

Python Fuel Bot Application

A simple python chat bot application I have made using natural language processing and deep learning.

Instructions

1. Install all the requirements for running the project. Type in cmd/linux terminal:

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

2. We can customize or add intents to our project by adding sentences in "intents.json" (optional):

If needed open "intents.json" to add sentences.

3. To Train the model run:

```
python train_chatbot.py
```

Note: Running this command will generate 3 files
"classes.pkl", "words.pkl", "chatbot_model.h5"

4. After doing the above(3rd point) run the gui/chat bot application:

```
python chatgui.py
```

Screenshots:

Output of train_chatbot.py:

```
(venv) C:\Users\bukai\Desktop\python_bot\Simple-Python-Chatbot-master>python train_chatbot.py
[nltk_data] Downloading package punkt to
[nltk_data]   C:\Users\bukai\AppData\Roaming\nltk_data...
[nltk_data]   Package punkt is already up-to-date!
[nltk_data] Downloading package wordnet to
[nltk_data]   C:\Users\bukai\AppData\Roaming\nltk_data...
[nltk_data]   Package wordnet is already up-to-date!
2021-06-06 14:27:36.744226: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2021-06-06 14:27:36.747371: I tensorflow/stream_executor/cuda/cudart_stub.cc:29] Ignore above cudart dlerror if you do not have a GPU set up on your machine.
27 documents
8 classes ['day', 'delivery_date', 'fuel_availability', 'goodbye', 'greeting', 'options', 'search_type_of_fuel', 'thanks']
52 unique lemmatized words ['i', 's', 't', 'r', 'riving', 'available', 'awesome', 'be', 'bye', 'can', 'chatting', 'could', 'date', 'day', 'delivery', 'do', 'for', 'fortypes', 'fuel', 'fuelbot', 'good', 'goodbye', 'hell
o', 'help', 'helpful', 'helping', 'hi', 'how', 'i', 'is', 'later', 'me', 'morning', 'my', 'nice', 'of', 'offered', 'order', 'provide', 'search', 'see', 'supply', 'support', 'thank', 'thanks', 'that', 'the', 'to
', 'today', 'type', 'want', 'what', 'when', 'you']
train_chatbot.py:81: VisibleDeprecationWarning: Creating an ndarray from ragged nested sequences (which is a list-or-tuple of lists-or-tuples-or ndarrays with different lengths or shapes) is deprecated. If you m
eant to do this, you must specify 'dtype=object' when creating the ndarray
  training = np.array(training)
Training data created
2021-06-06 14:27:40.684718: I tensorflow/stream_executor/platform/default/dso_loader.cc:53] Successfully opened dynamic library nvcuda.dll
2021-06-06 14:27:40.716498: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1733] Found device 0 with properties:
pciBusID: 0000:81:00.0 name: NVIDIA GeForce GTX 1650 Ti computeCapability: 7.5
coreClock: 1.485GHz coreCount: 16 deviceMemorySize: 4.00GiB deviceMemoryBandwidth: 178.84GiB/s
2021-06-06 14:27:40.721256: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2021-06-06 14:27:40.724721: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cublas64_11.dll'; dlerror: cublas64_11.dll not found
2021-06-06 14:27:40.728150: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cublaslt64_11.dll'; dlerror: cublaslt64_11.dll not found
2021-06-06 14:27:40.731369: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cufft64_10.dll'; dlerror: cufft64_10.dll not found
2021-06-06 14:27:40.735291: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'curand64_10.dll'; dlerror: curand64_10.dll not found
2021-06-06 14:27:40.738376: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cusolver64_11.dll'; dlerror: cusolver64_11.dll not found
2021-06-06 14:27:40.741602: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cusparse64_11.dll'; dlerror: cusparse64_11.dll not found
2021-06-06 14:27:40.746339: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudnn64_9.dll'; dlerror: cudnn64_9.dll not found
2021-06-06 14:27:40.749835: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1766] Cannot dlopen some GPU libraries. Please make sure the missing libraries mentioned above are installed properly if you would l
ike to use GPU. Follow the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your platform.
Skipping registering GPU devices...
2021-06-06 14:27:40.756292: I tensorflow/core/platform/cpu_feature_guard.cc:142] This TensorFlow binary is optimized with oneAPI Deep Neural Network Library (oneDNN) to use the following CPU instructions in perf
ormance-critical operations: AVX AVX2
To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
2021-06-06 14:27:40.761652: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1258] Device interconnect StreamExecutor with strength 1 edge matrix:
2021-06-06 14:27:40.765571: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1264]
C:\Users\bukai\Desktop\PYTHON-1\SIMPLE-1\venv\lib\site-packages\tensorflow\python\keras\optimizer_v2\optimizer_v2.py:374: UserWarning: The 'lr' argument is deprecated, use 'learning_rate' instead.
  warnings.warn(
2021-06-06 14:27:40.980861: I tensorflow/compiler/mlir/mlir_graph_optimization_pass.cc:176] None of the MLIR Optimization Passes are enabled (registered 2)
Epoch 1/200
```

