



Sentiment Analysis Symposium June 27-28, 2017 **New York**

Focus on what truly matters!

Extraction and Interpretation of

Trading-Relevant Information



Trading-Relevant Information



- What are relevant <u>Information Sources</u>?
 - Data, Structured: Databases, APIs, ...
 - Texts, Unstructured: News, AdHocs, Blogs, Reports, Social Media, ...



- Semantic Units
 - Underlyings, Indicators, Locations, People, ...
- Explicit Information
 - Numbers & Values: Normalization, Abbreviations, Spans, Units, ...
- Context
 - Analyst Ratings, Earnings Announcements, Project Wins, ...
- Implicit Information
 - Mood & Impact: Sentiment, Impact, Relevance, Scoring, ...
 - Classification
 - Linkage

Semantic Units I



Goals

- Identify, Augment, Filter

Name Germany
CURRENCY EUR, €
Language Deutsch
Population 81.41m
GDP 2015 3.356t USD
Poverty rate 0.10

Peter Hargreaves @PkhPeter · 19 Std.

Germany struggling VW to cut 30,000 jobs; desperate for trade deal BMW call UK Treasure Island. We need to do the Brexit deal now.

Mark Zuckerberg Explains How Facebook Plans to Fight Fake

Mark Zuckerberg outlined several steps Facebook is testing to fight misinformation, an acknowledgment that the social network could be a seen as a second several steps.

wsj.com

Name Facebook Inc
HQ US, California
Symbol FB.O
ISIN US30303M1027
Index NAS
EPS 2016 4.23
CURRENCY USD, \$

Name Janet Yellen

Position Chair of the Federal Reserve

Birthdate 13.08.1946
Spouse Robert Akerlof

Gold shifts lower to log lowest finish since June

Gold futures shift lower late in Thursday's session to finish at their lowest level since June as Federal Reserve Chairwoman Janet Yellen backed up...

marketwatch.com

USA TODAY Money @ @USATODAYmoney · 17. Nov.

Jobless claims fell 19,000 to 235,000; claims have been below 300K for 89 straight weeks, longest streak since 1970 usat.ly/2q1GG3i

2016 - the year the PEOPLE took back control: Farage hails Brexit ...

ANGELA MERKEL and Barack Obama are in denial over the people's repeated rejection of the establishment, Nigel Farage has blasted.

express.co.uk

Indicator Jobless Claims
Country US
2016 275,000
2015 260,000

Semantic Units II







AAPL NEWS No prices available

2017-06-19 05:20

by David Shepardson Washington, June 19 (Reducts) - President Durato Tromp with meet with the criter executives of technology companies including Apple Inc -AAPL.O> and Amazon.com Inc -AMZN.O> on Monday as the White House looks to the private sector for help in cutting government waste and improving services.

UPDATE: UPDATE 3-Tech CEOs meet with Trump on government overhaul 3 days ago

REUTERS NEWS

By David Shepardson WASHINGTON, June 19 (Reuters) – President Donald Trump met on Monday with the heads of 18 U.S. technology companies including Apple Inc <AAPL.O>, Amazon.com Inc <AMZN.O> and Microsoft Corp <MSFT.O>, seeking their help to make the government's computing systems more efficient. [...] Today it doesn't," Apple Chief Executive Officer Tim Cook said

UPDATE: *TOP NEWS*-U.S. Companies 3 days ago

DELITEDS NEWS

Apple tells court Qualcomm chip licenses are invalid [nL1N1JH00S] >

UPDATE: BREAKINGVIEWS-Trump's CEOs do more listening than influencing 2 days ago

REUTERS NEWS

Amazon AMZN.O CEO Jeff Bezos, Apple CEO Tim Cook and Microsoft CEO Satya Nadella were among the attendees.

UPDATE: Tesla's autopilot software head quits in less than six months<TSLA.0> 2 days ago

REUTERS NEWS

"Turns out that Tesla isn't a good fit for me after all," Lattner, who worked at Apple Inc <AAPL.0> for more than a decade before joining Tesla in January, tweeted.

