

Fake News Identifier

Name : Benoush Valentine F

Reg no : 610821205006

Branch : B.Tech.,IT

Year of Study : 3rd

Overview

A fake news identifier is a tool that uses artificial intelligence (AI) to automatically detect fake news articles. These tools typically work by analyzing a variety of factors, including the article's content, its source, and its language style.

Some of the most common features that fake news identifiers look for include:

- Biased or inflammatory language: Fake news articles often use language that is designed to evoke strong emotions, such as anger, fear, or disgust.
- False or exaggerated claims: Fake news articles often make claims that are not supported by evidence, or that are exaggerated beyond what is reasonable.
- Lack of credible sourcing: Fake news articles often do not cite any sources for their claims, or they cite sources that are not credible.
- Unrealistic or unbelievable events: Fake news articles often report events that are so unrealistic or unbelievable that they are clearly false.
- Poor grammar and spelling: Fake news articles often contain grammatical errors and spelling mistakes.

Fake news identifiers are not perfect, and they can sometimes incorrectly identify real news articles as fake. However, they can be a useful tool for helping people to identify and avoid fake news.

Here are some examples of fake news identifier tools:

- Fake News Detector: This tool from the Stanford University News Lab uses AI to analyze news articles for signs of fake news.
- NewsGuard: This tool gives news websites a rating based on their transparency, editorial standards, and fact-checking practices.
- BuzzFeed News's Fake News Detector: This tool uses AI to analyze news articles for signs of fake news, and it also includes a database of known fake news websites.

It is important to note that fake news identifiers are not a substitute for critical thinking. It is still important to be skeptical of news articles, even if they have been rated as credible by a fake news identifier tool.

Here are some tips for identifying fake news articles:

- Check the source: Is the article from a reputable news organization?

- Check the author: Is the author identified? Do they have any credentials?
- Check the date: Is the article recent?
- Check the headline: Is the headline sensational or misleading?
- Check the content: Does the article make any claims that seem unrealistic or unbelievable?
- Check the sources: Are the sources cited credible?
- Use a fake news identifier tool: There are a number of fake news identifier tools available online.

About the Dataset:

1. id: unique id for a news article
2. title: the title of a news article
3. author: author of the news article
4. text: the text of the article; could be incomplete
5. label: a label that marks whether the news article is real or fake:
 - 0: real News , reliable
 - 1: Fake news , unreliable



Importing Libraries

In [1]:

linkcode

```

import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score
from sklearn.metrics import classification_report
import re
import string

```

Importing Dataset

In [2]:

```

df_fake = pd.read_csv("../input/fake-news-detection/Fake.csv")
df_true = pd.read_csv("../input/fake-news-detection/True.csv")

```

In [3]:

```
df_fake.head()
```

Out[3]:

	title	text	subject	date
0	Donald Trump Sends Out Embarrassing New Year'...	Donald Trump just couldn t wish all Americans ...	News	December 31, 2017
1	Drunk Bragging Trump Staffer Started Russian ...	House Intelligence Committee Chairman Devin Nu...	News	December 31, 2017
2	Sheriff David Clarke Becomes An Internet Joke...	On Friday, it was revealed that former Milwauk...	News	December 30, 2017
3	Trump Is So Obsessed He Even Has Obama's Name...	On Christmas day, Donald Trump announced that ...	News	December 29, 2017
4	Pope Francis Just Called Out Donald Trump Dur...	Pope Francis used his annual Christmas Day mes...	News	December 25, 2017

In [4]:

```
df_true.head(5)
```

Out[4]:

	title	text	subject	date
0	As U.S. budget fight looms, Republicans flip t...	WASHINGTON (Reuters) - The head of a conservat...	politicsNews	December 31, 2017
1	U.S. military to accept transgender recruits o...	WASHINGTON (Reuters) - Transgender people will...	politicsNews	December 29, 2017
2	Senior U.S. Republican senator: 'Let Mr. Muell...	WASHINGTON (Reuters) - The special counsel inv...	politicsNews	December 31, 2017
3	FBI Russia probe helped by Australian diplomat...	WASHINGTON (Reuters) - Trump campaign adviser ...	politicsNews	December 30, 2017
4	Trump wants Postal Service to charge 'much mor...	SEATTLE/WASHINGTON (Reuters) - President Donal...	politicsNews	December 29, 2017