Number of documents, words classes and lemmatized unique words generated in (same output):

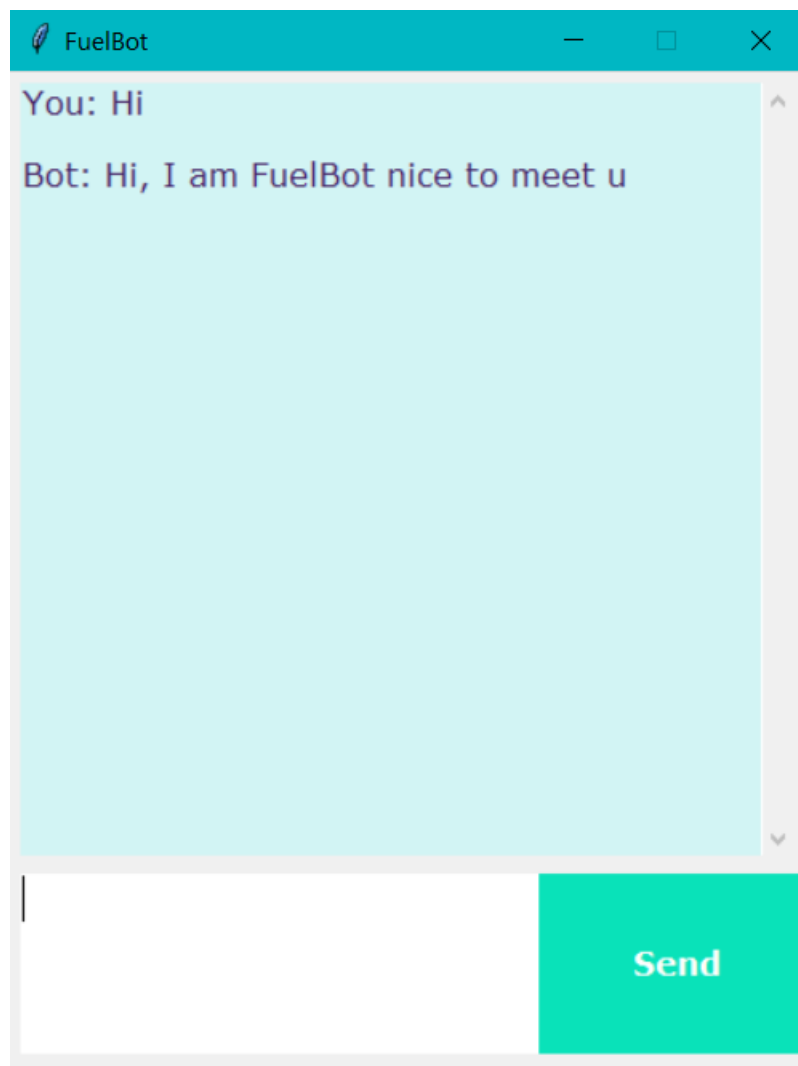
```
27 documents
8 classes ['day', 'delivery_date', 'fuel_availability', 'goodbye', 'greeting', 'options', 'search_type_of_fuel', 'thanks']
52 unique lemmatized words ['i', 's', 't', 'r', 'riving', 'available', 'awesome', 'be', 'bye', 'can', 'chatting', 'could', 'date', 'day', 'delivery', 'do', 'for', 'fortypes', 'fuel', 'fuelbot', 'good', 'goodbye', 'hell
o', 'help', 'helpful', 'helping', 'hi', 'how', 'i', 'is', 'later', 'me', 'morning', 'my', 'nice', 'of', 'offered', 'order', 'provide', 'search', 'see', 'supply', 'support', 'thank', 'thanks', 'that', 'the', 'to
', 'today', 'type', 'want', 'what', 'when', 'you']
```

