

```
from google.colab import drive
drive.mount('/content/drive')
```

Mounted at /content/drive

```
cd drive/MyDrive/tok2vec
```

/content/drive/MyDrive/tok2vec

```
pip install https://huggingface.co/opennnaaiorg/en_legal_ner_trf/resolve/main/en_legal_ner_trf-any-py3-none-any.whl
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Collecting en-legal-ner-trf==any
  Downloading https://huggingface.co/opennnaaiorg/en_legal_ner_trf/resolve/main/en_legal_ner_trf-any-py3-none-any.whl (446.7 MB)
    |████████████████████| 446.7 MB 21 kB/s
Collecting spacy<3.3.0,>=3.2.2
  Downloading spacy-3.2.4-cp38-cp38-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (6.2 MB)
    |████████████████████| 6.2 MB 9.1 MB/s
Collecting spacy-transformers<1.2.0,>=1.1.4
  Downloading spacy_transformers-1.1.8-py2.py3-none-any.whl (53 kB)
    |████████████████████| 53 kB 2.4 MB/s
Collecting pydantic!=1.8,!1.8.1,<1.9.0,>=1.7.4
  Downloading pydantic-1.8.2-cp38-cp38-manylinux2014_x86_64.whl (13.7 MB)
    |████████████████████| 13.7 MB 71.8 MB/s
Requirement already satisfied: jinja2 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (2.11.3)
Requirement already satisfied: pathy>=0.3.5 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (0.10.0)
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (1.0.3)
Requirement already satisfied: murmurhash<1.1.0,>=0.28.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (1.0.9)
Requirement already satisfied: blis<0.8.0,>=0.4.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (0.7.9)
Requirement already satisfied: wasabi<1.1.0,>=0.8.1 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (0.10.1)
Requirement already satisfied: requests<3.0.0,>=2.13.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (2.23.0)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (21.3)
Collecting thinc<8.1.0,>=8.0.12
  Downloading thinc-8.0.17-cp38-cp38-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (671 kB)
    |████████████████████| 671 kB 70.8 MB/s
Requirement already satisfied: numpy>=1.15.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (1.21.6)
Requirement already satisfied: cymem<2.1.0,>=2.0.2 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (2.0.7)
Requirement already satisfied: srsly<3.0.0,>=2.4.1 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (2.4.5)
Requirement already satisfied: click<8.1.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (7.1.2)
Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.8 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (3.0.10)
Requirement already satisfied: setuptools in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (57.4.0)
Requirement already satisfied: catalogue<2.1.0,>=2.0.6 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (2.0.8)
Requirement already satisfied: tqdm<5.0.0,>=4.38.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (4.64.1)
Requirement already satisfied: preshed<3.1.0,>=3.0.2 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (3.0.8)
Requirement already satisfied: langcodes<4.0.0,>=3.2.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (3.3.0)
Collecting typer<0.5.0,>=0.3.0
  Downloading typer-0.4.2-py3-none-any.whl (27 kB)
Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in /usr/local/lib/python3.8/dist-packages (from packaging>=20.0->spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (3.0.9)
Requirement already satisfied: smart-open<6.0.0,>=5.2.1 in /usr/local/lib/python3.8/dist-packages (from pathy>=0.3.5->spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (5.2.1)
Requirement already satisfied: typing-extensions>=3.7.4.3 in /usr/local/lib/python3.8/dist-packages (from pydantic!=1.8,!1.8.1,<1.9.0,>=1.7.4->spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (4.4)
Requirement already satisfied: idna<3,>=2.5 in /usr/local/lib/python3.8/dist-packages (from requests<3.0.0,>=2.13.0->spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (2.10)
Requirement already satisfied: chardet<4,>=3.0.2 in /usr/local/lib/python3.8/dist-packages (from requests<3.0.0,>=2.13.0->spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (3.0.4)
Requirement already satisfied: urllib3!=1.25.0,!1.25.1,<1.26,>=1.21.1 in /usr/local/lib/python3.8/dist-packages (from requests<3.0.0,>=2.13.0->spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (1.2)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.8/dist-packages (from requests<3.0.0,>=2.13.0->spacy<3.3.0,>=3.2.2->en-legal-ner-trf==any) (2022.9.24)
Collecting transformers<4.22.0,>=3.4.0
  Downloading transformers-4.21.3-py3-none-any.whl (4.7 MB)
    |████████████████████| 4.7 MB 79.2 MB/s
Requirement already satisfied: torch>=1.6.0 in /usr/local/lib/python3.8/dist-packages (from spacy-transformers<1.2.0,>=1.1.4->en-legal-ner-trf==any) (1.13.0+cu116)
Collecting spacy-alignments<1.0.0,>=0.7.2
