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2 Fake News TensorFlow Serving
3 (autosaved)
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15 Original Notebook Created by CIEP / Global DDM COE
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17
18
19
20 import tensorflow as tf
21 from keras import backend as K
22 from keras.models import load_model, Sequential, Model
23 from keras.layers import Embedding, InputLayer, Convolution1D, MaxPooling1D,
SpatialDropout1D
24 from keras.layers.core import Flatten, Dense, Dropout
25
26 sess = tf.Session()
27 K.set_session(sess)
28 K.set_learning_phase(0) # all new operations will be in test mode from now on
29 /Users/i049374/anaconda/envs/tensorflow/lib/python3.6/importlib/_bootstrap.py:219:
RuntimeWarning: compiletime version 3.5 of module
'tensorflow.python.framework.fast_tensor_util' does not match runtime version 3.6
30 return f(*args, **kwds)
31 Using TensorFlow backend.
32
33 # preprocessing function that expects a string of words as Ints seperated by spaces
34 def preprocess (txt_input):
35     sparse_tokenized_input = tf.string_split(txt_input, delimiter=' ')
36     tokenized_input = tf.sparse_tensor_to_dense(sparse_tokenized_input,
default_value='0')
37     token_idxs = tf.string_to_number(tokenized_input, out_type=tf.float32)
38     inputlength = tf.size(token_idxs)
39     # Max Number of Words in Sentence 40
40     padding = 40 - inputlength
41     token_idxs_padded = tf.pad(token_idxs, [[0,0],[padding,0]])
42     token_idxs_embedding = tf.slice(token_idxs_padded, [0,0], [1,40])
43     return token_idxs_embedding;
44
45 # Reload the Keras Model
46 model = load_model('./Models/FakeNews-v7.h5')
47
48 txt_input = tf.placeholder(tf.string, name='txt_input')
49 token_idxs_embedding = preprocess(txt_input)
50
51 # Recreate Binary Classification Model
52 text_fn_model = Sequential([
53     InputLayer(input_tensor=token_idxs_embedding, input_shape=(1,40)),
54     Embedding(5000, 32, input_length=40),
55     SpatialDropout1D(0.2),
56     Dropout(0.25),
57     Convolution1D(64, 5, padding='same', activation='relu'),
58     Dropout(0.25),
59     MaxPooling1D(),
60     Flatten(),
61     Dense(100, activation='relu'),
62     Dropout(0.7),
63     Dense(1, activation='sigmoid', name='prediction')])
64
65 text_fn_model.name='fakenews'
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66 config = model.get_config()
67 weights = model.get_weights()
68 text_fn_model.set_weights(weights)
69
70 from tensorflow.python.saved_model import builder as saved_model_builder
71 from tensorflow.python.saved_model import utils
72 from tensorflow.python.saved_model import tag_constants, signature_constants
73 from tensorflow.python.saved_model.signature_def_utils_impl import
74 build_signature_def, predict_signature_def
75 from tensorflow.contrib.session_bundle import exporter
76
77 # You must increment the number below if you run this. This is the Model version
78 # for Serving
79 export_path = './Models/FakeNews-Serving/1'
80 builder = saved_model_builder.SavedModelBuilder(export_path)
81
82 signature = predict_signature_def(inputs={'text': txt_input},
83                                   outputs={'labels': text_fn_model.output})
84
85 with K.get_session() as sess:
86     builder.add_meta_graph_and_variables(sess=sess, tags=[tag_constants.SERVING],
87                                         signature_def_map={signature_constants.DEFAULT
88                                                         _SERVING_SIGNATURE_DEF_KEY: signature})
89
90     builder.save()
91
92 INFO:tensorflow:No assets to save.
93 INFO:tensorflow:No assets to write.
94 INFO:tensorflow:SavedModel written to: b'./Models/FakeNews-Serving/1/saved_model.pb'

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