Inserting a column "class" as target feature

In [5]:

```
df_fake["class"] = 0  
df_true["class"] = 1
```

In [6]:

```
df_fake.shape, df_true.shape
```

Out[6]:

```
((23481, 5), (21417, 5))
```

In [7]:

```
# Removing last 10 rows for manual testing
```

```
df_fake_manual_testing = df_fake.tail(10)
for i in range(23480,23470,-1):
    df_fake.drop([i], axis = 0, inplace = True)

df_true_manual_testing = df_true.tail(10)
for i in range(21416,21406,-1):
    df_true.drop([i], axis = 0, inplace = True)
```

In [8]:

```
df_fake.shape, df_true.shape
```

Out[8]:

```
((23471, 5), (21407, 5))
```

In [9]:

```
df_fake_manual_testing["class"] = 0
df_true_manual_testing["class"] = 1
```

/opt/conda/lib/python3.7/site-packages/ipykernel_launcher.py:1: Setting WithCopyWarning:

A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy

"""Entry point for launching an IPython kernel.

/opt/conda/lib/python3.7/site-packages/ipykernel_launcher.py:2: Setting WithCopyWarning:

A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy

In [10]:

```
df_fake_manual_testing.head(10)
```

Out[10]:

	title	text	subject	date	class
23471	Seven Iranians freed in the prisoner swap have...	21st Century Wire says This week, the historic...	Middle-east	January 20, 2016	0
23472	#Hashtag Hell & The Fake Left	By Dady Chery and Gilbert MercierAll writers ...	Middle-east	January 19, 2016	0
23473	Astroturfing: Journalist Reveals Brainwashing ...	Vic Bishop Waking TimesOur reality is carefull...	Middle-east	January 19, 2016	0
23474	The New American Century: An Era of Fraud	Paul Craig RobertsIn the last years of the 20t...	Middle-east	January 19, 2016	0
23475	Hillary Clinton: 'Israel First' (and no peace ...	Robert Fantina CounterpunchAlthough the United...	Middle-east	January 18, 2016	0
23476	McPain: John McCain Furious That Iran Treated ...	21st Century Wire says As 21WIRE reported earl...	Middle-east	January 16, 2016	0
23477	JUSTICE? Yahoo Settles E-mail Privacy Class-ac...	21st Century Wire says It s a familiar theme. ...	Middle-east	January 16, 2016	0
23478	Sunnistan: US and Allied 'Safe Zone' Plan to T...	Patrick Henningsen 21st Century WireRemember ...	Middle-east	January 15, 2016	0
23479	How to Blow \$700 Million: Al Jazeera America F...	21st Century Wire says Al Jazeera America will...	Middle-east	January 14, 2016	0
23480	10 U.S. Navy Sailors Held by Iranian Military ...	21st Century Wire says As 21WIRE predicted in ...	Middle-east	January 12, 2016	0

```
df_true_manual_testing.head(10)
```

Out[11]:

	title	text	subject	date	class
21407	Mata Pires, owner of embattled Brazil builder ...	SAO PAULO (Reuters) - Cesar Mata Pires, the ow...	worldnews	August 22, 2017	1
21408	U.S., North Korea clash at U.N. forum over nuc...	GENEVA (Reuters) - North Korea and the United ...	worldnews	August 22, 2017	1
21409	U.S., North Korea clash at U.N. arms forum on ...	GENEVA (Reuters) - North Korea and the United ...	worldnews	August 22, 2017	1
21410	Headless torso could belong to submarine journ...	COPENHAGEN (Reuters) - Danish police said on T...	worldnews	August 22, 2017	1
21411	North Korea shipments to Syria chemical arms a...	UNITED NATIONS (Reuters) - Two North Korean sh...	worldnews	August 21, 2017	1
21412	'Fully committed' NATO backs new U.S. approach...	BRUSSELS (Reuters) - NATO allies on Tuesday we...	worldnews	August 22, 2017	1
21413	LexisNexis withdrew two products from Chinese ...	LONDON (Reuters) - LexisNexis, a provider of l...	worldnews	August 22, 2017	1
21414	Minsk cultural hub becomes haven from authorities	MINSK (Reuters) - In the shadow of disused Sov...	worldnews	August 22, 2017	1
21415	Vatican upbeat on possibility of Pope Francis ...	MOSCOW (Reuters) - Vatican Secretary of State ...	worldnews	August 22, 2017	1

