1. The best conf matrix was achieved to be   
   [[3900 3]  
    [2355 1624]]  
   On, an average, our confusion matrix looked like:  
   [[ 3 3900]

[1624 2355]]

cluster.homogeneity\_score(total\_labels, kmeans.labels\_)

Out[83]: 0.23765202881148501

cluster.completeness\_score(total\_labels, kmeans.labels\_)

Out[84]: 0.32349788326508194

cluster.adjusted\_mutual\_info\_score(total\_labels, kmeans.labels\_)

Out[85]: 0.23758222631323236  
  
3. Looking at top singular values, we figured out that the most significant values were till the 55th dimension.

Conf matrix:

[[3775 128]

[ 144 3835]]

homogeneity score -- 0.7835

completeness score -- 0.7835

adjusted rand score -- 0.8667

adusted mutual info score -- 0.7835