FLIP01 MIDTERM PRESENTATION

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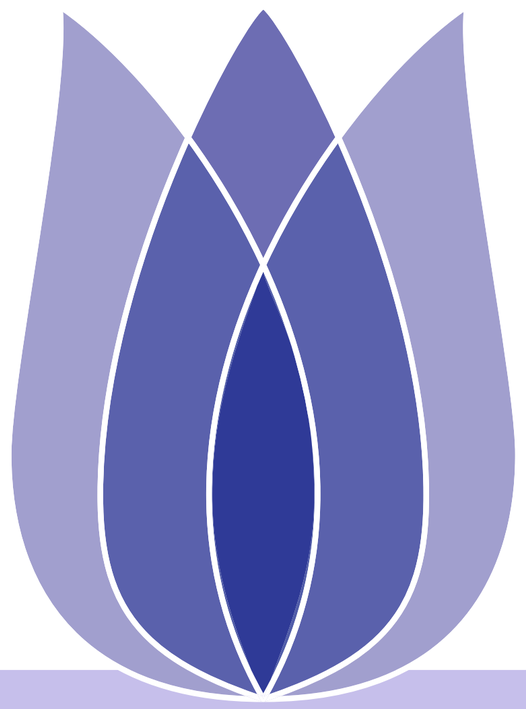

Overview

Problem Statement

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Thanks for watching

Problem Statement

Problem Definition

Some of our strongest geographic and cultural associations are tied to a region's local foods. This playground competitions asks you to predict the category of a dish's cuisine given a list of its ingredients.

Data Set

- train data

Table 1: The head of the train data

	cuisine	id	igredients
0	greek	10259	[romaine lettuce, black olives, grape tomatoes...
1	southern_us	25693	[plain flour, ground pepper, salt, tomatoes, g...
2	filipino	20130	[eggs, pepper, salt, mayonaise, cooking oil, g...
3	indian	22213	[water, vegetable oil, wheat, salt]
4	indian	13162	[black pepper, shallots, cornflour, cayenne pe...

- Display the data set

Table 2: The head of the test data

	id	igredients
0	18009	[baking powder, eggs, all-purpose flour, raisi...
1	28583	[sugar, egg yolks, corn starch, cream of tarta...
2	41580	[sausage links, fennel bulb, fronds, olive oil...
3	29752	[meat cuts, file powder, smoked sausage, okra,...
4	35687	[ground black pepper, salt, sausage casings, l...

Text feature extraction

CountVectorizer

By using CountVectorizer to transform the text data to be the word frequency matrix. And we can use tha toarray to help us.

The output example:

```
array([[0,0,0,...0,0,0],
       [0,0,0,...0,0,0],
       [0,0,0,...0,0,0],
       ...
       [0,0,0,...0,0,0],
       [0,0,0,...0,0,0],
       [0,0,0,...0,0,0]],
)
```

Modeling

Modeling

- problem analysis

  This is a text classification problem.Machine learning has many ways to solve text classification problems.

- Random forest

- SVM

Random forest

- Divide training data (train_test_split)
- Do a model training
- Model evaluation
- Model prediction

SVM

- Divide training data (train_test_split)
- Do a model training
- Model evaluation
- Model prediction

The score of Random forest and SVM

Table 3: The score of 2 model

	model	score
1	Random forest	0.71
2	SVM	0.79

Forecasting

By using the above model, the prediction classification results can be obtained.

The output is:

array(['southern_us', 'southern_us', 'italian', ..., 'italian', 'southern_us', 'mexican'], dtype=object)

Conclusion

Conclusion

Text feature extraction Using the CountVectorizer and TfidfVectorizer to help us process the text data.If the text data is Chinese, you can use jieba for word segmentation.

Modeling There are many ways to deal with text classification in machine learning Can be appropriately selected on combination with the problem.

Prospcting I woule like to select multiple models for comparison later.For example, Naive Bayes, there are some deep learning methods (RNN, CNN)

Thanks for watching