	title	text	subject	date	class
21416	Indonesia to buy \$1.14 billion worth of Russia...	JAKARTA (Reuters) - Indonesia will buy 11 Sukh...	worldnews	August 22, 2017	1

In [12]:

```
df_manual_testing = pd.concat([df_fake_manual_testing, df_true_manual_testing], axis = 0)
df_manual_testing.to_csv("manual_testing.csv")
```

Merging True and Fake Dataframes

In [13]:

```
df_merge = pd.concat([df_fake, df_true], axis = 0 )
df_merge.head(10)
```

Out[13]:

	title	text	subject	date	class
0	Donald Trump Sends Out Embarrassing New Year'...	Donald Trump just couldn t wish all Americans ...	News	December 31, 2017	0
1	Drunk Bragging Trump Staffer Started Russian ...	House Intelligence Committee Chairman Devin Nu...	News	December 31, 2017	0
2	Sheriff David Clarke Becomes An Internet Joke...	On Friday, it was revealed that former Milwauk...	News	December 30, 2017	0
3	Trump Is So Obsessed He Even Has Obama's Name...	On Christmas day, Donald Trump announced that ...	News	December 29, 2017	0
4	Pope Francis Just Called Out Donald Trump Dur...	Pope Francis used his annual Christmas Day mes...	News	December 25, 2017	0

	title	text	subject	date	class
5	Racist Alabama Cops Brutalize Black Boy While...	The number of cases of cops brutalizing and ki...	News	December 25, 2017	0
6	Fresh Off The Golf Course, Trump Lashes Out A...	Donald Trump spent a good portion of his day a...	News	December 23, 2017	0
7	Trump Said Some INSANELY Racist Stuff Inside ...	In the wake of yet another court decision that...	News	December 23, 2017	0
8	Former CIA Director Slams Trump Over UN Bully...	Many people have raised the alarm regarding th...	News	December 22, 2017	0
9	WATCH: Brand-New Pro-Trump Ad Features So Muc...	Just when you might have thought we d get a br...	News	December 21, 2017	0

In [14]:

```
df_merge.columns
```

Out[14]:

```
Index(['title', 'text', 'subject', 'date', 'class'], dtype='object')
```

Removing columns which are not required

In [15]:

```
df = df_merge.drop(["title", "subject", "date"], axis = 1)
```

In [16]:

```
df.isnull().sum()
```

Out[16]:

```
text      0
class     0
dtype: int64
```

Random Shuffling the dataframe

In [17]:

```
df = df.sample(frac = 1)
```

In [18]:

```
df.head()
```

Out[18]:

	text	class
5099	During a live CNN interview with Rudy Giuliani...	0
1345	ANKARA (Reuters) - Turkey urged the United Sta...	1
20864	The attitudes of the family members defending ...	0
971	WASHINGTON (Reuters) - Charges brought against...	1
21217	The jurors in the Freddie Gray case were deadl...	0

In [19]:

```
df.reset_index(inplace = True)  
df.drop(["index"], axis = 1, inplace = True)
```

In [20]:

```
df.columns
```

Out[20]:

```
Index(['text', 'class'], dtype='object')
```

In [21]:

```
df.head()
```

Out[21]:

	text	class
0	During a live CNN interview with Rudy Giuliani...	0
1	ANKARA (Reuters) - Turkey urged the United Sta...	1
2	The attitudes of the family members defending ...	0
3	WASHINGTON (Reuters) - Charges brought against...	1
4	The jurors in the Freddie Gray case were deadl...	0

