Appendix A: Raw tables for silhouette scores

Each table shows silhouette scores for a particular clustering algorithm under each K and each dimensionality reduction method (average of 3 trials).

	K=5	K=15	K=25
DF	**0.133575175**	**0.250056887**	**0.28126945**
PCA	**0.024302778**	**-0.062158356**	**-0.068773202**
SVD	**0.118917829**	**0.107447175**	**0.121141676**
TSNE	**0.21339108**	**0.214139897**	**0.200090463**

Table A1: Silhouette scores for Gaussian Mixture

	K=5	K=15	K=25
DF	**0.143084474**	**0.257937017**	**0.282533363**
PCA	**0.32056806**	**0.191782604**	**0.14649824**
SVD	**0.309526988**	**0.306865481**	**0.312735478**
TSNE	**0.222269463**	**0.23040506**	**0.217828066**

Table A2: Silhouette scores for K-means

	K=5	K=15	K=25
DF	**0.085395722**	**0.282446318**	**0.20664975**
PCA	**-0.186947262**	**-0.515386815**	**-0.514285042**
SVD	**NA**	**NA**	**NA**
TSNE	**NA**	**NA**	**NA**

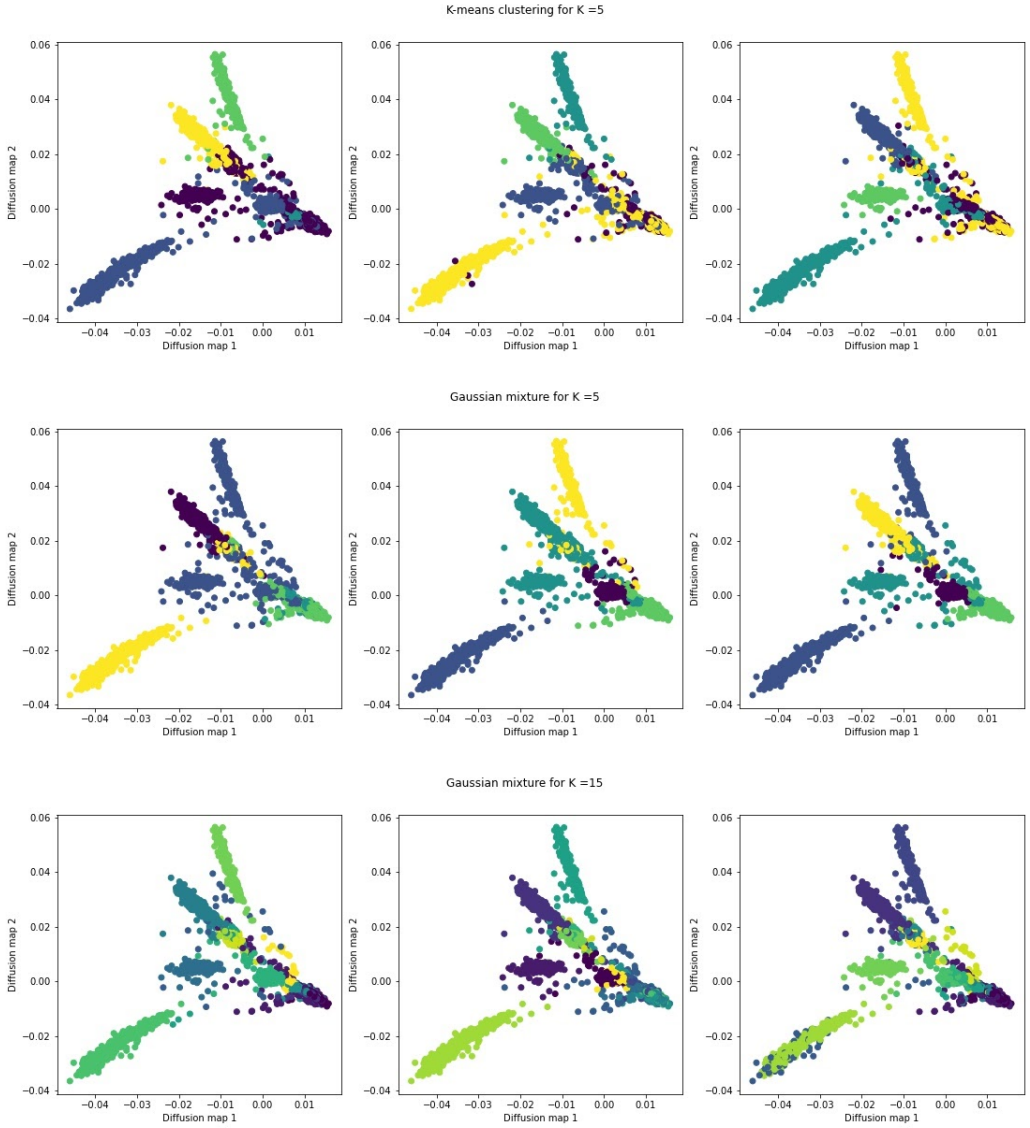
Table A3: Silhouette scores for spectral clustering

