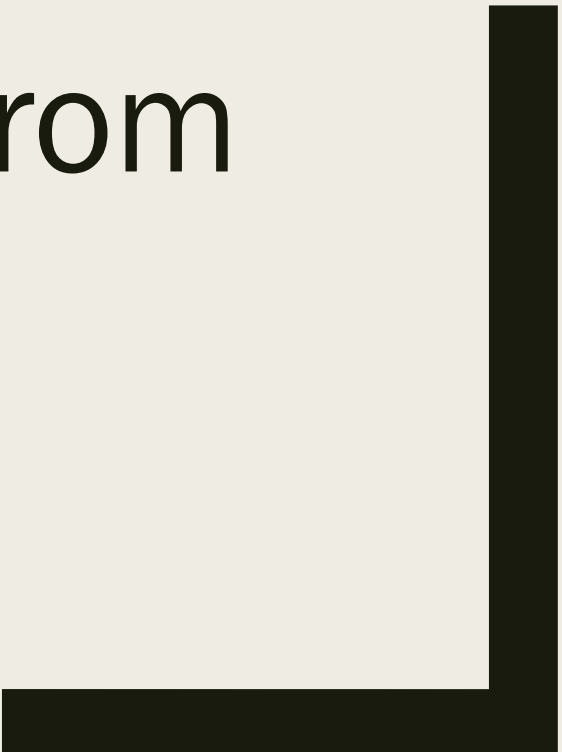




Deriving Alpha from News: GDELT

Ty Painter
Capstone Update #6
3/31/22



NLP

■ Sentiment scores

- *Added net scores (positive - negative)*
- *Roberta is producing many neutral scores*
 - Single sentence could skew results
 - Focus on mean/median rather than max/min?

■ Article Tags

- *Fuzzywuzzy package*
- *Token_set_ratio()*
 - split the tokens into two groups: intersection and remainder; use those sets to build a comparison string.
- *Filter based on what value?*

■ Readability scores

- *Readability package*
- *What metrics are most useful?*




Fuzzywuzzy

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Fintech stocks fall amid report of Apple's financial services plans

 **Ines Ferré** · Markets Reporter
Wed, March 30, 2022, 3:10 PM · 1 min read

In this article:

MQ +0.80% ☆	V -0.63% ☆	GNP -0.86% ☆	PYPL -1.09% ☆	SQ -1.17% ☆	AFRM +2.14% ☆	AAPL -1.01%
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Block ([SQ](#)), PayPal ([PYPL](#)), Marqeta ([MQ](#)) Visa ([V](#)), and other payment companies' shares fell on Wednesday afternoon after [Bloomberg reported](#) Apple ([AAPL](#)) is working on a plan dubbed "Breakout" aimed at bringing financial services in-house.

The report states the tech giant is building a payment processing technology and infrastructure as part of an effort to decrease its dependence on outside partners. The strategy is aimed at future financial products instead of existing ones.

Shares of Block, formally known as Square, fell by more than 4% an hour before the closing bell on Wednesday. PayPal shares were down about 2%. Visa and Global Payments ([GNP](#)) was also lower.

```
tickers = ["AAPL", "TSLA", "AMZN", "GOOG"]
companies = ["Apple", "Tesla", "Amazon", "Alphabet", "Facebook"]
ticks_and_comps = tickers + companies
scores = process.extract(article,
                           ticks_and_comps,
                           scorer=fuzz.token_set_ratio)

print(scores)

tags = [scores[i][0] for i in range(len(scores)) if scores[i][1]>85]
print(tags)


[('AAPL', 100), ('Apple', 100), ('Alphabet', 2), ('Facebook', 2), ('TSLA', 1)]
['AAPL', 'Apple']
```

Readability

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```
results = readability.getmeasures(article, lang='en')
results

OrderedDict([('readability grades',
  OrderedDict([('Kincaid', 92.63419913419914),
    ('ARI', 118.35402597402597),
    ('Coleman-Liau', 14.386707952380956),
    ('FleschReadingEase', -157.64298701298696),
    ('GunningFogIndex', 99.15324675324676),
    ('LIX', 261.73593073593076),
    ('SMOGIndex', 37.20526275297414),
    ('RIX', 71.0),
    ('DaleChallIndex', 21.724532900432898)])),
('sentence info',
  OrderedDict([('characters_per_word', 5.1558441558441555),
    ('syll_per_word', 1.5367965367965368),
    ('words_per_sentence', 231.0),
    ('sentences_per_paragraph', 1.0),
    ('type_token_ratio', 0.6536796536796536),
    ('characters', 1191),
    ('syllables', 355),
    ('words', 231),
    ('wordtypes', 151),
    ('sentences', 1),
    ('paragraphs', 1),
    ('long_words', 71),
    ('complex_words', 39),
    ('complex_words_dc', 97)])),
('word usage',
  OrderedDict([('tobeverb', 12),
    ('auxverb', 1),
    ('conjunction', 6),
    ('pronoun', 3),
    ('preposition', 38),
    ('nominalization', 8)])),
('sentence beginnings',
  OrderedDict([('pronoun', 0),
    ('interrogative', 0),
    ('article', 0),
    ('subordination', 0),
    ('conjunction', 0),
    ('preposition', 0)]))])
```

Next Steps

- Find computation environments
- Apply article tags and readability scores to the rest of the data
- Merge historical stock price and market cap data with sentiment scores, article tags, and readability scores
- Begin modeling