Spacy-pos-tagging

September 26, 2023

[1]:
```
! pip install spacy
```

Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: spacy in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (3.6.1)
Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.11 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from spacy)
(3.0.12)
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from spacy)
(1.0.5)
Requirement already satisfied: murmurhash<1.1.0,>=0.28.0 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from spacy)
(1.0.10)
Requirement already satisfied: cymem<2.1.0,>=2.0.2 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from spacy)
(2.0.8)
Requirement already satisfied: preshed<3.1.0,>=3.0.2 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from spacy)
(3.0.9)
Requirement already satisfied: thinc<8.2.0,>=8.1.8 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from spacy)
(8.1.12)
Requirement already satisfied: wasabi<1.2.0,>=0.9.1 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from spacy)
(1.1.2)
Requirement already satisfied: srsly<3.0.0,>=2.4.3 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from spacy)
(2.4.8)
Requirement already satisfied: catalogue<2.1.0,>=2.0.6 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from spacy)
(2.0.10)
Requirement already satisfied: typer<0.10.0,>=0.3.0 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from spacy)
(0.9.0)
Requirement already satisfied: pathy>=0.10.0 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from spacy)
(0.10.2)

Requirement already satisfied: smart-open<7.0.0,>=5.2.1 in
d:\pkg\anaconda\lib\site-packages (from spacy) (5.2.1)
Requirement already satisfied: tqdm<5.0.0,>=4.38.0 in d:\pkg\anaconda\lib\site-packages (from spacy) (4.65.0)
Requirement already satisfied: numpy>=1.15.0 in d:\pkg\anaconda\lib\site-packages (from spacy) (1.24.3)
Requirement already satisfied: requests<3.0.0,>=2.13.0 in
d:\pkg\anaconda\lib\site-packages (from spacy) (2.31.0)
Requirement already satisfied: pydantic!=1.8,!=1.8.1,<3.0.0,>=1.7.4 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from spacy)
(2.3.0)
Requirement already satisfied: jinja2 in d:\pkg\anaconda\lib\site-packages (from
spacy) (3.1.2)
Requirement already satisfied: setuptools in d:\pkg\anaconda\lib\site-packages
(from spacy) (68.0.0)
Requirement already satisfied: packaging>=20.0 in d:\pkg\anaconda\lib\site-packages (from spacy) (23.0)
Requirement already satisfied: langcodes<4.0.0,>=3.2.0 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from spacy)
(3.3.0)
Requirement already satisfied: annotated-types>=0.4.0 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
pydantic!=1.8,!=1.8.1,<3.0.0,>=1.7.4->spacy) (0.5.0)
Requirement already satisfied: pydantic-core==2.6.3 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
pydantic!=1.8,!=1.8.1,<3.0.0,>=1.7.4->spacy) (2.6.3)
Requirement already satisfied: typing-extensions>=4.6.1 in
d:\pkg\anaconda\lib\site-packages (from
pydantic!=1.8,!=1.8.1,<3.0.0,>=1.7.4->spacy) (4.7.1)
Requirement already satisfied: charset-normalizer<4,>=2 in
d:\pkg\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy) (2.0.4)
Requirement already satisfied: idna<4,>=2.5 in d:\pkg\anaconda\lib\site-packages
(from requests<3.0.0,>=2.13.0->spacy) (3.4)
Requirement already satisfied: urllib3<3,>=1.21.1 in d:\pkg\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy) (1.26.16)
Requirement already satisfied: certifi>=2017.4.17 in d:\pkg\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy) (2023.7.22)
Requirement already satisfied: blis<0.8.0,>=0.7.8 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
thinc<8.2.0,>=8.1.8->spacy) (0.7.11)
Requirement already satisfied: confection<1.0.0,>=0.0.1 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
thinc<8.2.0,>=8.1.8->spacy) (0.1.3)
Requirement already satisfied: colorama in d:\pkg\anaconda\lib\site-packages
(from tqdm<5.0.0,>=4.38.0->spacy) (0.4.6)
Requirement already satisfied: click<9.0.0,>=7.1.1 in d:\pkg\anaconda\lib\site-packages (from typer<0.10.0,>=0.3.0->spacy) (8.0.4)
Requirement already satisfied: MarkupSafe>=2.0 in d:\pkg\anaconda\lib\site-

