



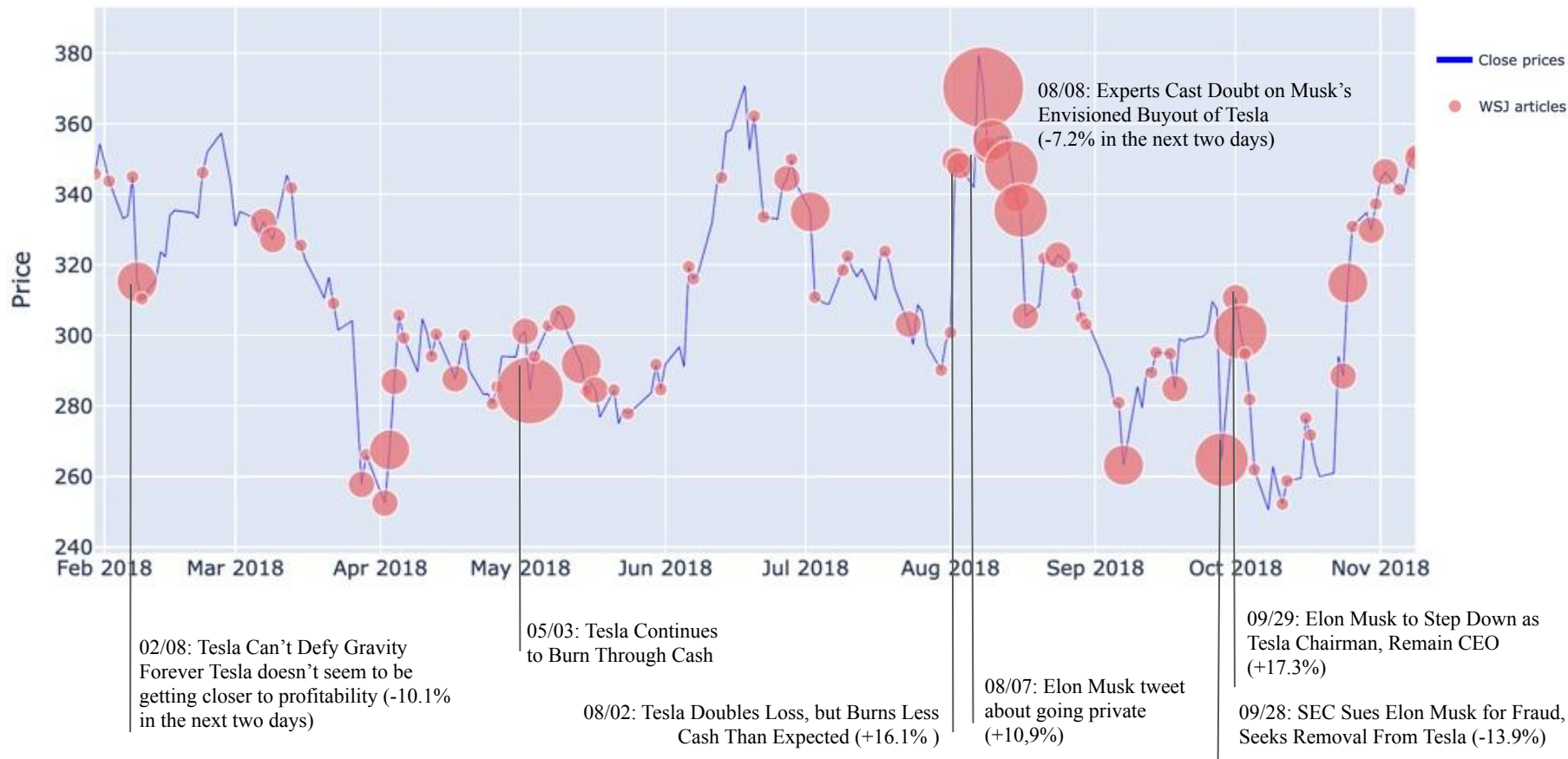
PREDICTING STOCK MARKET WITH TEXT ANALYSIS

Efficient Market Theory

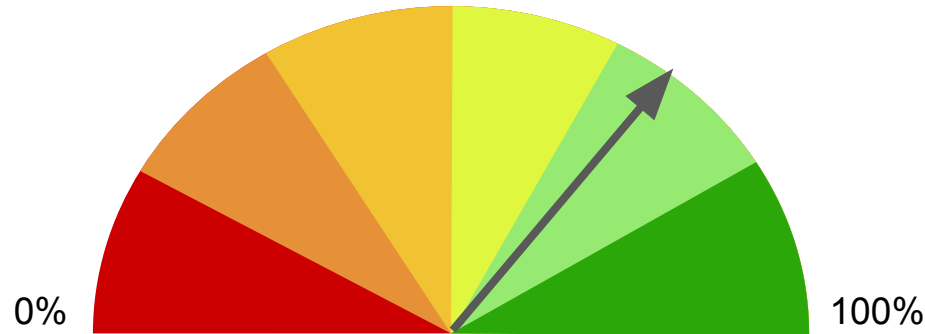


Existing share prices
always incorporate
and reflect all relevant
information.

What news move the price: Tesla 2018



Can **sentiment analysis** guide **trading decisions?**



Model: examples from the last week

	Stock	Model prediction	Relative change in stock price*
<p>“The United Auto Workers said it has reached a tentative labor deal with Fiat Chrysler. It is an important step toward ending a grueling round of labor talks in Detroit.”</p> <p>WSJ Dec. 1, 2019 5:46 pm</p>	Fiat Chrysler	68.4%	0.6%
<p>“Ryanair Holdings said it would cut jobs and close two bases as it warned traffic growth would slow next year because of new delays in deliveries of its first Boeing 737 MAX aircraft”</p> <p>WSJ Dec. 4, 2019 11:13 am ET</p>	Boeing	48.9%	-1.7%
<p>General Electric aims to excite investors about its health-care division, a business that was tagged to be cast off but is now central to the company’s turnaround efforts.</p> <p>Dec. 1, 2019 12:01 am ET</p>	General Electric	30.0%	-0.1%

* Compared to S&P500

Model accuracy: 59.6%

Source data:

- WSJ article headlines & summary
- 2010 to Present
- 9 companies (GE, IBM, Boeing, Goldman, Tesla, Ford, JPMorgan, Microsoft, General Motors)

Challenges:

- The stock prices not always reflect the attitude of an article
- If there are more articles on a day, how to evaluate their separate effect

		Model classification	
actual	+	26%	23%
	-	17%	34%
		+	-
		prediction	

Automatic trading algorithm

Gather more
company data:
Press releases
Tweets, etc.

Collect
industry
specific
articles

Create
company
level models

Integrate
into a
complex
model