UPDATE: Parkopedia 2017 Global Parking Index: Spotlight on Germany 2 days ago

R NEWSWIRE

Parkopedia is the world's leading parking service provider used by millions of drivers and organizations such as Audi, Apple, BMW, Coyote, Ford, Garmin, GM, Jaguar, Land Rover, Peugeot, Sygic, TomTom, Toyota, Volvo and many others

UPDATE: Workplace Electric Vehicle Chargers to Increase 10X by 2022 2 days ago

PR NEWSWIRE

"Testa with autonomous driving has captured the imagination of new car buyers who want a complete transformation in their next vehicle purchase," says Mareca Hatler, ON World's research director. "This phenomenon is reminiscent of how Apple's iPhone completely disrupted the mobile communication industry and now Tesla, Google, Apple and others are investing billions in deep learning electric vehicles that will completely revolutionize our transportation systems.

UPDATE: Apple Co-Founder Steve Wozniak to Address Global Leaders at DC Tech Summit 2 days

PR NEWSWIR

Apple Co-Founder Steve Wozniak to Address Global Leaders at DC Tech SummitThe Silicon Valley icon will speak at the 2017 Future of Technology Summit [Nov. [...] WASHINGTON, June 21, 2017 /PRNewswire/
-- Computer engineer and innovation mastermind Steve Wozniak, best known as co-founder of Apple, Inc., is headed to Washington, DC on November 2(nd) to share his vision for the future of technology with leaders from local and international business, government, and social sectors. [...] In addition to co-founding Apple, Steve Wozniak has been an innovator, philanthropist, and Silicon Valley icon for many years, focusing special attention on leveraging technology for education. [...] Apple Co-Founder Steve Wozniak to Address Global Leaders at DC Tech Summit 2017-06-21T12:45:00.000Z

UPDATE: Parkopedia 2017 Global Parking Index: Spotlight on Germany 2 days ago

PR NEWSWIRE

Parkopedia is the world's leading parking service provider used by millions of drivers and organizations such as Audi, Apple, BMW, Coyote, Ford, Garmin, GM, Jaguar, Land Rover, Peugeot, Sygic, TomTom, Toyota, Volvo and many others.

