond Netflix, the web traffic data file cited in the assignments covers 17 other companies - see the table on the right.

Try and come up with interesting questions – and then figure out how you can answer those questions with the data you have.

For example, it might be interesting to look at trends in the relative revenues of Expedia (EXPE), Priceline (PCLN), and TripAdvisor (TRIP) – three competing travel booking services – versus their web traffic statistics to get a sense for each firm's share of the market has been changing through time. This kind of fundamental insight should help you make sense of historical changes in the prices of these three stocks relative to each other, and to make an educated guess as to how these three stocks will perform going forward.

You can look at broader trends. Is overall traffic to travel booking websites still growing rapidly – or has it peaked? How has the relationship between traffic and revenue been evolving for social websites like Facebook and Twitter, and how long will it be until growth in that space plateaus? So on and so forth.

Please do not settle for the questions we are asking here. Our goal is to help you figure out how to come up with your own questions.

Category	Ticker	URLs tracked	Company
Shopping	AMZN	8	Amazon
	EBAY	1	eBay
	OSTK	1	Overstock
Search	GOOG	1	Google
	BIDU	1	Baidu
	YNDX	1	Yandex
Travel	EXPE	1	Expedia
	PCLN	6	Priceline
	TRIP	8	TripAdvisor
Social	FB	1	Facebook
	TWTR	2	Twitter
	LNKD	3	LinkedIn
	YELP	2	Yelp
Other	GRUB	4	GrubHub
	NILE	1	Blue Nile
	PETS	1	PetMed Express
	FLWS	1	1-800-Flowers

Incorporating more data

Going back to the EXPE, PCLN, TRIP example: the travel industry in general is quite sensitive to the price of fuel. It might be interesting to incorporate crude oil prices into your analysis and to see how that impacts both traffic to travel websites as well as those sites' ability to monetise that traffic.

You will not always know what data set will be most helpful until you go out there and start looking at what's available. Fortunately there is a growing number of search engines and indexes providing access to thousands of different data sets; check out [Quandl](#), [Enigma.io](#), [Common Crawl](#), [Data.Gov](#) – and do try find others. We would also encourage you to source your own data sets with techniques like scraping.

Leaving the sandbox

You don't have to stick to web-based businesses and web traffic data. For example, more and more cities are beginning to report solar panel installations; in principle, you can track installation volumes as well as costs to predict changes in the revenues of firms like SolarCity (SCTY).

Having actually explored the SolarCity example in some depth, we can tell you that there is not quite enough data yet for it to be analysed in this way. But again, don't limit yourself to the examples we are giving you.

Submission instructions

Please use [this form](#) to submit your 2-3 page write-up.

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