

Twitter Tweet Mining w MongoDB, NLTK, & Naive Bayes

March 4, 2020

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[ ]: """THANK YOU FOR REVIEWING THIS NOTEBOOK
    Please email me so I know your a real person and can help with further code.
    Remainder of this file builds a Panda DF, analyzes basic sentiment with
    ↪Vadar finishing with Naive Bayes Prediction
    Much appreciated ~BBE
    brian.p.hogan@alumni.harvard.edu"""
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[ ]: """Created on Wed Jul 10 15:06:41 2019
@author: BBE - Brian Hogan
Objective: Generate New York State twitter traffic chatter building profile
        of good, bad, and ugly traffic pattern days.
Method:
    Obtain: Mongoddb grab tweets over month across 1 to n twitter handles.
    Scrub: Pandas dataframe.
    Analyze: NLTK w Vadar for +/- neu and compound scoring
    Predict: Naive Bayes Sentiment Analysis
    """
import tweepy
import json
import pymongo
import pandas as pd
from bson.json_util import dumps #from dn_fn.py for save & load to database

CONSUMER_KEY = 'GFuEK46t.....' #BBE twitter keys...
CONSUMER_SECRET = 'sWsBF6S9EOPD.....'
OAUTH_TOKEN = '989685004832792578-3.....'
OAUTH_SECRET = 'zRm1pwVBQOYX4b8...'
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[ ]: """ Functions"""
    """=> twitter login      """
def oauth_login():
    auth = tweepy.OAuthHandler(CONSUMER_KEY,CONSUMER_SECRET)
    auth.set_access_token(OAUTH_TOKEN,OAUTH_SECRET)
    tweepy_api = tweepy.API(auth)
    if (not tweepy_api): #error out
        print ("Problem Connecting to API with OAuth")
    return tweepy_api #api object to twitter functions
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def appauth_login(): #login to twitter w extended rate limiting
    auth = tweepy.AppAuthHandler(CONSUMER_KEY, CONSUMER_SECRET)
    #auth.set_access_token(OAUTH_TOKEN, OAUTH_SECRET) #needed for one test so put
    →back in
    tweepy_api = tweepy.API(auth, wait_on_rate_limit=True,
    →wait_on_rate_limit_notify=True)
    if (not tweepy_api): #let user know if api error
        print ("Problem Connecting to API with AppAuth")
    return tweepy_api #api object to twitter functions

""=> connection test ""
if __name__ == '__main__': #test connection
    tweepy_api = oauth_login()
    print ("Twitter Authorization OK :", tweepy_api)
    tweepy_api = appauth_login()
    print ("Twitter Authorization OK :", tweepy_api)

def simple_search(api, query, max_results=20): #ASYNCH 8.4
    # the first search initializes a cursor, stored in the metadata results,
    # that allows next searches to return additional tweets
    search_results = [status for status in tweepy.Cursor(api.search, q=query).
    →items(max_results)]
    tweets = [tweet._json for tweet in search_results]
    return tweets

""asynch dn_fn.py ""
def save_to_DB(DBname, DBcollection, data):
    client = pymongo.MongoClient('localhost', 27017) #connect to server
    ""change names to lowers case because they are not case sensitive
    and remove special characters like hashtag and spaces ""
    DBname = DBname.lower()
    DBname = DBname.replace('#', '')
    DBname = DBname.replace(' ', '')
    DBcollection = DBcollection.lower()
    DBcollection = DBcollection.replace('#', '')
    DBcollection = DBcollection.replace(' ', '')
    db = client[DBname]
    collection = db[DBcollection]
    collection.insert_many(data)
    print("\nSaved", len(data), "documents to DB", DBname, DBcollection)

""dn_fn.py - used to get existing data; return as json objects""
def load_from_DB(DBname, DBcollection):
    client = pymongo.MongoClient('localhost', 27017)
    client.list_database_names
    db = client[DBname]
    collection = db[DBcollection] #find collection and load docs

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docs = collection.find()  
return docs_json
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