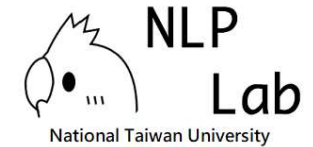
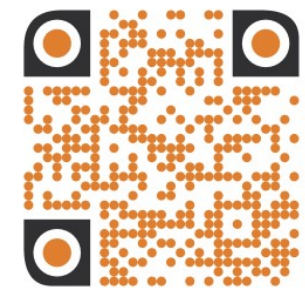


Next Cashtag Prediction on Social Trading Platforms with Auxiliary Tasks



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ALL VISTA HEALTHCARE

Task Design

The interests of investors



Bullish

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



Bearish

\$TVIX making a new 52 week low.



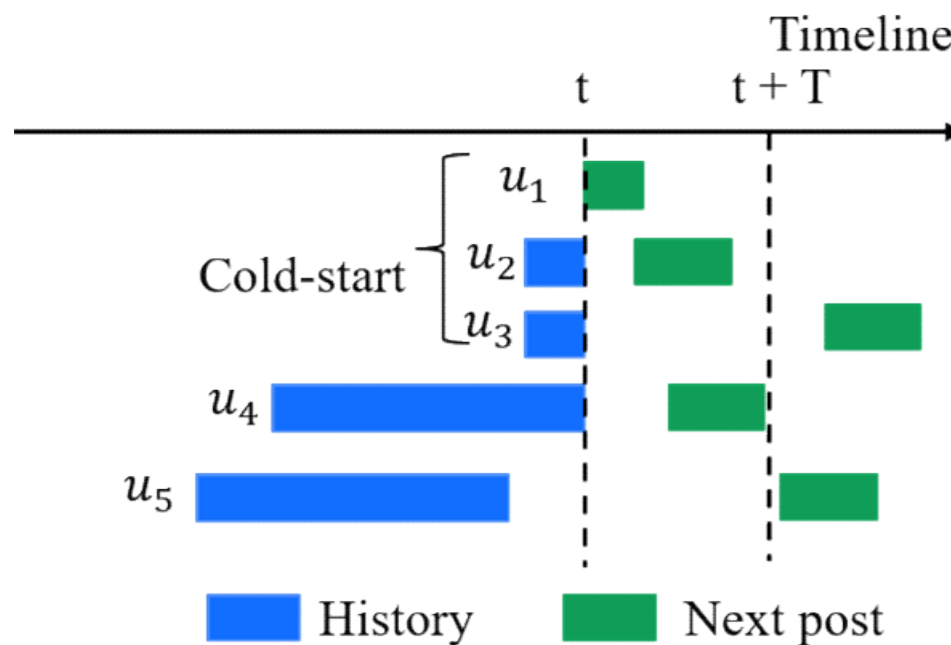
Bullish

\$SPX 3145 is still possible, the level is the 1.618% extension within The Grand Super Cycle, Ideal Target.



Next Cashtag Prediction

We use the post(s) of $user_i$ at time t to represent the preference of user $user_i$. With the help of this information, we predict the cashtags that $user_i$ will mention within next 5 days.