Creating a function to process the texts

In [22]:

```
def wordopt(text):
    text = text.lower()
    text = re.sub('[.*?\\]', '', text)
    text = re.sub("\\W", " ", text)
    text = re.sub('https?://\\S+|www\\.\\S+', '', text)
    text = re.sub('<.*?>+', '', text)
    text = re.sub('[%s]' % re.escape(string.punctuation), '', text)
    text = re.sub('\\n', '', text)
    text = re.sub('\\w*\\d\\w*', '', text)
    return text
```

In [23]:

```
df["text"] = df["text"].apply(wordopt)
```

Defining dependent and independent variables

In [24]:

```
x = df["text"]
```

```
y = df["class"]
```

Splitting Training and Testing

In [25]:

```
x_train, x_test, y_train, y_test = train_test_split(x, y, test_size=0.25)
```

Convert text to vectors

In [26]:

```
from sklearn.feature_extraction.text import TfidfVectorizer

vectorization = TfidfVectorizer()
xv_train = vectorization.fit_transform(x_train)
xv_test = vectorization.transform(x_test)
```

Logistic Regression

In [27]:

```
from sklearn.linear_model import LogisticRegression

LR = LogisticRegression()
LR.fit(xv_train, y_train)
```

Out[27]:

```
LogisticRegression()
```

In [28]:

```
pred_lr=LR.predict(xv_test)
```

In [29]:

```
LR.score(xv_test, y_test)
```

Out[29]:

```
0.9885026737967915
```

In [30]:

```
print(classification_report(y_test, pred_lr))
```

	precision	recall	f1-score	support
--	-----------	--------	----------	---------

0	0.99	0.99	0.99	5853
1	0.99	0.99	0.99	5367
accuracy			0.99	11220
macro avg	0.99	0.99	0.99	11220
weighted avg	0.99	0.99	0.99	11220

Decision Tree Classification

In [31]:

```
from sklearn.tree import DecisionTreeClassifier

DT = DecisionTreeClassifier()
DT.fit(xv_train, y_train)
```

Out[31]:

```
DecisionTreeClassifier()
```

In [32]:

```
pred_dt = DT.predict(xv_test)
```

In [33]:

```
DT.score(xv_test, y_test)
```

Out[33]:

```
0.996524064171123
```

In [34]:

```
print(classification_report(y_test, pred_dt))
```

	precision	recall	f1-score	support
0	1.00	1.00	1.00	5853
1	1.00	1.00	1.00	5367
accuracy			1.00	11220
macro avg	1.00	1.00	1.00	11220
weighted avg	1.00	1.00	1.00	11220

Gradient Boosting Classifier

In [35]:

```
from sklearn.ensemble import GradientBoostingClassifier

GBC = GradientBoostingClassifier(random_state=0)
GBC.fit(xv_train, y_train)
```

Out[35]:

```
GradientBoostingClassifier(random_state=0)
```

In [36]:

```
pred_gbc = GBC.predict(xv_test)
```

In [37]:

```
GBC.score(xv_test, y_test)
```

Out[37]:

```
0.9959893048128342
```

In [38]:

```
print(classification_report(y_test, pred_gbc))
```

	precision	recall	f1-score	support
0	1.00	0.99	1.00	5853
1	0.99	1.00	1.00	5367
accuracy			1.00	11220
macro avg	1.00	1.00	1.00	11220
weighted avg	1.00	1.00	1.00	11220

Random Forest Classifier

In [39]:

```
from sklearn.ensemble import RandomForestClassifier

RFC = RandomForestClassifier(random_state=0)
RFC.fit(xv_train, y_train)
```

Out[39]:

```
RandomForestClassifier(random_state=0)
```

In [40]:

```
pred_rfc = RFC.predict(xv_test)
```

In [41]:

```
RFC.score(xv_test, y_test)
```

Out[41]:

0.9941176470588236

In [42]:

```
print(classification_report(y_test, pred_rfc))
```

	precision	recall	f1-score	support
0	0.99	1.00	0.99	5853
1	1.00	0.99	0.99	5367
accuracy			0.99	11220
macro avg	0.99	0.99	0.99	11220
weighted avg	0.99	0.99	0.99	11220

Model Testing

In [43]:

[illegible]

```
output_label(pred_GBC[0]),  
output_label(pred_RFC[0]))
```

In [44]:

```
news = str(input())  
manual_testing(news)
```

BRUSSELS (Reuters) - NATO allies on Tuesday welcomed President Donald Trump's decision to commit more forces to Afghanistan, as part of a new U.S. strategy he said would require more troops and funding from America's partners. Having run for the White House last year on a pledge to withdraw swiftly from Afghanistan, Trump reversed course on Monday and promised a stepped-up military campaign against Taliban insurgents, saying: Our troops will fight to win. U.S. officials said he had signed off on plans to send about 4,000 more U.S. troops to add to the roughly 8,400 now deployed in Afghanistan. But his speech did not define benchmarks for successfully ending the war that began with the U.S.-led invasion of Afghanistan in 2001, and which he acknowledged had required an extraordinary sacrifice of blood and treasure. We will ask our NATO allies and global partners to support our new strategy, with additional troops and funding increases in line with our own. We are confident they will, Trump said. That comment signaled he would further increase pressure on U.S. partners who have already been jolted by his repeated demands to step up their contributions to NATO and his description of the alliance as obsolete - even though, since taking office, he has said this is no longer the case. NATO Secretary General Jens Stoltenberg said in a statement: NATO remains fully committed to Afghanistan and I am looking forward to discussing the way ahead with (Defense) Secretary (James) Mattis and our Allies and international partners. NATO has 12,000 troops in Afghanistan, and 15 countries have pledged more, Stoltenberg said. Britain, a leading NATO member, called the U.S. commitment very welcome. In my call with Secretary Mattis yesterday we agreed that despite the challenges, we have to stay the course in Afghanistan to help build up its fragile democracy and reduce the terrorist threat to the West, Defence Secretary Michael Fallon said. Germany, which has borne the brunt of Trump's criticism over the scale of its defense spending, also welcomed the new U.S. plan. Our continued commitment is necessary on the path to stabilizing the country, a government spokesman said. In June, European allies had already pledged more troops but had not given details on numbers, waiting for the Trump administration to outline its strategy for the region. Nearly 16 years after the U.S.-led invasion - a response to the Sept. 11 attacks which were planned by al Qaeda leader Osama bin Laden from Afghanistan - the country is still struggling with weak central government and a Taliban insurgency. Trump said he shared the frustration of the American people who were weary of war without victory, but a hasty withdrawal would create a vacuum for groups like Islamic State and al Qaeda to fill.

LR Prediction: Not A Fake News
DT Prediction: Not A Fake News
GBC Prediction: Not A Fake News
RFC Prediction: Not A Fake News

In [45]:

```
news = str(input())  
manual_testing(news)
```

Vic Bishop Waking TimesOur reality is carefully constructed by powerful corporate, political and special interest sources in order to covertly sway public opinion. Blatant lies are often televised regarding terrorism, food, war, health, etc. They are fashioned to sway public opinion and condition viewers to accept what have become destructive societal norms. The practice of manipulating and controlling public opinion with distorted media messages has become so common that there is a whole industry formed around this. The entire role of this brainwashing industry is to figure out how to spin information to journalists, similar to the lobbying of government. It is never really clear just how much truth the journalists receive because the news industry has become complacent.

