Topic Modeling

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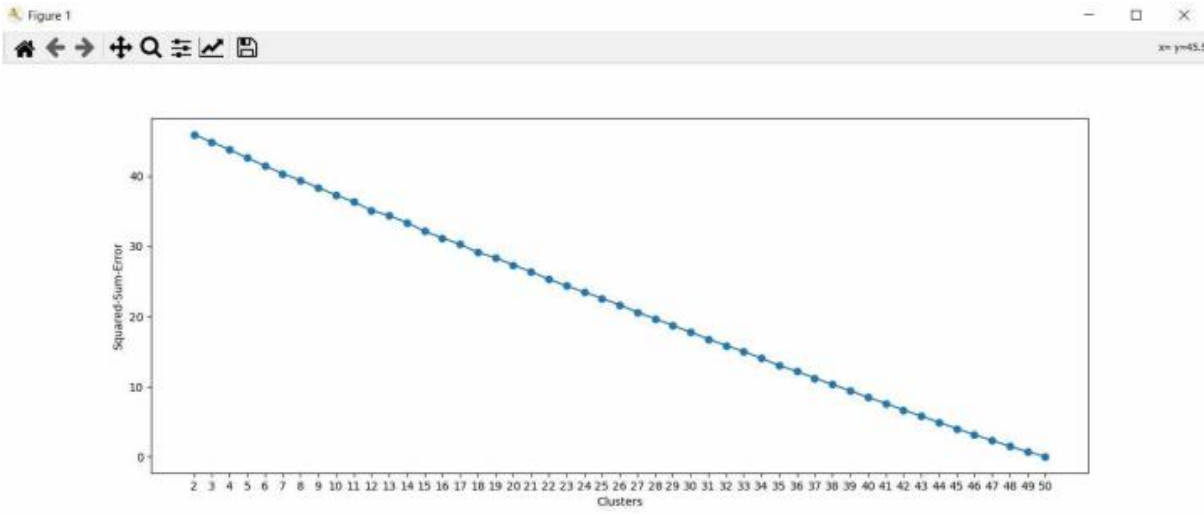
1) Data Reading:
    - Reading data using read from pandas library
    - Return it into data frame df

2) Data Preprocessing:
    - Use sample size of data, sample size = 200
    - Import stop words, Punctuation and remove them from sample
    - Loop on sample size , get each raw, then tokenize data
    - Lemmetize tokens using WordNetLemmatizer
    - Append them to Corpus dataframe

3) Features Extraction:
    - Create TF-IDF vectorizer object
    - Fit training data using fit_transform
    - Convert it to dataframe tfidfmatrix

4) Kmeans:
    - Do clustering for optimal K
    - Append them in Squared_Sum_Error

5) MiniBatchKMeans:
    - Fit data using fit_transform

6) Visualising data:
    - Kmeans:
    - 

    - MiniBatchKMeans:

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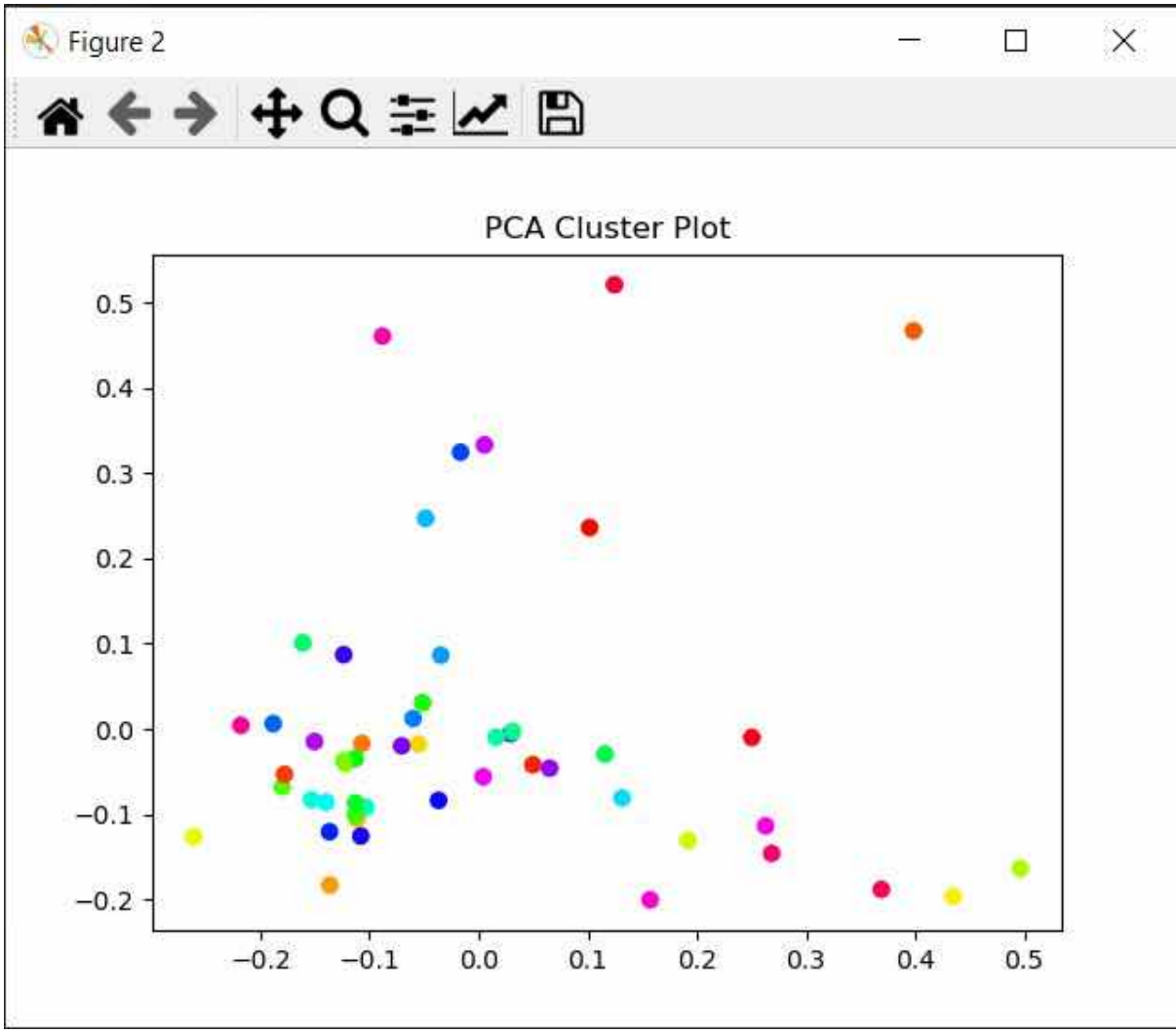
Figure 2
PCA Cluster Plot
0.5
0.4
0.3
0.2
0.1
0.0
−0.1
−0.2
−0.2
−0.1
0.0
0.1
0.2
0.3
0.4
0.5