Auxiliary Task

- **Hottest cashtag prediction (A_{hot})**

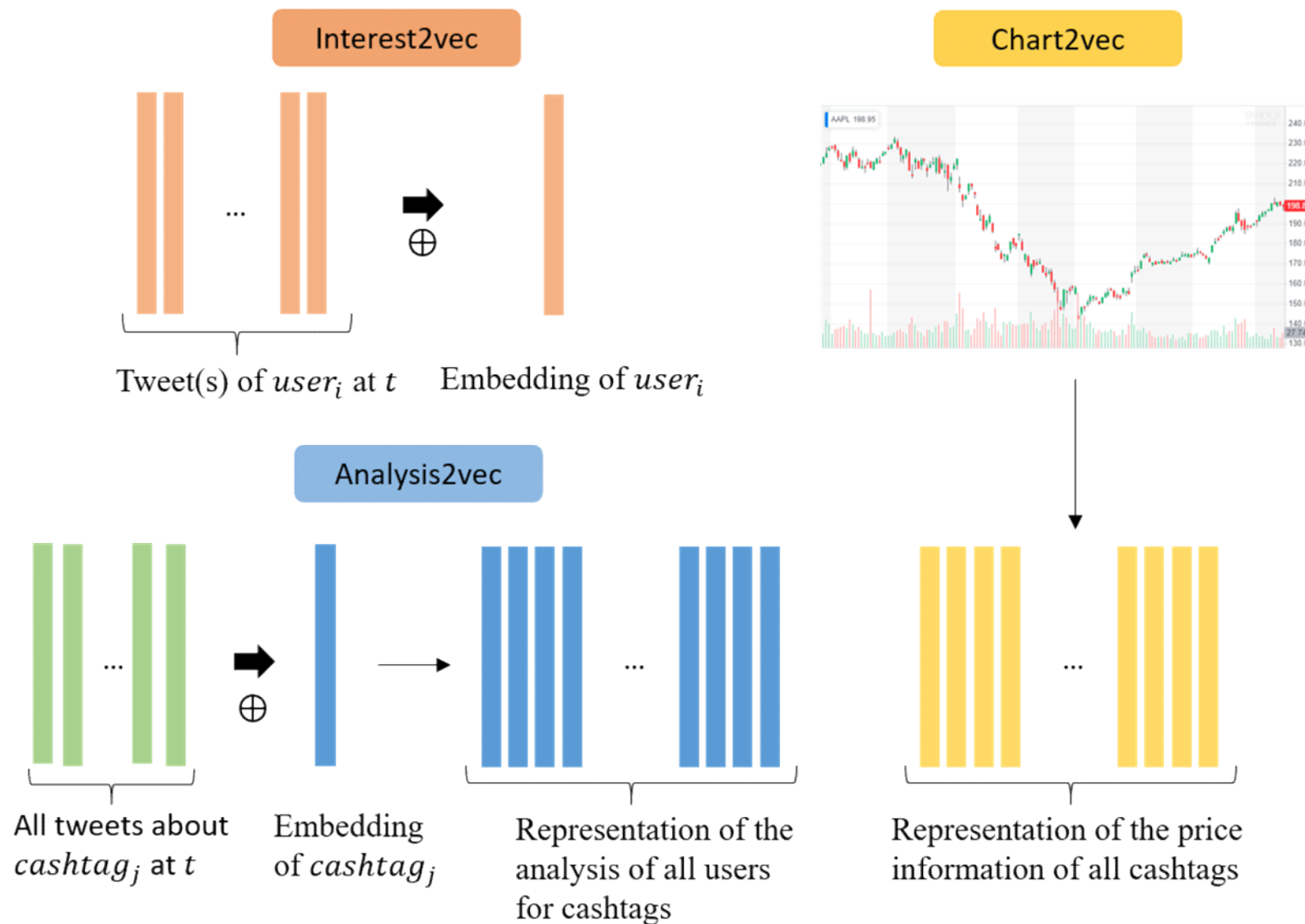
This task is aimed at predicting which cashtag will have the highest growth rate of being mentioned within the following T days.