  Downloading spacy_alignments-0.8.6-cp38-cp38-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (1.1 MB)
    |████████████████████| 1.1 MB 80.1 MB/s
Collecting spacy-transformers<1.2.0,>=1.1.4
  Downloading spacy_transformers-1.1.7-py2.py3-none-any.whl (53 kB)
    |████████████████████| 53 kB 2.4 MB/s
Collecting transformers<4.21.0,>=3.4.0
  Downloading transformers-4.20.1-py3-none-any.whl (4.4 MB)
    |████████████████████| 4.4 MB 84.4 MB/s
Collecting tokenizers!=0.11.3,<0.13,>=0.11.1
  Downloading tokenizers-0.12.1-cp38-cp38-manylinux_2_12_x86_64.manylinux2010_x86_64.whl (6.6 MB)
```

```
pip install https://github.com/explosion/spacy-models/releases/download/en_core_web_sm-3.2.0/en_core_web_sm-3.2.0-py3-none-any.whl
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Collecting en-core-web-sm==3.2.0
  Downloading https://github.com/explosion/spacy-models/releases/download/en_core_web_sm-3.2.0/en_core_web_sm-3.2.0-py3-none-any.whl (13.9 MB)
    |████████████████████| 13.9 MB 1.3 MB/s
Requirement already satisfied: spacy<3.3.0,>=3.2.0 in /usr/local/lib/python3.8/dist-packages (from en-core-web-sm==3.2.0) (3.2.4)
Requirement already satisfied: numpy>=1.15.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (1.21.6)
Requirement already satisfied: setuptools in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (57.4.0)
Requirement already satisfied: blis<0.8.0,>=0.4.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (0.7.9)
Requirement already satisfied: preshed<3.1.0,>=3.0.2 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (3.0.8)
Requirement already satisfied: wasabi<1.1.0,>=0.8.1 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (0.10.1)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (21.3)
Requirement already satisfied: jinja2 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (2.11.3)
Requirement already satisfied: tqdm<5.0.0,>=4.38.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (4.64.1)
Requirement already satisfied: pathy>=0.3.5 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (0.10.0)
Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.8 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (3.0.10)
Requirement already satisfied: typer<0.5.0,>=0.3.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (0.4.2)
Requirement already satisfied: langcodes<4.0.0,>=3.2.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (3.3.0)
Requirement already satisfied: requests<3.0.0,>=2.13.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (2.23.0)
Requirement already satisfied: murmurhash<1.1.0,>=0.28.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (1.0.9)
Requirement already satisfied: click<8.1.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (7.1.2)
Requirement already satisfied: catalogue<2.1.0,>=2.0.6 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (2.0.8)
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (1.0.3)
Requirement already satisfied: thinc<8.1.0,>=8.0.12 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (8.0.17)
Requirement already satisfied: pydantic!=1.8,!1.8.1,<1.9.0,>=1.7.4 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (1.8.2)
Requirement already satisfied: cymem<2.1.0,>=2.0.2 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (2.0.7)
Requirement already satisfied: srsly<3.0.0,>=2.4.1 in /usr/local/lib/python3.8/dist-packages (from spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (2.4.5)
Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in /usr/local/lib/python3.8/dist-packages (from packaging>=20.0->spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (3.0.9)
Requirement already satisfied: smart-open<6.0.0,>=5.2.1 in /usr/local/lib/python3.8/dist-packages (from pathy>=0.3.5->spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (5.2.1)
Requirement already satisfied: typing-extensions>=3.7.4.3 in /usr/local/lib/python3.8/dist-packages (from pydantic!=1.8,!1.8.1,<1.9.0,>=1.7.4->spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (4.4)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.8/dist-packages (from requests<3.0.0,>=2.13.0->spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (2022.9.24)
Requirement already satisfied: chardet<4,>=3.0.2 in /usr/local/lib/python3.8/dist-packages (from requests<3.0.0,>=2.13.0->spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (3.0.4)
Requirement already satisfied: idna<3,>=2.5 in /usr/local/lib/python3.8/dist-packages (from requests<3.0.0,>=2.13.0->spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (2.10)
Requirement already satisfied: urllib3!=1.25.0,!1.25.1,<1.26,>=1.21.1 in /usr/local/lib/python3.8/dist-packages (from requests<3.0.0,>=2.13.0->spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (1.2)