packages (from jinja2->spacy) (2.1.1)

```
[10]: import spacy
```

```
[11]: !python -m spacy download en_core_web_sm
```

```
Defaulting to user installation because normal site-packages is not writeable
Collecting en-core-web-sm==3.6.0
  Downloading https://github.com/explosion/spacy-
models/releases/download/en_core_web_sm-3.6.0/en_core_web_sm-3.6.0-py3-none-
any.whl (12.8 MB)
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Requirement already satisfied: spacy<3.7.0,>=3.6.0 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from en-core-web-
sm==3.6.0) (3.6.1)
Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.11 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (3.0.12)
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (1.0.5)
Requirement already satisfied: murmurhash<1.1.0,>=0.28.0 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (1.0.10)
Requirement already satisfied: cymem<2.1.0,>=2.0.2 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (2.0.8)
Requirement already satisfied: preshed<3.1.0,>=3.0.2 in

c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (3.0.9)
Requirement already satisfied: thinc<8.2.0,>=8.1.8 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (8.1.12)
Requirement already satisfied: wasabi<1.2.0,>=0.9.1 in
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spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (1.1.2)
Requirement already satisfied: srsly<3.0.0,>=2.4.3 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (2.4.8)
Requirement already satisfied: catalogue<2.1.0,>=2.0.6 in
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Requirement already satisfied: typer<0.10.0,>=0.3.0 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (0.9.0)
Requirement already satisfied: pathy>=0.10.0 in
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spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (0.10.2)
Requirement already satisfied: smart-open<7.0.0,>=5.2.1 in
d:\pkg\anaconda\lib\site-packages (from spacy<3.7.0,>=3.6.0->en-core-web-
sm==3.6.0) (5.2.1)
Requirement already satisfied: tqdm<5.0.0,>=4.38.0 in d:\pkg\anaconda\lib\site-
packages (from spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (4.65.0)
Requirement already satisfied: numpy>=1.15.0 in d:\pkg\anaconda\lib\site-
packages (from spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (1.24.3)
Requirement already satisfied: requests<3.0.0,>=2.13.0 in
d:\pkg\anaconda\lib\site-packages (from spacy<3.7.0,>=3.6.0->en-core-web-
sm==3.6.0) (2.31.0)
Requirement already satisfied: pydantic!=1.8,!=1.8.1,<3.0.0,>=1.7.4 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (2.3.0)
Requirement already satisfied: jinja2 in d:\pkg\anaconda\lib\site-packages (from
spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (3.1.2)
Requirement already satisfied: setuptools in d:\pkg\anaconda\lib\site-packages
(from spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (68.0.0)
Requirement already satisfied: packaging>=20.0 in d:\pkg\anaconda\lib\site-
packages (from spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (23.0)
Requirement already satisfied: langcodes<4.0.0,>=3.2.0 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (3.3.0)
Requirement already satisfied: annotated-types>=0.4.0 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
pydantic!=1.8,!=1.8.1,<3.0.0,>=1.7.4->spacy<3.7.0,>=3.6.0->en-core-web-
sm==3.6.0) (0.5.0)
Requirement already satisfied: pydantic-core==2.6.3 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from

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pydantic!=1.8,!=1.8.1,<3.0.0,>=1.7.4->spacy<3.7.0,>=3.6.0->en-core-web-
sm==3.6.0) (2.6.3)
Requirement already satisfied: typing-extensions>=4.6.1 in
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pydantic!=1.8,!=1.8.1,<3.0.0,>=1.7.4->spacy<3.7.0,>=3.6.0->en-core-web-
sm==3.6.0) (4.7.1)
Requirement already satisfied: charset-normalizer<4,>=2 in
d:\pkg\anaconda\lib\site-packages (from
requests<3.0.0,>=2.13.0->spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (2.0.4)
Requirement already satisfied: idna<4,>=2.5 in d:\pkg\anaconda\lib\site-packages
(from requests<3.0.0,>=2.13.0->spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (3.4)
Requirement already satisfied: urllib3<3,>=1.21.1 in d:\pkg\anaconda\lib\site-
packages (from requests<3.0.0,>=2.13.0->spacy<3.7.0,>=3.6.0->en-core-web-
sm==3.6.0) (1.26.16)
Requirement already satisfied: certifi>=2017.4.17 in d:\pkg\anaconda\lib\site-
packages (from requests<3.0.0,>=2.13.0->spacy<3.7.0,>=3.6.0->en-core-web-
sm==3.6.0) (2023.7.22)
Requirement already satisfied: blis<0.8.0,>=0.7.8 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
thinc<8.2.0,>=8.1.8->spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (0.7.11)
Requirement already satisfied: confection<1.0.0,>=0.0.1 in
c:\users\mohsi\appdata\roaming\python\python311\site-packages (from
thinc<8.2.0,>=8.1.8->spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (0.1.3)
Requirement already satisfied: colorama in d:\pkg\anaconda\lib\site-packages
(from tqdm<5.0.0,>=4.38.0->spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (0.4.6)
Requirement already satisfied: click<9.0.0,>=7.1.1 in d:\pkg\anaconda\lib\site-
packages (from typer<0.10.0,>=0.3.0->spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0)
(8.0.4)
Requirement already satisfied: MarkupSafe>=2.0 in d:\pkg\anaconda\lib\site-
packages (from jinja2->spacy<3.7.0,>=3.6.0->en-core-web-sm==3.6.0) (2.1.1)
Installing collected packages: en-core-web-sm
Successfully installed en-core-web-sm-3.6.0
[+] Download and installation successful
You can now load the package via spacy.load('en_core_web_sm')
```