Model is getting trained:

```
Epoch 180/200
6/6 [=====] - 0s 997us/step - loss: 0.0189 - accuracy: 1.0000
Epoch 181/200
6/6 [=====] - 0s 598us/step - loss: 0.0083 - accuracy: 1.0000
Epoch 182/200
6/6 [=====] - 0s 598us/step - loss: 0.0347 - accuracy: 1.0000
Epoch 183/200
6/6 [=====] - 0s 798us/step - loss: 0.0100 - accuracy: 1.0000
Epoch 184/200
6/6 [=====] - 0s 599us/step - loss: 0.0306 - accuracy: 0.9837
Epoch 185/200
6/6 [=====] - 0s 598us/step - loss: 0.0464 - accuracy: 1.0000
Epoch 186/200
6/6 [=====] - 0s 798us/step - loss: 0.0169 - accuracy: 1.0000
Epoch 187/200
6/6 [=====] - 0s 798us/step - loss: 0.0512 - accuracy: 1.0000
Epoch 188/200
6/6 [=====] - 0s 798us/step - loss: 0.0388 - accuracy: 1.0000
Epoch 189/200
6/6 [=====] - 0s 599us/step - loss: 0.0172 - accuracy: 1.0000
Epoch 190/200
6/6 [=====] - 0s 599us/step - loss: 0.0463 - accuracy: 0.9894
Epoch 191/200
6/6 [=====] - 0s 598us/step - loss: 0.0584 - accuracy: 1.0000
Epoch 192/200
6/6 [=====] - 0s 997us/step - loss: 0.0937 - accuracy: 0.9837
Epoch 193/200
6/6 [=====] - 0s 399us/step - loss: 0.0192 - accuracy: 1.0000
Epoch 194/200
6/6 [=====] - 0s 1ms/step - loss: 0.0539 - accuracy: 1.0000
Epoch 195/200
6/6 [=====] - 0s 599us/step - loss: 0.0100 - accuracy: 1.0000
Epoch 196/200
6/6 [=====] - 0s 1ms/step - loss: 0.1512 - accuracy: 0.8769
Epoch 197/200
6/6 [=====] - 0s 598us/step - loss: 0.0265 - accuracy: 1.0000
Epoch 198/200
6/6 [=====] - 0s 599us/step - loss: 0.0414 - accuracy: 1.0000
Epoch 199/200
6/6 [=====] - 0s 998us/step - loss: 0.0039 - accuracy: 1.0000
Epoch 200/200
```

Output of chatgui.py

```
(venv) C:\Users\bukai\Desktop\python bot\Simple-Python-Chatbot-master>python chatgui.py
2021-06-06 14:31:05.757899: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2021-06-06 14:31:05.761483: I tensorflow/stream_executor/cuda/cudart_stub.cc:29] Ignore above cudart dlerror if you do not have a GPU set up on your machine.
2021-06-06 14:31:08.287187: I tensorflow/stream_executor/platform/default/dso_loader.cc:53] Successfully opened dynamic library nvcuda.dll
2021-06-06 14:31:08.327753: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1733] Found device 0 with properties:
pciBusID: 0000:01:00.0 name: NVIDIA GeForce GTX 1650 Ti computeCapability: 7.5
coreClock: 1.485GHz coreCount: 16 deviceMemorySize: 4.0061GB deviceMemoryBandwidth: 178.8461GB/s
2021-06-06 14:31:08.332078: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2021-06-06 14:31:08.336255: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cublas64_11.dll'; dlerror: cublas64_11.dll not found
2021-06-06 14:31:08.341681: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cublaslt64_11.dll'; dlerror: cublaslt64_11.dll not found
2021-06-06 14:31:08.346167: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cuffft64_10.dll'; dlerror: cuffft64_10.dll not found
2021-06-06 14:31:08.349820: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'curand64_10.dll'; dlerror: curand64_10.dll not found
2021-06-06 14:31:08.353404: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cusolver64_11.dll'; dlerror: cusolver64_11.dll not found
2021-06-06 14:31:08.357327: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cusparse64_11.dll'; dlerror: cusparse64_11.dll not found
2021-06-06 14:31:08.360795: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudnn64_8.dll'; dlerror: cudnn64_8.dll not found
2021-06-06 14:31:08.363595: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1766] Cannot dlopen some GPU libraries. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follow the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your platform.
Skipping registering GPU devices...
2021-06-06 14:31:08.371410: I tensorflow/core/platform/cpu_feature_guard.cc:142] This TensorFlow binary is optimized with oneAPI Deep Neural Network Library (oneDNN) to use the following CPU instructions in performance-critical operations: AVX AVX2
to enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
2021-06-06 14:31:08.377532: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1258] Device interconnect StreamExecutor with strength 1 edge matrix:
2021-06-06 14:31:08.380808: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1264]
2021-06-06 14:31:16.292784: I tensorflow/compiler/mlir/mlir_graph_optimization_pass.cc:176] None of the MLIR Optimization Passes are enabled (registered 2)
```



Author:

Utsav Das