

Introduction to NLP for Finance

What is NLP?

Natural Language Processing (NLP) is a set of techniques that helps us gain insights from text data.

(or other “language data”)

Why use NLP?

Historically, Finance and its practitioners have predominantly relied on numerical data for investment analysis.

This ranges from simple 'ratios' to more advanced 'portfolio optimisation' techniques.

Why use NLP?

This is largely because analysing text was extremely time consuming and cumbersome.

Why use NLP?

The WSJ (2015) reports that the average annual report (10-K) had about 42,000 words in 2013, up from roughly 30,000 words in 2000.

Source: *The Wall Street Journal*, [Online], Available:
<https://www.wsj.com/articles/the-109-894-word-annual-report-1433203762>

Why use NLP?

By comparison, the text of the Sarbanes-Oxley Act of 2002 has 32,000 words

Source: *The Wall Street Journal*, [Online], Available:
<https://www.wsj.com/articles/the-109-894-word-annual-report-1433203762>

Why use NLP?

GE's CFO, Jeffrey Bornstein was taken aback by the sheer size (246 pages) of their own annual report.

“Packed with text on the company’s internal controls, auditor statements and regulator-mandated boilerplate, ... , the 2013 annual report was 109,894 words long. Not a retail investor on planet Earth could get through it, let alone understand it.”

Why use NLP?

Advancements in technology have meant that it is now significantly easier to analyse large volumes of text data.

And gain insights from that data.

Applications of NLP techniques in Finance are fairly extensive, and increasing.

NLP Techniques in Finance



Context

(e.g. using Topic Modelling to establish context of news articles, firm announcements, business descriptions, etc)

Compliance

(e.g. detecting insider trading via emails / chat transcripts)

Quantitative Analysis

(e.g. trading strategies using sentiment analysis)

Natural Language Processing allows us to leverage the power of text data and work on interesting problems in Finance.

Summary



Natural Language Processing (NLP) is a set of techniques that helps us gain insights from text data.

Today, Finance is increasingly seeing usage of text data in conjunction with more traditional numeric data.

Broadly, NLP is applied in Finance for Context, Compliance, and Quantitative Analysis.

**Now have a go
at the quiz!**