- **Most profitable cashtag prediction (A_{profit})**

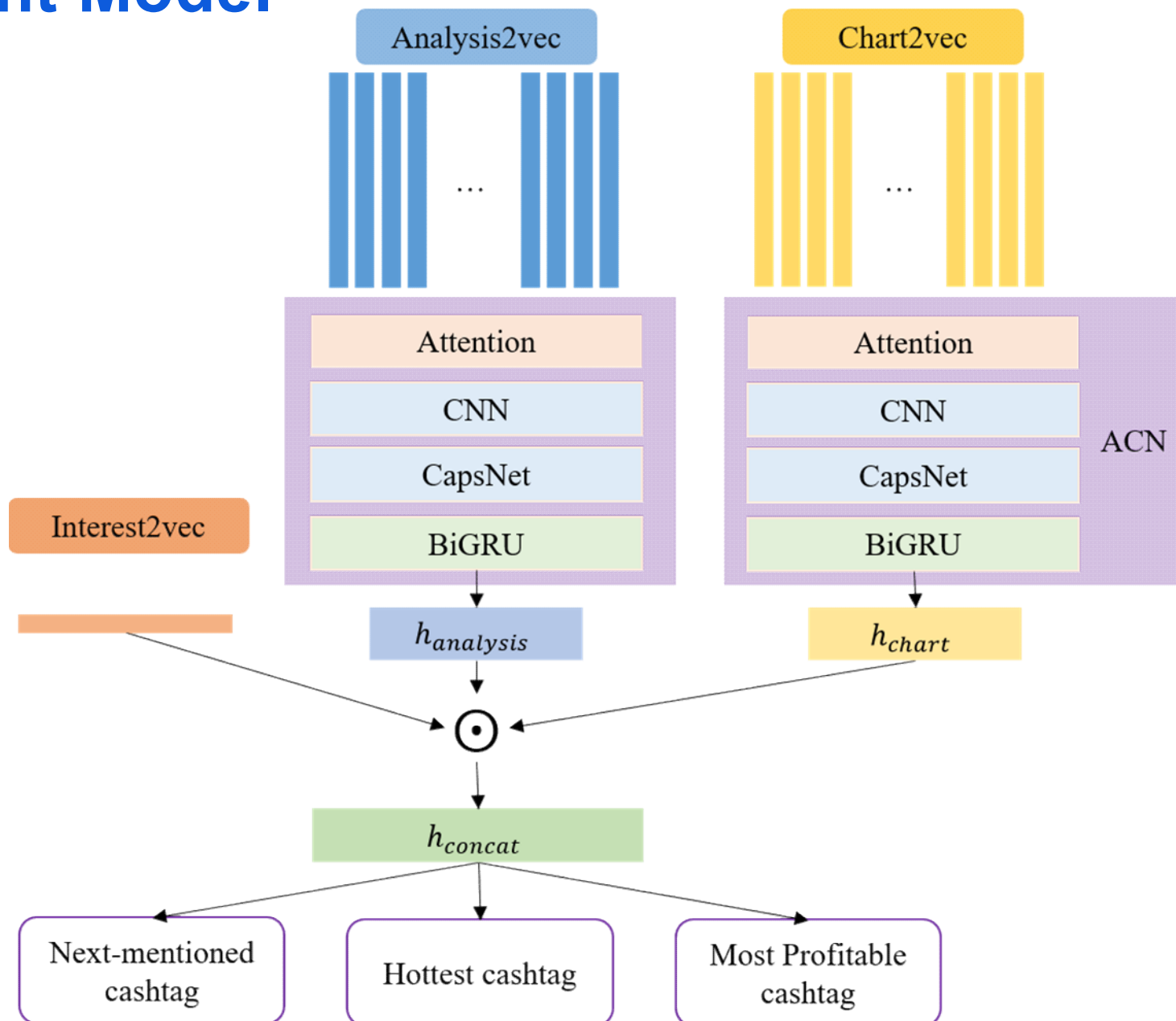
This task is aimed at predicting which cashtag will have the highest return within the following T days.

Representation & Model

Representation of Interest, Analysis, Chart



Attentive Capsule Network (ACN) & The Joint Model



Experiment

Dataset

	Statistic
Number of users in the experimental set	126,369
Avg. number of cashtags mentioned per tweet	4.85
The first date in the training set	May 27, 2018
The last date in the training set	Jan. 2, 2019
Number of instances in the training set	97,740
The first date in the test set	Jan. 3, 2019
The last date in the test set	Feb. 23, 2019
Number of instances in the test set	21,538

Experimental Results

Model	<i>hit@2</i>	<i>hit@3</i>	<i>hit@5</i>
Joint ACN	69.03%	74.01%	80.33%
-Attention	67.30%	71.95%	78.04%
-CapsNet	66.90%	72.05%	78.87%
- A_{hot}	68.96%	73.78%	80.24%
- A_{profit}	68.74%	73.60%	79.89%

Conclusion & Future works

Experimental results show

- the effectiveness of the proposed ACN model
- the usefulness of the corresponding auxiliary tasks

The proposed task can be extended to

- user grouping
- dynamic interest prediction
- market information prediction such as price movement prediction and market volatility prediction

FinNum-2: Numeral Attachment in Financial Tweets

Numeral Attachment:

\$NE OK NE, last time **oil** was over **\$65** you were close to **\$8**. Giddy-up...

- Shared task in NTCIR 2020
- Identify the relation between the cashtag and the numeral
- The pilot dataset is available now.
- More than 15,000 instances in 10,000 unique tweets will be available.
- Macro-F1 score is adopted for evaluating the experimental results.



Thank you!