UPDATE: *TOP NEWS* Consumer Goods a day ago

SIGN OUT

Semantic Units III

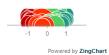




FINISHED

Activity **7139** Filtered **0**

Setup 🌼









Actions

Start

Stop

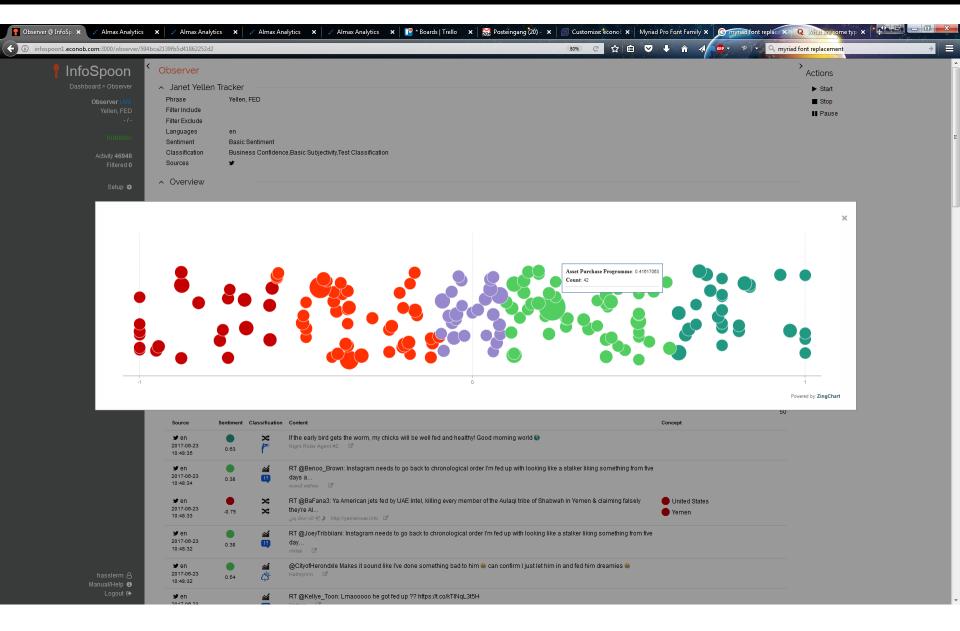
■ Pause

Insights				-0	—
Source	Sentiment	Classification	Content	Concept	
y en 2017-06-22 17:44:32	0.80		Donald Trump talks up solar panel plan for Mexico wall: "Pretty good imagination right? Good? My idea." https://t.co/pDL0PGlzkd Jeff MacArthur http://www.KonnektNow.com &	Trump Mexico	
y en 2017-06-22 17:44:32	-0.12	1?	RT @RCorbettMEP: Another case of illegal spending by the #brexit side in referendum : "respect" the result, anyone? https://t.co/vr5cqCz8rR vicky webb		
y und 2017-06-22 17:44:32			RT @CPFC_Supporters: https://t.co/rx/TVkj9cG Katie Turner		
y en 2017-06-22 17:44:32	-0.50	⊕ ≭	RT @BBCNews: Footage emerges of PM Theresa May being booed after visiting victims of #GrenfellTower fire https://t.co/xlResqeAlX https://tbuyukakin http://buyukakin.wordpress.com/ 🗗	Conservative Party Theresa May	
y en 2017-06-22 17:44:32	-0.31	×	RT @PeterStefanovi2: The High Court just found Theresa May acted illegally, and caused 'real misery'. For no reason! https://t.co/k5AMhg6cO GILL ROSS & C	Conservative Party Theresa May	
y en 2017-06-22 17:44:32	0.75	<i>Ġ</i>	I love to #win a @THORPEPARK Family Ticket via @etspeaksfrom https://t.co/QcdRGAlkGX Tracey S Anderson		
y ja 2017-06-22 17:44:32			RT @oekakimaestro: 米ジョージア州で、囚人による公共基地清掃の労務作業中に一人しかいなかった見張りの看守が心臓発作で倒れたが、作業班の六人の囚人が一人として逃げ出さず救命処置を行い看守のケータイで救急車を呼んだため、25%の刑期短縮 https://t.co/		
y en 2017-06-22 17:44:32	0.10	۴	RT @TheRedRag: The remoaners are furious. Labour are desolate. Only the @Conservatives create the best business environment. https://t.co/N Patricia McDermott &	Labour Party Conservative Party	
y en 2017-06-22 17:44:32		×	RT @Matt_Law_DT: Conte wants either Bonucci or Van Dijk but neither deal will be straightforward #cfc https://t.co/vMrzy/mepC Transfer Sources		
y en 2017-06-22 17:44:31			No, re sharpo https://t.co/5wb8PTSsAz MoJuta™ http://www.facebook.com/SasmaYne		

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Semantic Units IV

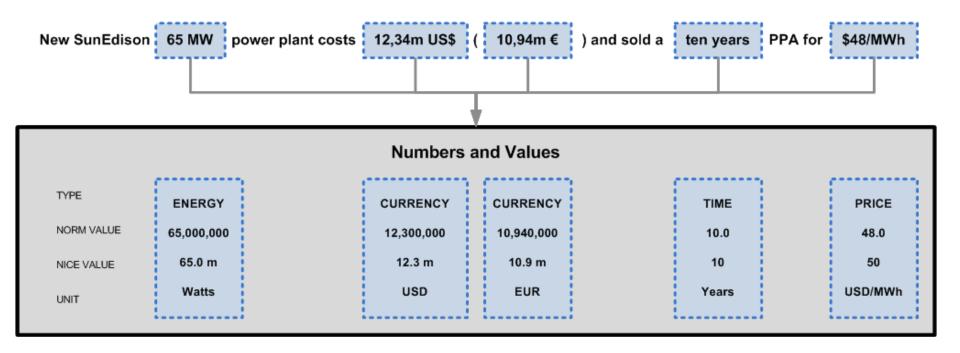




Explicit Information I



- Goals
 - Normalize, Convert, Extract
 - Numbers, Scales, Units, ...



Explicit Information II



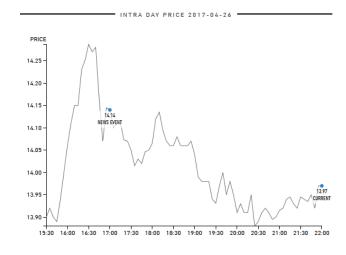


CSIQ PROJ \$14.14 \$13.97 -1.22% \$14.14

2017-04-26 13:00

Canadian Solar: ProjectWin (COMPLETING)

Canadian Solar Supplies 10 MW of Modules to the Largest Solar Project in Uganda 2017-04-26T11:00:00.000Z [...] Canadian Solar Supplies 10 MW of Modules to the Largest Solar Project in Uganda PR Newswire [...] (http://www.canadiansolar.com/) (the "Company", or "Canadian Solar") (NASDAQ: CSIQ), one of the world's largest solar power companies, today announced that the company has supplied 10 MW of PV Modules to Soroti Photovoltaic Plant in Uganda.



