Intent Classification and Slot Filling

300232-ยงสุข

Intent Classification

Prepossessing

```
train_df.head(10)
```

	text	intent
0	will it be rainy in tenino	GetWeather
1	add steve albini album to my psychedelic rock ...	AddToPlaylist
2	book a table for 3 at one of the restaurants i...	BookRestaurant
3	what s the weather forecast for belknap	GetWeather
4	play fereydoun farrokhzad best track	PlayMusic
5	put kan mikami on pre-party r&b jams	AddToPlaylist
6	look for the chu chu and the philly flash picture	SearchCreativeWork
7	play the god that failed on vimeo	PlayMusic
8	play a soundtrack by mike hindert on spotify	PlayMusic
9	want to watch the tv show treeful of starling	SearchCreativeWork

```
val_df.head(10)
```

	text	intent
0	i d like to see the show onion sportsdome	SearchCreativeWork
1	give the current book 4 stars	RateBook
2	reserve a table for 8 in neighboring hitchland	BookRestaurant
3	show creative video game the boat is full	SearchCreativeWork
4	put once bitten twice bitten into the pulse of...	AddToPlaylist
5	what time is the ladies diplomat playing	SearchScreeningEvent
6	i want to book a bistro that serves pasta sala...	BookRestaurant
7	play a song from 2003	PlayMusic
8	rate current novel two stars	RateBook
9	add the field album to my romantic evening album	AddToPlaylist

Model

'bert_en_uncased_L-12_H-768_A-12'

from

TensorFlow Hub

Accuracy: 0.98

Slot Filling

text →

```python
def word2features(sent, i):
    sent = sent.split(" ")
    word = sent[i]
    global STOP_WORDS

    features = {
        'bias': 1.0,
        'word.lower()': word.lower(),
        'word[-3:]': word[-3:],
        'word[-2:]': word[-2:],
        'word.isupper()': word.isupper(),
        'word.istitle()': word.istitle(),
        'word.isdigit()': word.isdigit(),
        'word.length':len(word),
        'word.stop_word':word.lower() in STOP_WORDS,
    }
```

→

```
[{'bias': 1.0,
  'word.lower()': 'will',
  'word[-3:]': 'ill',
  'word[-2:]': 'll',
  'word.isupper()': False,
  'word.istitle()': False,
  'word.isdigit()': False,
  'word.length': 4,
  'word.stop_word': True,
  'BOS': True,
  '+1:word.lower()': 'it',
  '+1:word.istitle()': False,
  '+1:word.isupper()': False,
  '+1:word.length': 2,
  '+1:word.stop_words': True},
```

slots →

```
[['O', 'O', 'O', 'B-condition_description', 'O', 'B-city'],
 ['O',
  'B-artist',
  'I-artist',
  'B-music_item',
  'O',
  'B-playlist_owner',
  'B-playlist',
  'I-playlist',
  'O'],
```

Model

sklearn_crfsuite.CRF
algorithm='lbfgs'

Accuracy: 0.93226