	K=5	K=15	K=25
Gussian	**54.68676217**	**152.6757539**	**276.4098606**
K-means	**6.166994373**	**32.179284**	**27.20417142**
Spectral	**571.7999817**	**508.568004**	**877.2455076**

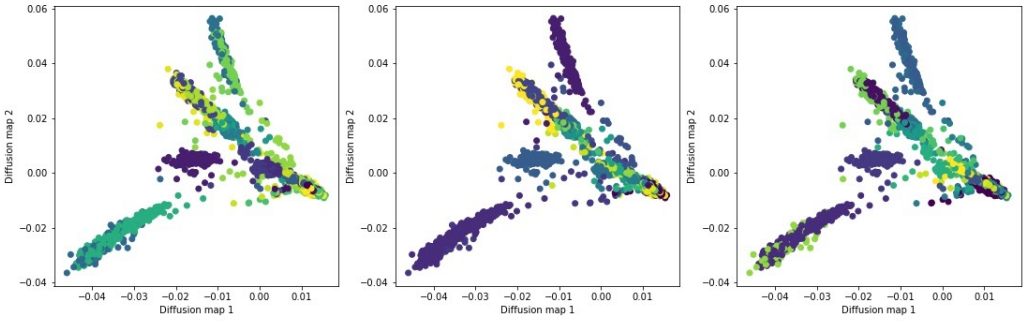
Table A4: Runtime for each algorithm under each K. Each entry is the average across four dimension reduction methods.

Appendix B: Figures of clustering results

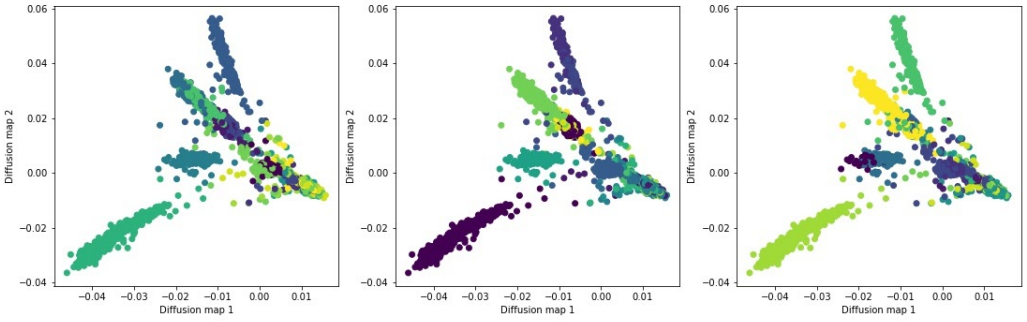
Each figure shows the coloring clusters in the dimension of the first two components for each dimensionality reduction method for each clustering algorithm for each K.