- RELEVANT RATIOS -

PROJECTED ANNUAL SALES / TOTAL SALES ②

0,03%

The projected change in sales is an important market factor.

The additional projected annual sales are put in relation to the total sales of the company and the percentage change is calculated.

Solar Power Project [MW] * Average Power Purchase Agreement Project [\$/MWh] * Capacity Factors Solar Farms (Industry Wide Data) [Ratio per MW] *24 * 365

VALUES

2015-12-31

10.0000 MW Average Power Purchase Agreement Price (Industry Wide Data) 44,3 \$/MWh

Capacity Factors Solar Farms (Industry Wide Data)

Revenue

3.467.626.000 \$

0,286

0,1% 1 100 07/ /0 ¢

SIGN OUT PASSWORD

June 2017

Explicit Information III





CSIQ PROJ

\$14.14 \$13.97 -1.22% \$14.14

2017-04-26 13:00

SOURCES

Canadian Solar Supplies 10 MW of Modules to the Largest Solar Project in 2 months ago PR NEWSWIRE Uganda

PROJECTED ANNUAL SALES / TOTAL SALES

0.03%

The projected change in sales is an important market factor.

The additional projected annual sales are put in relation to the total sales of the company and the percentage change is calculated.

RELEVANT RATIOS

Solar Power Project [MW] * Average Power Purchase Agreement Project [\$/MWh] * Capacity Factors Solar Farms (Industry Wide Data) [Ratio per MW] *24 * 365

VALUES

Average Power Purchase Agreement Price (Industry Wide Data)

10.0000 MW 44,3 \$/MWh

Capacity Factors Solar Farms (Industry Wide Data)

0,286

2016-03-31

Revenue

3.467.626.000\$

2015-12-31

NEW PROJECT SECURED / TOTAL PIPELINE 🕄

0.1%

The Total Project Pipeline and the growth of it are important metrics for solar companies.

The secured new projects are put in relation to the Total Project pipeline and the percentage change is calculated.

Solar Power Project [MW] / Total Project Pipeline [MW]