Requirement already satisfied: MarkupSafe>=0.23 in /usr/local/lib/python3.8/dist-packages (from jinja2->spacy<3.3.0,>=3.2.0->en-core-web-sm==3.2.0) (2.0.1)
Installing collected packages: en-core-web-sm
  Attempting uninstall: en-core-web-sm
    Found existing installation: en-core-web-sm 3.4.1
    Uninstalling en-core-web-sm-3.4.1:
      Successfully uninstalled en-core-web-sm-3.4.1
Successfully installed en-core-web-sm-3.2.0
```

```
!pip install -r requirements.txt
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Requirement already satisfied: spacy in /usr/local/lib/python3.8/dist-packages (from -r requirements.txt (line 1)) (3.2.4)
Requirement already satisfied: bs4 in /usr/local/lib/python3.8/dist-packages (from -r requirements.txt (line 2)) (0.0.1)
Requirement already satisfied: urllib3 in /usr/local/lib/python3.8/dist-packages (from -r requirements.txt (line 3)) (1.24.3)
Requirement already satisfied: cymem<2.1.0,>=2.0.2 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (2.0.7)
Requirement already satisfied: typer<0.5.0,>=0.3.0 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (0.4.2)
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (1.0.3)
Requirement already satisfied: wasabi<1.1.0,>=0.8.1 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (0.10.1)
Requirement already satisfied: numpy>=1.15.0 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (1.21.6)
Requirement already satisfied: pydantic!=1.8,!1.8.1,<1.9.0,>=1.7.4 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (1.8.2)
Requirement already satisfied: preshed<3.1.0,>=3.0.2 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (3.0.8)
Requirement already satisfied: srsly<3.0.0,>=2.4.1 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (2.4.5)
Requirement already satisfied: blis<0.8.0,>=0.4.0 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (0.7.9)
Requirement already satisfied: pathy>=0.3.5 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (0.10.0)
Requirement already satisfied: murmurhash<1.1.0,>=0.28.0 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (1.0.9)
Requirement already satisfied: thinc<8.1.0,>=8.0.12 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (8.0.17)
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Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.8 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (3.0.10)  
Requirement already satisfied: catalogue<2.1.0,>=2.0.6 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (2.0.8)  
Requirement already satisfied: langcodes<4.0.0,>=3.2.0 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (3.3.0)  
Requirement already satisfied: setuptools in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (57.4.0)  
Requirement already satisfied: click<8.1.0 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (7.1.2)  
Requirement already satisfied: requests<3.0.0,>=2.13.0 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (2.23.0)  
Requirement already satisfied: Jinja2 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (2.11.3)  
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (21.3)  
Requirement already satisfied: tqdm<5.0.0,>=4.38.0 in /usr/local/lib/python3.8/dist-packages (from spacy->-r requirements.txt (line 1)) (4.64.1)  
Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in /usr/local/lib/python3.8/dist-packages (from packaging>=20.0->spacy->-r requirements.txt (line 1)) (3.0.9)  
Requirement already satisfied: smart-open<6.0.0,>=5.2.1 in /usr/local/lib/python3.8/dist-packages (from pathy>=0.3.5->spacy->-r requirements.txt (line 1)) (5.2.1)  
Requirement already satisfied: typing-extensions>=3.7.4.3 in /usr/local/lib/python3.8/dist-packages (from pydantic!=1.8,!1.8.1,<1.9.0,>=1.7.4->spacy->-r requirements.txt (line 1)) (4.4.0)  
Requirement already satisfied: idna<3,>=2.5 in /usr/local/lib/python3.8/dist-packages (from requests<3.0.0,>=2.13.0->spacy->-r requirements.txt (line 1)) (2.10)  
Requirement already satisfied: chardet<4,>=3.0.2 in /usr/local/lib/python3.8/dist-packages (from requests<3.0.0,>=2.13.0->spacy->-r requirements.txt (line 1)) (3.0.4)  
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.8/dist-packages (from requests<3.0.0,>=2.13.0->spacy->-r requirements.txt (line 1)) (2022.9.24)  
Requirement already satisfied: BeautifulSoup4 in /usr/local/lib/python3.8/dist-packages (from bs4->-r requirements.txt (line 2)) (4.6.3)  
Requirement already satisfied: MarkupSafe>=0.23 in /usr/local/lib/python3.8/dist-packages (from Jinja2->spacy->-r requirements.txt (line 1)) (2.0.1)

!python3 example-doc.py

Seperating Preamble took 0.0011510848999023438  
Creating doc for judgement took 0.0004112720489501953  
0  
Creating doc for preamble took 8.082389831542969e-05  
/content/drive/MyDrive/tok2vec/legal\_ner.py:39: UserWarning: [W101] Skipping Doc custom extension 'trf\_data' while merging docs.  