[12]:
```python
import spacy
nlp = spacy.load('en_core_web_sm')
```

[14]:
```python
doc = nlp(u"I Will google about facebook")
```

[15]:
```python
doc.text
```

[15]: `'I Will google about facebook'`

[16]:
```python
doc[-1]
```

[16]: `facebook`

```
[18]: doc[2].pos_
```

```
[18]: 'VERB'
```

```
[19]: doc[2].tag_
```

```
[19]: 'VB'
```

```
[20]: spacy.explain('VB')
```

```
[20]: 'verb, base form'
```

```
[24]: for word in doc:
          print(word.text,"------>", word.pos_,word.tag_,spacy.explain(word.tag))
```

```
I ------> PRON PRP None
Will ------> AUX MD None
google ------> VERB VB None
about ------> ADP IN None
facebook ------> NOUN NN None
```

```
[26]: doc2=nlp(u"I left the room")
      for word in doc2:
          print(word.text,"------>", word.pos_,word.tag_,spacy.explain(word.tag))
```

```
I ------> PRON PRP None
left ------> VERB VBD None
the ------> DET DT None
room ------> NOUN NN None
```

```
C:\Users\mohsi\AppData\Roaming\Python\Python311\site-
packages\spacy\glossary.py:20: UserWarning: [W118] Term '17109001835818727656'
not found in glossary. It may however be explained in documentation for the
corpora used to train the language. Please check `nlp.meta["sources"]` for any
relevant links.
  warnings.warn(Warnings.W118.format(term=term))
C:\Users\mohsi\AppData\Roaming\Python\Python311\site-
packages\spacy\glossary.py:20: UserWarning: [W118] Term '15267657372422890137'
not found in glossary. It may however be explained in documentation for the
corpora used to train the language. Please check `nlp.meta["sources"]` for any
relevant links.
  warnings.warn(Warnings.W118.format(term=term))
```

```
[29]: doc3=nlp(u"I read books on history")
      for word in doc3:
          print(word.text,"------>", word.pos_,word.tag_,spacy.explain(word.tag))
```

```
I ------> PRON PRP None
read ------> VERB VBP None
books ------> NOUN NNS None
```

```
on ------> ADP IN None
history ------> NOUN NN None
```

C:\Users\mohsi\AppData\Roaming\Python\Python311\site-
packages\spacy\glossary.py:20: UserWarning: [W118] Term '9188597074677201817'
not found in glossary. It may however be explained in documentation for the
corpora used to train the language. Please check `nlp.meta["sources"]` for any
relevant links.
  warnings.warn(Warnings.W118.format(term=term))
C:\Users\mohsi\AppData\Roaming\Python\Python311\site-
packages\spacy\glossary.py:20: UserWarning: [W118] Term '783433942507015291' not
found in glossary. It may however be explained in documentation for the corpora
used to train the language. Please check `nlp.meta["sources"]` for any relevant
links.
  warnings.warn(Warnings.W118.format(term=term))

[30]:
```python
doc4=nlp(u"I have read a book on history")
for word in doc4:
    print(word.text,"------>", word.pos_,word.tag_,spacy.explain(word.tag))
```

```
I ------> PRON PRP None
have ------> AUX VBP None
read ------> VERB VBN None
a ------> DET DT None
book ------> NOUN NN None
on ------> ADP IN None
history ------> NOUN NN None
```

C:\Users\mohsi\AppData\Roaming\Python\Python311\site-
packages\spacy\glossary.py:20: UserWarning: [W118] Term '3822385049556375858'
not found in glossary. It may however be explained in documentation for the
corpora used to train the language. Please check `nlp.meta["sources"]` for any
relevant links.
  warnings.warn(Warnings.W118.format(term=term))

[32]:
```python
doc6 = nlp(u"The quick brown for jumped over the lazy dog")
```

[33]:
```python
from spacy import displacy
```

[34]:
```python
displacy.render(doc6,style='dep',jupyter=True)
```

```
<IPython.core.display.HTML object>
```

[35]:
```python
options= {'distance':80,
          'compact':True,
          'color':'#fff',
          'bg':'#00a65a'}
```

[37]:
```python
displacy.render(doc6,style='dep',jupyter=True,options=options)
```

```
<IPython.core.display.HTML object>
```

[ ]:

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