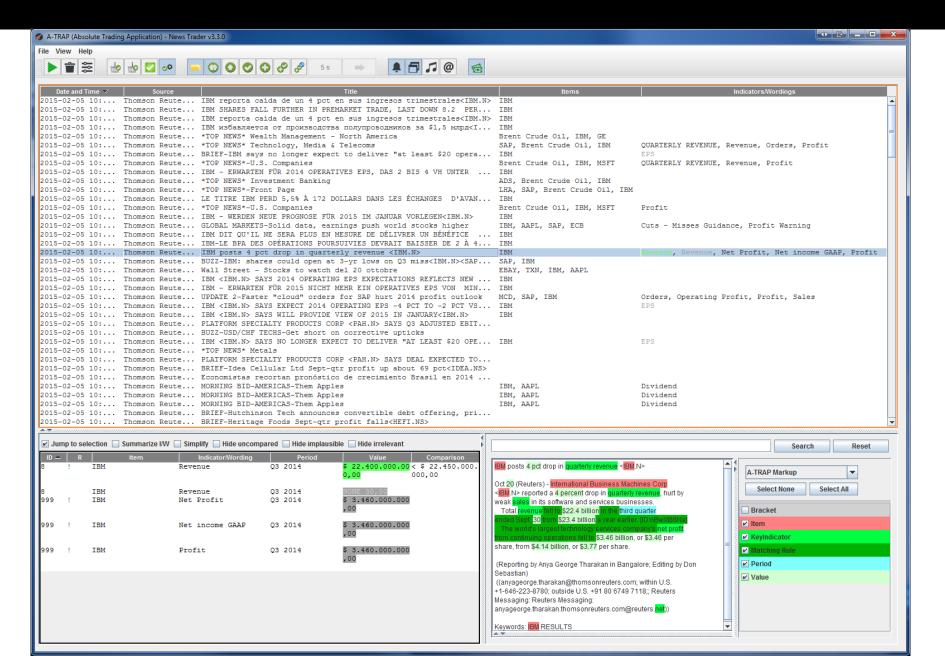
VALUES

Total Solar Project Pipeline (Utility Scale) 2016-03-31

10.0000 MW 10.419,94 MW

Explicit Information IV



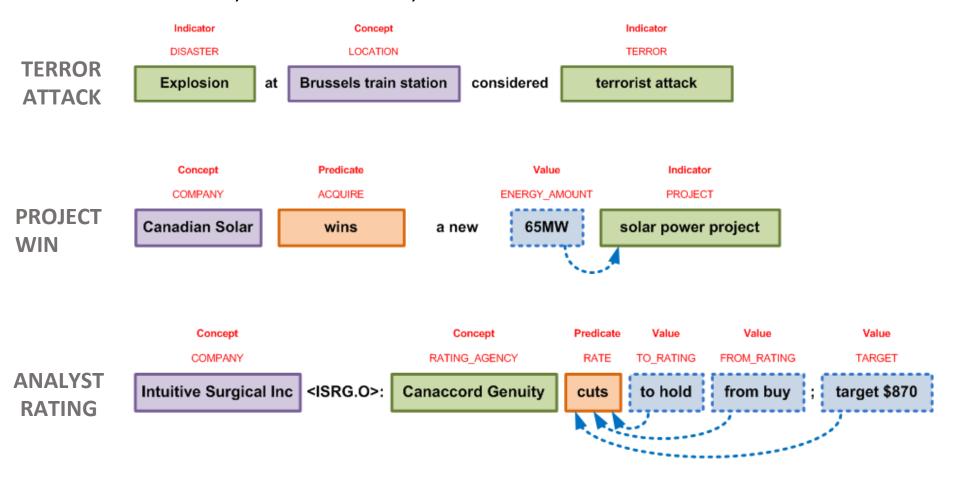


Context I



Goals

Combine, Contextualize, Understand



Context II





Q • latest •	AAPL • New	s • ORA •	Ratings •	SR • Solar Se	ector • T	SLA + «
NEP PRJSA (REUTERS NEWS) Fit	\$37.17 ch Assigns 'BB+' tlook Stable	\$37.05 - First-Time Ra		\$37.17 era Energy Partners,	L.P.;	2017-06-22 16 : 2017-06-22 16:
(REUTERS NEWS) BR		*	PV Modules 1	\$20.53 o Solar Plant in Hok dules to solar plant		2017-06-22 12 : 2017-06-22 12: 2017-06-22 12:
JKS PRJSA PR NEWSWIRE JIN	\$20.53 koSolar to Supp	\$20.25 - ly 38.4 MW of		\$20.53 o Solar Plant in Hok	:kaido	2017-06-22 12 : 2017-06-22 12:
TSLA PROJ S	371.52 \$					2017-06-20 15 : 2017-06-20 15:
	-	ement on firs		lant in China-Bbg<1	ſSLA.O>	2017-06-20 00: 2017-06-20 00: 2017-06-20 15:
SPWR PROJ No	prices available pint3 Energy Par	3,	,	Quarter Results on .	June 29,	2017-06-19 22 : 2017-06-19 22:
GLOBENEWSWIRE IM	USINESS WIRE (E	OR ALERT: Lui iinst SunPowe	ndin Law PC A	nnounces a Securit and Reminds Invest		2017-06-21 22:
PR NEWSWIRE ED	prices available F Energies Nouv 5 MWp of Solar I	elles to Partn		ian Solar for an Add	itional	2017-06-19 13 : 2017-06-19 13:
	\$13.05 F Energies Nouv 5 MWp of Solar I		er with Canad	\$13.05 ian Solar for an Add	itional	2017-06-19 13 : 2017-06-19 13:
CAFD PROJ	\$13.61	\$13.70	0.66%	\$13.61		2017-06-19 12:

SIGN OUT PASSWORD HELP

PR NEWSWIRE Pattern Energy Announces Key Strategic Initiatives for Major Expansion of 2017-06-19 12:00

Context III





AAPL **RATE**

No prices available

2017-06-12 12:56

Apple Inc: AnalystEvent (CUTS)

REUTERS NEWS

* Apple Inc <AAPL.O>: Mizuho cuts to neutral from buy [...] * Apple Inc <AAPL.O>: Mizuho cuts to neutral from buy, cuts target price to \$150 from \$160



SMAWF PROFI No prices available

2017-06-15 17:30

Siemens AG: EarningsProfitEvent (OCCURRENCE)

BUSINESS WIRE

In fiscal 2016, which ended on September 30, 2016, Siemens Healthineers generated revenue of €13.5 billion and profit of over €2.3 billion and has about 46,000 employees worldwide.