combined\_doc = spacy.tokens.Doc.from\_docs([doc\_preamble, doc\_judgment])  
Combining took 0.39458799362182617

!python3 example-sent.py

Seperating Preamble took 0.0010387897491455078  
Creating doc for judgement took 0.00040602684020996094  
Traceback (most recent call last):  
File "example-sent.py", line 12, in <module>  
combined\_doc = extract\_entities\_from\_judgment\_text(judgment\_text,legal\_nlp,preamble\_spilting\_nlp,run\_type,do\_postprocess)  
File "/content/drive/MyDrive/tok2vec/legal\_ner.py", line 30, in extract\_entities\_from\_judgment\_text  
print(len(doc\_judgment.ents))  
AttributeError: 'NoneType' object has no attribute 'ents'

!python -m spacy train training/config.cfg --output ./output --paths.train training/Combined\_Data\_Judgement\_Preamble\_spacy\_format/train.spacy --paths.dev training/Combined\_Data\_Judgement\_Preamble\_sent.spacy

i Saving to output directory: output  
i Using GPU: 0

===== Initializing pipeline =====  
[2022-12-13 06:27:42,782] [INFO] Set up nlp object from config  
INFO:spacy:Set up nlp object from config  
[2022-12-13 06:27:42,791] [INFO] Pipeline: ['tok2vec', 'ner']  
INFO:spacy:Pipeline: ['tok2vec', 'ner']  
[2022-12-13 06:27:42,795] [INFO] Created vocabulary  
INFO:spacy:Created vocabulary  
[2022-12-13 06:27:42,796] [INFO] Finished initializing nlp object  
INFO:spacy:Finished initializing nlp object  
[2022-12-13 06:28:18,873] [INFO] Initialized pipeline components: ['tok2vec', 'ner']  
INFO:spacy:Initialized pipeline components: ['tok2vec', 'ner']  
✓ Initialized pipeline

===== Training pipeline =====

i Pipeline: ['tok2vec', 'ner']  
i Initial learn rate: 0.0  
E # LOSS TOK2VEC LOSS NER ENTS\_F ENTS\_P ENTS\_R SCORE  
---  
0 0 0.00 562.09 0.05 0.10 0.03 0.00  
2 1000 22491.84 442896.63 9.27 15.38 6.64 0.09  
4 2000 26206.99 115929.50 28.50 36.01 23.58 0.28  
7 3000 13548.04 94396.12 39.13 47.65 33.19 0.39  
9 4000 10219.05 83704.00 46.81 53.29 41.74 0.47  
11 5000 16309.78 77556.99 53.40 58.93 48.81 0.53  
14 6000 15914.01 71689.60 56.72 61.86 52.38 0.57  
16 7000 24979.16 67342.88 60.12 64.65 56.18 0.60  
18 8000 12157.20 62183.88 62.49 67.38 58.26 0.62  
21 9000 14115.27 59941.75 64.04 68.30 60.27 0.64  
23 10000 20031.31 57265.53 64.79 68.46 61.49 0.65  
26 11000 20557.18 55236.30 65.69 69.77 62.05 0.66  
28 12000 15454.74 52842.83 66.31 69.61 63.31 0.66  
30 13000 16154.05 51947.57 66.70 71.15 62.78 0.67  
33 14000 18024.96 50176.31 67.11 71.44 63.28 0.67  
35 15000 15575.83 48244.88 67.75 71.88 64.07 0.68  
37 16000 18352.13 48384.14 68.35 72.86 64.37 0.68  
40 17000 18821.86 47106.53 68.34 72.42 64.70 0.68  
42 18000 19132.45 46642.62 68.70 73.01 64.86 0.69  
44 19000 18544.09 45482.97 68.60 72.39 65.19 0.69  
47 20000 18774.82 44101.84 68.24 71.74 65.06 0.68  
49 21000 18518.99 43769.86 68.78 72.38 65.52 0.69  
52 22000 19194.20 43630.19 68.53 72.31 65.13 0.69  
54 23000 20028.21 43317.59 69.13 72.75 65.85 0.69  
56 24000 20364.65 42433.78 69.23 72.73 66.05 0.69  
59 25000 19706.07 42172.04 69.57 73.05 66.41 0.70  
61 26000 20534.99 41570.66 69.60 73.42 66.15 0.70  
63 27000 21535.96 42246.06 69.63 73.28 66.31 0.70  
66 28000 20324.34 40946.50 69.77 73.37 66.51 0.70  
68 29000 20355.18 41473.79 69.74 73.29 66.51 0.70  
70 30000 19986.58 41225.31 69.73 73.35 66.45 0.70  
73 31000 19676.10 41245.55 69.73 73.35 66.45 0.70  
75 32000 22797.65 41435.46 69.73 73.35 66.45 0.70  
78 33000 19760.01 41551.92 69.73 73.35 66.45 0.70

✓ Saved pipeline to output directory  
output/model-last