

# Instruction

November 27, 2014

## 1 What's in the Package

### 1.1 src/

This folder contains JAVA source codes.

### 1.2 src/resources

This folder contains all the resources required to run the package, including:

1. \*.ann files. Serialized annotators. city.ann annotates cities; SP.ann annotates states in US and provinces in Canada; country.ann annotates countries.
2. hyer.txt. A Gazetteer list containing information about all countries, SPs and cities.
3. model.ritter\_ptb\_alldata\_fixed.20130723.txt. This file is required to run the Tweet POS tagger.
4. Training and testing datasets. Each dataset contains a folder of texts, and a .labels file which includes all the hand-annotated labels..
  - train/ and train.labels. The totality of all training data, containing 6000 tweets. They have been used to train the \*.ann files listed above.
  - small/ and small.labels. A small proportion of all training data, containing around 1400 tweets. They are here for a faster performance evaluation experiment.
  - disam/ and disam.labels. 300 tweets not only annotated with a location type, but also with their actual locations(denoted by an ID). They are used to test the performance of the location disambiguator.

### 1.3 lib/

All the dependencies required to run this package. They should be added to the CLASS-PATH of the application.

## 2 Apply annotator

To apply saved annotator, simply follow these steps:

1. Call the method **crf.ApplyModel.loadModel** to load an annotator.
2. Put the Tweets ready for annotation in an **ArrayList<String>**.
3. Call the method **crf.ApplyModel.annotate** to annotate those tweets. This method returns an **edu.cmu.minorthird.text.BasicTextLabels** object.
4. Instantiate a **gazetteer.Gazetteer** by calling its constructor with the directory to **hyer.txt** as parameter.
5. Call the method **crf.ApplyModel.disambiguate** to find true locations for locations annotated.
6. First, consider the Tweets a series of contiguous Spans<sup>1</sup> of tokens.

The **edu.cmu.minorthird.text.BasicTextLabels** object stores information about labels of those spans. There are two kinds of labels, "type" and "property". In this case, once a span is annotated as a location, it shall have a "type", which is either "city", "SP" or "country", depending on which annotator is loaded beforehand; furthermore, once disambiguation of a span is successful, it shall have a "property", the name of the "property" being "trueLoc", the value of the "property" being the id of the location.

For instance, the span "London" can have a "type" that is "city", and a "property" named "trueLoc" that is "62035".

The methods that manipulate **edu.cmu.minorthird.text.BasicTextLabels** object can be found here <sup>2</sup>. But ideally, one only need define

```
Iterator<Span> i = labels.instanceIterator("city")
```

to retrieve all spans annotated as a "city"; and define

```
Iterator<Span> i = labels.getSpansWithProperty("trueLoc")
```

to retrieve all spans disambiguated, then

```
Location loc = gazetter.getByID(labels.getProperty(i.next(), "trueLoc"))
```

shall return a corresponding Location object.

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<sup>1</sup><http://teamcohen.github.io/MinorThird/javadoc/edu/cmu/minorthird/text/Span.html>

<sup>2</sup><http://teamcohen.github.io/MinorThird/javadoc/edu/cmu/minorthird/text/BasicTextLabels.html>