FSLR CRED

\$37.56

\$36.65 -2.48%

\$37.56

2017-06-09 08:00

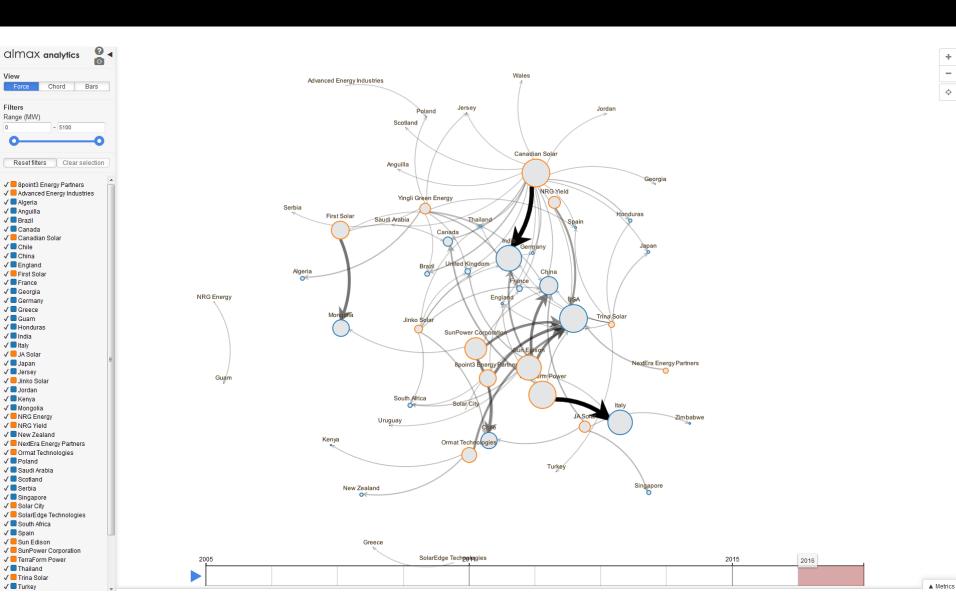
First Solar: CreditGranted (CLOSING)

BUSINESS WIRE

First Solar Secures Syndicated Development Loan Facility from Mizuho Bank for Utility-Scale Solar Projects in Japan 2017-06-09T06:00:00:00.000Z [...] This financing represents the first syndicated solar project development loan facility arranged and participated in by Mizuho Bank, and it is the third loan facility First Solar has secured with Mizuho Bank. [...] First Solar Secures Syndicated Development Loan Facility from Mizuho Bank for Utility-Scale Solar Projects in Japan

