Overview of the NTCIR-15 FinNum-2 Task
Numeral Attachment in Financial Tweets

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FinNum-1: Fine-Grained Opinion on Social Trading Platforms

Apr 26th, 1:39 am

Bullish

$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

Apr 12th, 7:02 pm

Bullish

$AAPL support identified $198.8 ... next move to $215

5

Apr 12th, 7:02 pm

Bearish

$TVIX making a new 52 week low.

4

1

Convert Crowd Opinions into Leading Indicator
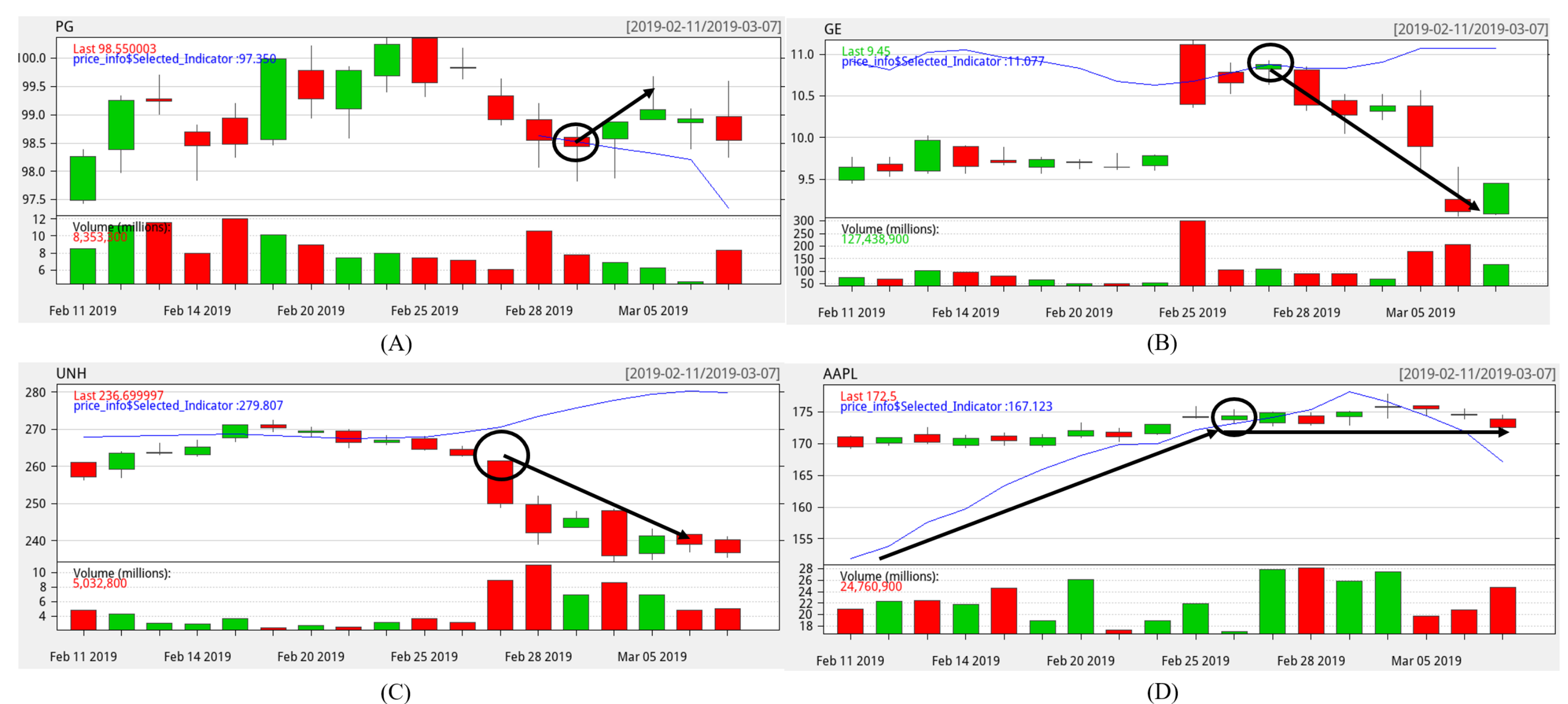
Crowd View: Converting Investors' Opinions into Indicators.

