HW9_Wei_Yanran

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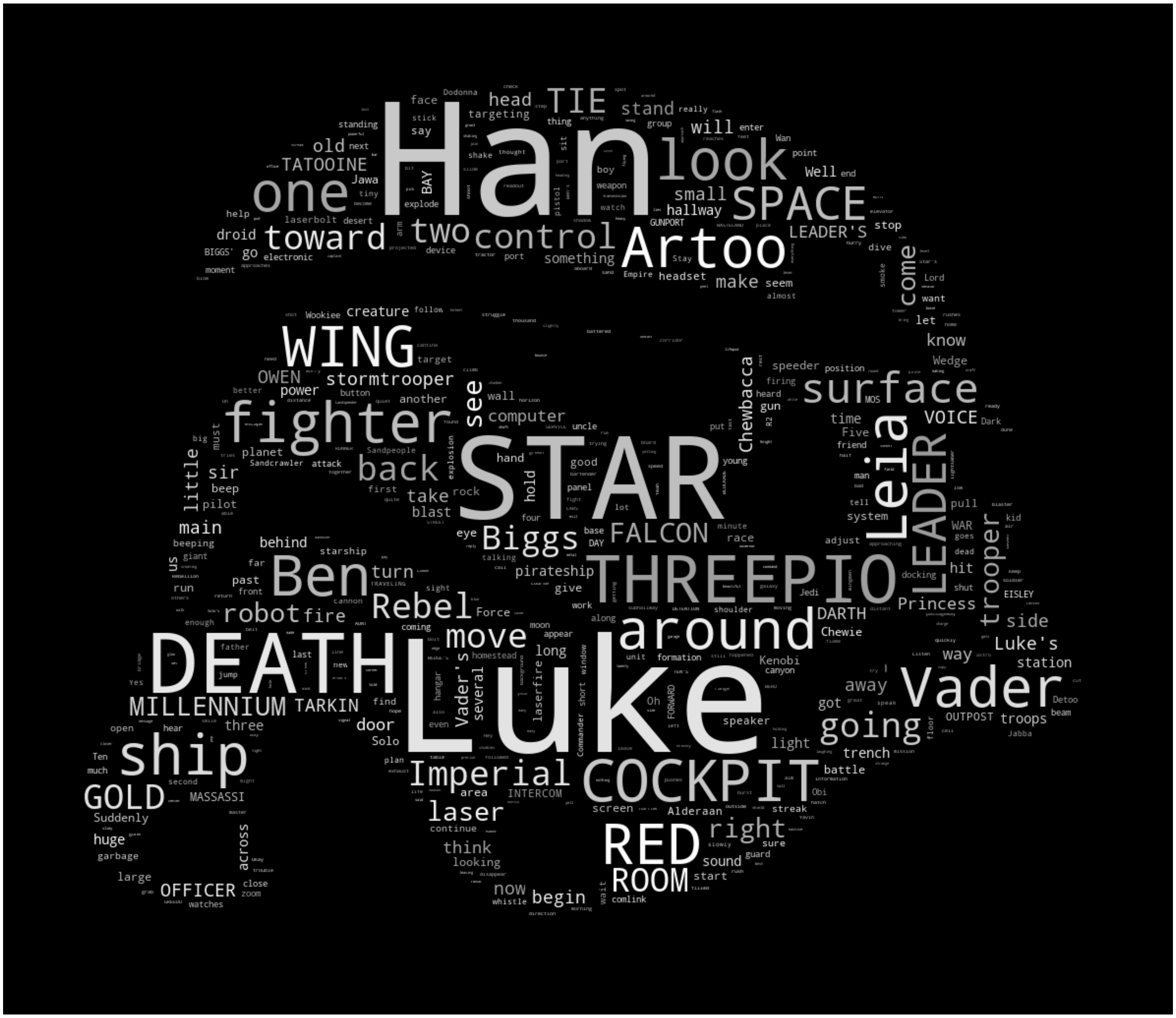

Reference

https://github.com/amueller/word_cloud

```
#!/usr/bin/env python
"""
Using custom colors
===================
Using the recolor method and custom coloring functions.
"""

import numpy as np
from PIL import Image
from os import path
import matplotlib.pyplot as plt
import random

from wordcloud import WordCloud, STOPWORDS


def grey_color_func(word, font_size, position, orientation, random_state=None,
                    **kwargs):
    return "hsl(0, 0%%, %d%%)" % random.randint(60, 100)

d = "C:/Users/Echo/Desktop/2017 Fall/Statistical Package/HW9/Echo-Wei-HW/09_Python_Rnotebooks"

# read the mask image
# taken from
# http://www.stencilry.org/stencils/movies/star%20wars/storm-trooper.gif
mask = np.array(Image.open(path.join(d, "stormtrooper_mask.png")))

# movie script of "a new hope"
# http://www.imsdb.com/scripts/Star-Wars-A-New-Hope.html
# May the lawyers deem this fair use.
text = open(path.join(d, 'a_new_hope.txt')).read()

# preprocessing the text a little bit
text = text.replace("HAN", "Han")
text = text.replace("LUKE'S", "Luke")

# adding movie script specific stopwords
stopwords = set(STOPWORDS)
stopwords.add("int")
stopwords.add("ext")

wc = WordCloud(max_words=1000, mask=mask, stopwords=stopwords, margin=10,
               random_state=1).generate(text)
# store default colored image
default_colors = wc.to_array()
plt.title("Custom colors")
plt.imshow(wc.recolor(color_func=grey_color_func, random_state=3),
           interpolation="bilinear")
wc.to_file("a_new_hope.png")

    knitr::include_graphics("a_new_hope.png")
```