Context IV





econob.com

Implicit Information I



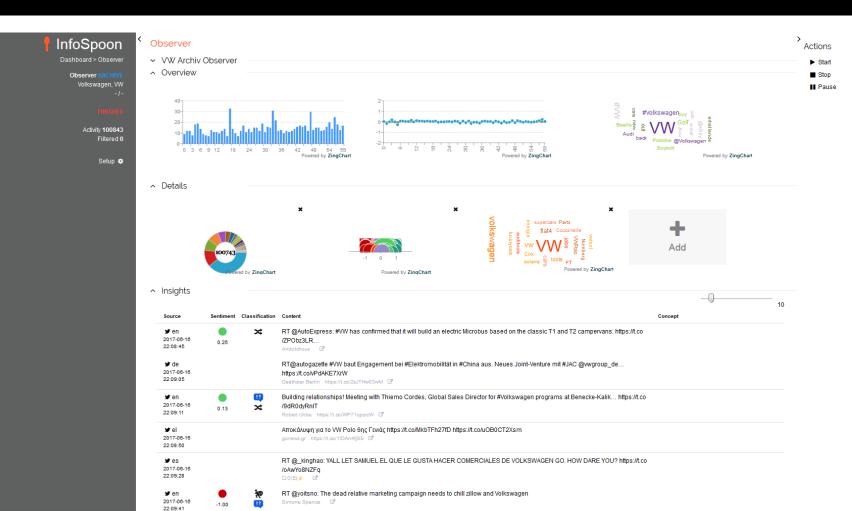
Goals

Interprete, Decompose, Classify

Tweet	Topic	Class	Eval
@Cheeky_Blobfish a drop of just 25% in sales would cost the German auto industry about 5 billion pounds that ginna hurt any economy 2016/11/19 16:38:31 (165ms), mick	Sales	Buy / Sell	-0.27
German economy creates more jobs, but employment growth slows Related Articles: https://t.co/ 0ekUh2ZVJw https://t.co/YrXakcxA6Z 2016/11/18 17:24:34 (386ms), Business News	Labor Market	Global Economy	-0.50
RT @shelleypetersen: German economic growth to be slower for rest of 2016: ministry https://t.co/7FbszRazeU healthinnovations #pharma #ban 2016/11/18 17:02:11 (460ms), meeeh	Growth	Global Economy	-0.18
German exports to UK, U.S. fall sharply in third quarter https://t.co/WOwt59hFJ2 https://t.co/SiXhzEmOW1 2016/11/18 16:06:02 (208ms), Vanilla Bizcotti, Menasha, WI	Exports	Global Economy	-0.75
Performance still good despite Brexit – German economy ministry https://t.co/rJZwHOgGPA 2016/11/18 07:37:26 (562ms), Orix Capital Trading, Japan	Performance	Trading	0.66
RT @OlafGersemann: This just in: Inflation in #Germany was .8% yoy in October, hitting a two-year high, @destatis reports. Germany OlafGersemann,destatis 2016/11/11 09:01:54 (424ms), Isabel Schnabel, Bonn, Germany	Inflation	Global Economy	-0.25

Implicit Information II





If you drive a VW bug you probably support the ghost of Hitler.

@La_ChicaBonitaa Not a lot tbh . I have a Jetta Volkswagen so they don't waste a lot of gas

Logout 🕩

🔰 en

2017-06-16

2017-06-16

22:09:38

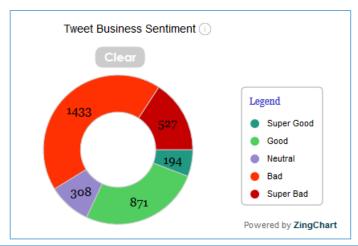
22:10:02 # en -0.25

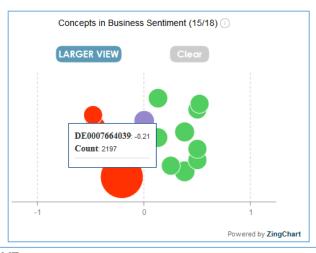
1.00

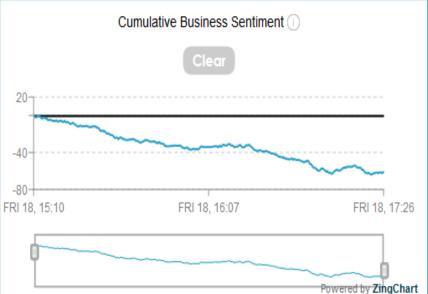
Implicit Information III



Volkswagen (VOW3, DE0007664039)











Findings & Background



- Findings
 - No One-Fits-All
 - Different Sources → Different Goals
 - Tailored Processing Steps & Pipelines
 - Augmentation, Extraction, Interpretation → Take Actions
 - NLP Middle Layer
 - Text Processing + Application-specific Aggregation → Backend Unit
 - Application on Top
 - Varying Quality Requirements
- LingRep TextAnalytics
 - Customizable, light-weight, simple API
 - Proven technology in
 - Finance, Insurance, eHealth, Communications, Marketing

http://lingrep.com, http://processing.lingrep.com

Take Away Messages



- Trading on Textual Information
 - Financial Expertise Essential
 - Sources + Experience + Impact
 - Clear Application Goals Required
 - Analytics
 - Even **Small Mistakes are Expensive**
 - High Risk

→ No Absolute Truth, but Good Indiction on what has proven well

Thank you!



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