FinNum-2: Numeral Attachment

Attached

$NE, last time oil was over **$65** you were close to **$8**

Not Attached

Attached   Attached

Guess who sold off about **$800** million in **$MDLZ** after losing about **$1** billion on **$VRX**???

Not Attached

Multi 38% — Cashtag — Single 62%

Single 30% — Numeral — Multi 70%

Numeral attachment with auxiliary tasks

SIGIR 2019

Participants

13 Teams including 15 Institutions from 7 Countries

Experimental Results

Team	Method	Dev.	Test
Baseline - 1	Majority	44.88	44.93
CYUT-1	-	48.64	48.02
WUST	SVM	82.91	54.43
BTBCH-1	-	100.00	57.19
BTBCH-2	-	99.68	58.00
TMUNLP-3	BERT-CNN + Dep.	87.34	58.40
TMUNLP-2	BERT-BiLSTM + Dep.	85.17	59.77
IIITH-1	-	96.16	62.81
Baseline - 2	Caps-m	79.27	63.37
IIITH-3	-	93.99	64.16
TMUNLP-1	BERT-BiLSTM	87.02	64.76
MIG-1	BERT-BiLSTM + CW	84.46	68.27
MIG-3	BERT + CW	90.69	68.37
TLR-2	RoBERTa	87.81	68.64
MIG-2	BERT-BiLSTM + CW	85.77	68.72
IIITH-2	-	96.23	71.11
TLR-1	BERT	88.26	71.41
CYUT-2	RoBERTa	95.99	71.90
TLR-3	Ensemble	88.87	**73.95**

Error Analysis

- Distribution of correct rate

Correct Rate	# of Instance	%
0.00%	107	5.07%
5.56%	46	2.18%
11.11%	43	2.04%
16.67%	32	1.52%
22.22%	15	0.71%
27.78%	10	0.47%
33.33%	17	0.81%
38.89%	18	0.85%
44.44%	8	0.38%
50.00%	23	1.09%
55.56%	13	0.62%
61.11%	17	0.81%
66.67%	24	1.14%
72.22%	38	1.80%
77.78%	33	1.56%
83.33%	110	5.22%
88.89%	216	10.24%
94.44%	1339	63.49%

- Averaged correct rate on different kinds of in-stances

	Single-cashtag	Multi-cashtag
Single-numeral	79.78%	55.17%
Multi-numeral	81.68%	67.46%

- Attached/**Not Attached** of instances with correct rate lower than 20%

	Single-cashtag	Multi-cashtag
Single-numeral	0/64	0/10
Multi-numeral	0/152	0/2

FinNum-3: Investor's and Manager's Fine-grained Claim Detection

- Argument mining in finance

- Over **58.47%** of sentences in analysis report contain at least one numeral

- Investors always make a claim **with an estimation**
  - **(X) We estimate that the sales may growth**
  - **(O) We estimate that the sales growth rate may exceed 40%**

- The importance of fine-grained claims and the numerals.
  - We estimate that the sales growth rate may exceed 5%
  - We estimate that the sales growth rate may exceed 40%

- Manager's and Investor's Fine-grained Claim Detection
  - **Chinese** financial analysis reports (**investor**)
  - **English** earnings conference call (**manager**)

- Information in NumClaim 2.0
  - Given
    - Target numeral
    - Context of Target numeral
  - Model Output
    - Category of target numeral (FinNum-1)
    - In-claim or out-of-claim (FinNum-3)

NumClaim: Investor's Fine-grained Claim Detection

CIKM 2020 19-23 OCTOBER Online

FinTech on the Web Workshop 2021

FinTech is an emerging and popular topic in both financial and engineering domains. Internet and mobile are key points in the FinTech revolution. In Bank 3.0, financial institutions put some financial service functions into their websites, and the customers can do some financial operations such as transfer by themselves via the site. In the past five years, mobile banking is all the rage as mobile devices become more and more prevalent. Some infrastructures for developing Bank 4.0 have already been done. We think that it is a good time to hold a forum to discuss the possible application scenarios of using the information from the Web in FinTech field.

https://finweb.nlpfin.com

THE WEB CONFERENCE

National Taiwan University

NATIONAL CHENGCHI UNIVERSITY

科技部人工智慧技術
暨全幅健康照護聯合研究中心
Most Joint Research Center for AI Technology and All Vista Healthcare

AIRC

NLP Lab
National Taiwan University