The messages that it presents are shaped by corporate powers who often spend millions on advertising with the six conglomerates that own 90% of the media: General Electric (GE), News-Corp, Disney, Viacom, Time Warner, and CBS. Yet, these corporations function under many different brands, such as FOX, ABC, CNN, Comcast, Wall Street Journal, etc, giving people the perception of choice. As Tavistock's researchers showed, it was important that the victims of mass brainwashing not be aware that their environment was being controlled; there should thus be a vast number of sources for information, whose messages could be varied slightly, so as to mask the sense of external control. ~ Specialist of mass brainwashing, L. Wolfe
New Brainwashing Tactic Called AstroturfWith alternative media on the rise, the propaganda machine continues to expand. Below is a video of Sharyl Attkisson, investigative reporter with CBS, during which she explains how astroturf, or fake grassroots movements, are used to spin information not only to influence journalists but to sway public opinion. Astroturf is a perversion of grassroots. Astroturf is when political, corporate or other special interests disguise themselves and publish blogs, start facebook and twitter accounts, publish ads, letters to the editor, or simply post comments online, to try to fool you into thinking an independent or grassroots movement is speaking. ~ Sharyl Attkisson, Investigative Reporter
How do you separate fact from fiction? Sharyl Attkisson finishes her talk with some insights on how to identify signs of propaganda and astroturfing. These methods are used to give people the impression that there is widespread support for an agenda, when, in reality, one may not exist. Astroturf tactics are also used to discredit or criticize those that disagree with certain agendas, using stereotypical names such as conspiracy theorist or quack. When

in fact when someone dares to reveal the truth or questions the official story, it should spark a deeper curiosity and encourage further scrutiny of the information. This article (Journalist Reveals Tactics Brainwashing Industry Uses to Manipulate the Public) was originally created and published by Waking Times and is published here under a Creative Commons license with attribution to Vic Bishop and WakingTimes.com. It may be re-posted freely with proper attribution, author bio, and this copyright statement. READ MORE MSM PROPAGANDA NEWS AT: 21st Century Wire MSM Watch Files

LR Prediction: Fake News
DT Prediction: Fake News
GBC Prediction: Fake News
RFC Prediction: Fake News

In [46]:

```
news = str(input())  
manual_testing(news)
```

SAO PAULO (Reuters) - Cesar Mata Pires, the owner and co-founder of Brazilian engineering conglomerate OAS SA, one of the largest companies involved in Brazil's corruption scandal, died on Tuesday. He was 68. Mata Pires died of a heart attack while taking a morning walk in an upscale district of São Paulo, where OAS is based, a person with direct knowledge of the matter said. Efforts to contact his family were unsuccessful. OAS declined to comment. The son of a wealthy cattle rancher in the northeastern state of Bahia, Mata Pires' links to politicians were central to the expansion of OAS, which became Brazil's No. 4 builder earlier this decade, people familiar with his career told Reuters last year. His big break came when he befriended Antonio Carlos Magalhães, a popular politician who was Bahia governor several times, and eventually married his daughter Tereza. Brazilians joked that OAS stood for Obras Arranjadas pelo Sogro - or Work Arranged by the Father-In-Law. After years of steady growth triggered by a flurry of massive government contracts, OAS was ensnared in Operation Car Wash which unearthed an illegal contracting ring between state firms and builders. The ensuing scandal helped topple former Brazilian President Dilma Rousseff last year. Trained as an engineer, Mata Pires founded OAS with two colleagues in 1976 to do sub-contracting work for larger rival Odebrecht SA - the biggest of the builders involved in the probe. Before the scandal, Forbes magazine estimated Mata Pires' fortune at \$1.6 billion. He dropped off the magazine's billionaire list in 2015, months after OAS sought bankruptcy protection after the Car Wash scandal. While Mata Pires was never accused of wrongdoing in the investigations, creditors demanded he and his family stay away from the builder's day-to-day operations, people directly involved in the negotiations told Reuters at the time. He is survived by his wife and his two sons.

```
LR Prediction: Not A Fake News  
DT Prediction: Not A Fake News  
GBC Prediction: Not A Fake News  
RFC Prediction: Not A Fake News
```

Conclusion

The project for identifying the Fake news has been built successfully. The dataset is taken from Kaggle and it is trained by machine learning using NLP.