Crowd View: Converting Investors' Opinions into Indicators

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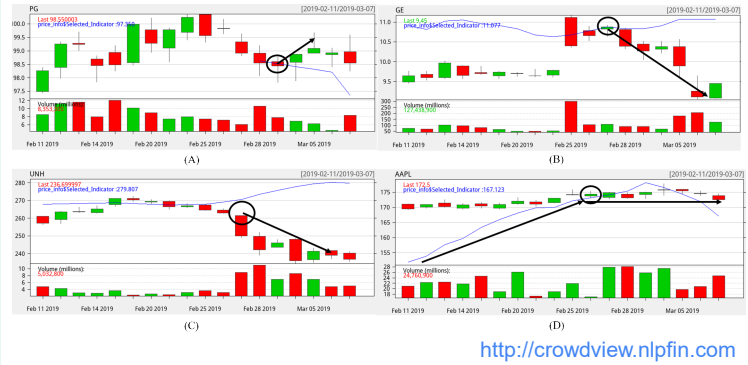[3]MOST Joint Research Center for AI Technology and All Vista Healthcare, Taiwan

Fine-Grained Opinion on Social Trading Platforms

Bullish — Apr 26th, 1:39 am
$TSLA 256 Break-out thru 50 & 200- DMA (197-230) upper head res (274-279) Short squeeze in progress Nr term obj: 310 Stop loss:239
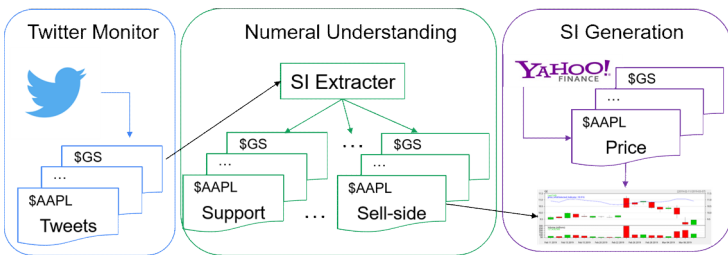
Bullish — Apr 12th, 7:02 pm
$AAPL support identified $198.8 ... next move to $215

Bearish — Apr 12th, 7:02 pm
$TVIX making a new 52 week low.

Convert Crowd Opinions into Leading Indicator

http://crowdview.nlpfin.com

System Flowchart

Twitter Monitor — Numeral Understanding (SI Extracter) — SI Generation (Yahoo Finance, $AAPL Price)

Numeral Understanding
Numerals in financial tweets can be extended into 17 fine-grained meanings.

Price Target, Support and Resistance, Buying price, Selling price

State-of-the-art

Subtask 1			Subtask 2		
Submission ID	Micro F1 (%)	Macro F1 (%)	Submission ID	Micro F1 (%)	Macro F1 (%)
Fortia1 - 1	93.94	90.05	Fortia1 - 2	87.17	82.40
Fortia1 - 2	93.70	88.98	Fortia1 - 1	86.53	80.49
DeepMRT - 1	91.87	87.94	DeepMRT - 1	83.03	77.90
DeepMRT - 2	91.16	84.72	DeepMRT - 2	81.27	75.59
ASNLU - 2	89.72	80.93	aiai - 1	80.24	74.11
ASNLU - 1	89.40	79.96	aiai - 2	80.64	73.43
ZHAW - 2	86.45	79.27	ASNLU - 1	79.12	72.51
Fortia2 - 1	89.88	79.26	ASNLU - 2	77.37	70.09
aiai - 1	86.45	78.59	Fortia2 - 2	77.05	68.86
aiai - 2	87.41	78.04	Fortia2 - 1	79.28	68.33
ZHAW - 1	84.78	75.40	ZHAW - 2	75.54	66.44
WUST	74.02	63.71	ZHAW - 1	72.67	64.84
BRNIR - 1	74.27	63.53	Stark - 1	69.08	56.83
Stark - 1	78.01	61.75	WUST	60.88	52.93
BRNIR - 2	72.91	58.54	BRNIR - 1	63.67	51.90
word-based CNN	55.90	51.67	BRNIR - 2	61.99	47.14
			char-based CNN	43.75	31.12

Overview of the NTCIR-14 FinNum Task

Comparable to Professional Analysts

	Crowd	Analyst
Average difference	13.17%	6.75%
Achieving rate	67.03%	74.73%
Achieving duration	3.38 months	2.46 months
Average return	4.86%	2.93%

Progressive

	Crowd	Analyst
Winning ratio	68.13%	71.43%
Max profit	52.17%	17.23%
Max drawdown	-11.82%	-14.10%
Average profit	11.08%	6.42%
Average loss	-8.43%	-8.40%

Profitable

Test of Informativeness

α \ s	3	5	10
0.005	**66.67**/ 19.23	**60.00**/ 29.17	40.00/ 21.74
0.010	44.44/ **35.09**	29.17/ **30.19**	30.00/ 24.49
0.015	14.64/ 18.18	18.92/ **22.34**	18.75/ 20.00

Table 2: KS-test results of support/resistance.

G \ s	3	5	10
0.03	4.82/ 3.23	**8.87**/ 6.23	**8.33**/ 5.26
0.04	**8.90**/ 3.58	5.68/ 5.63	**8.66**/ 3.86
0.05	3.13/ 2.22	**7.60**/ 3.18	**12.50**/ 5.85

Table 3: KS-test results of buy-side/sell-side cost.

Provide incremental information for trading

FinNum-2 in NTCIR-2020

Semantic Understanding

Numeral Attachment:
$NE OK NE, last time oil was over $65 you were close to $8. Giddy-up…

http://finnum.nlpfin.com

Further Works

Market Sentiment ≠ General Sentiment

	MS	SWN
buy	0.59	0.00
sell	-0.98	0.00
call	0.44	0.00
put	-0.49	0.00
undervalued	1.21	-0.38
overvalued	-3.42	0.25

	Buy	Sell
Call	+	-
Put	-	+

http://ntusdfin.nlpfin.com

Numeracy-600K

S&P 500 <.SPX> UP 1.53 POINTS, AT _____
DOW JONES<.DJI> UP 8.70 POINTS, AT _____
U.S. Q3 GDP rises _____ pct

http://numeracy600k.nlpfin.com

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