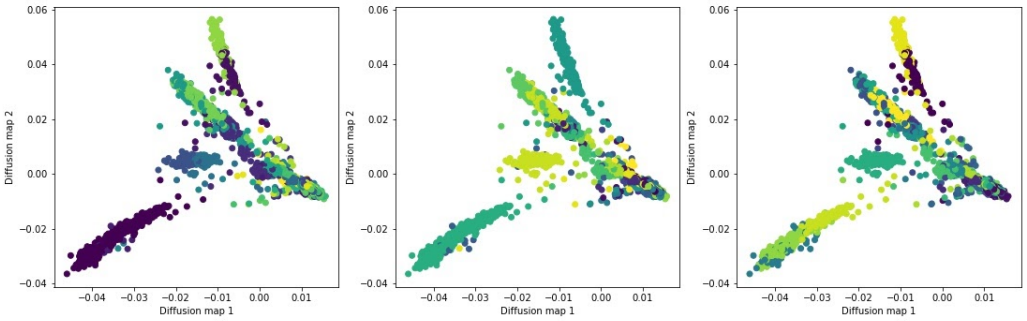
Gaussian mixture for K =25



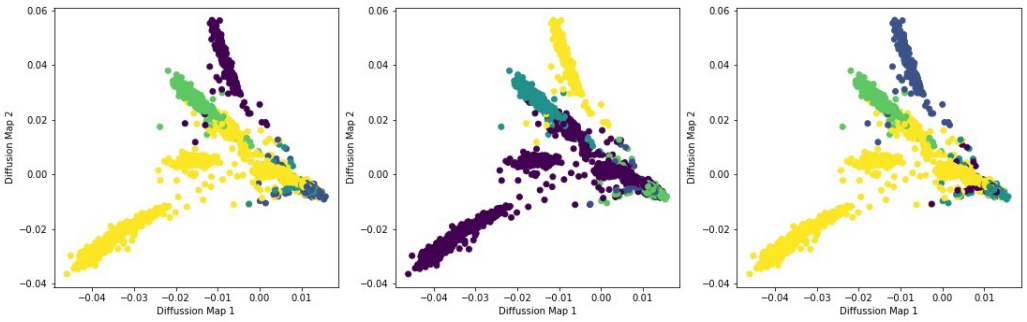
K-means clustering for K =15



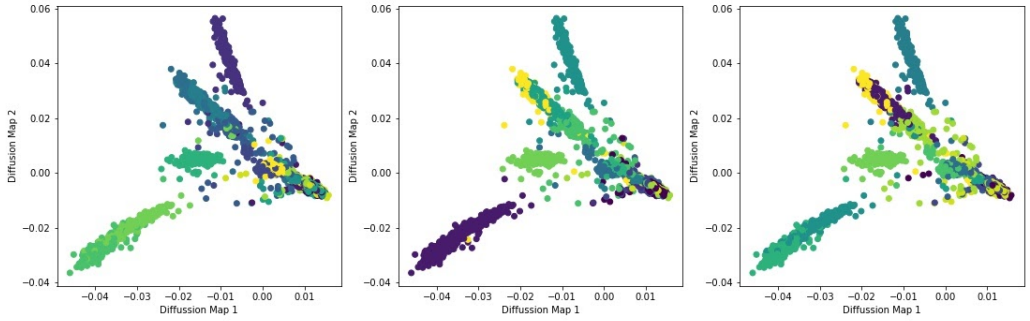
K-means clustering for K =25



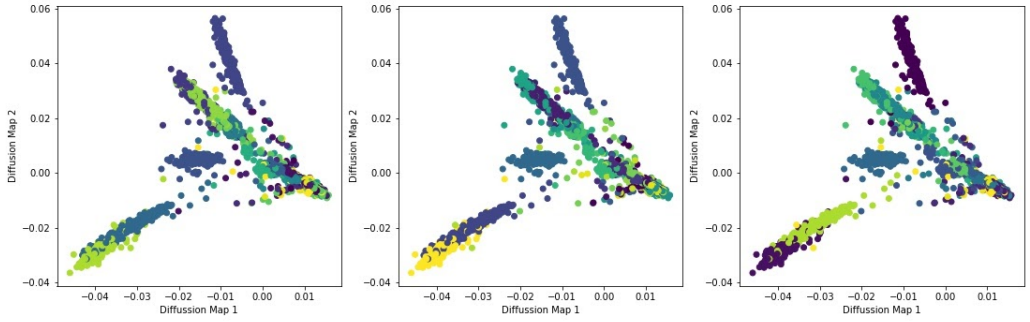
Spectural clustering for K =5



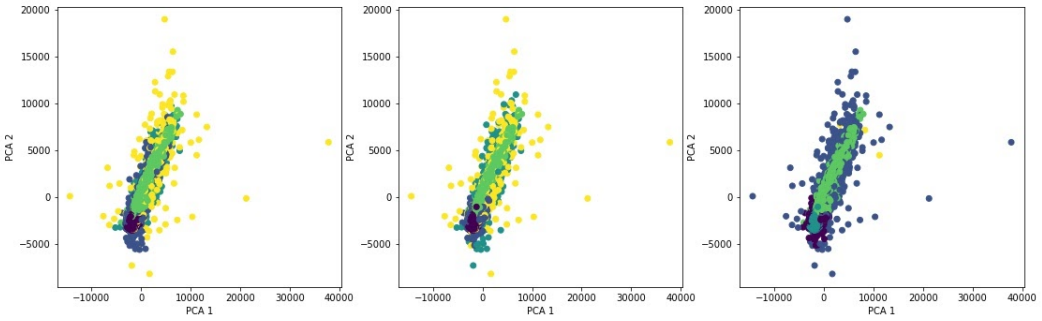
Spectural clustering for K =15



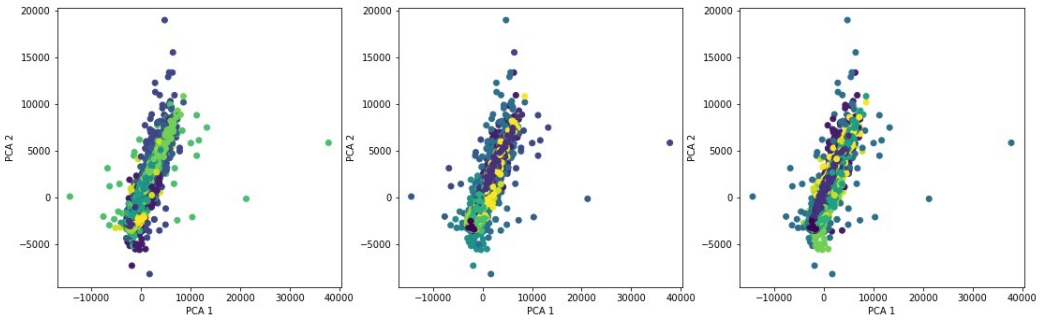
Spectural clustering for K =25



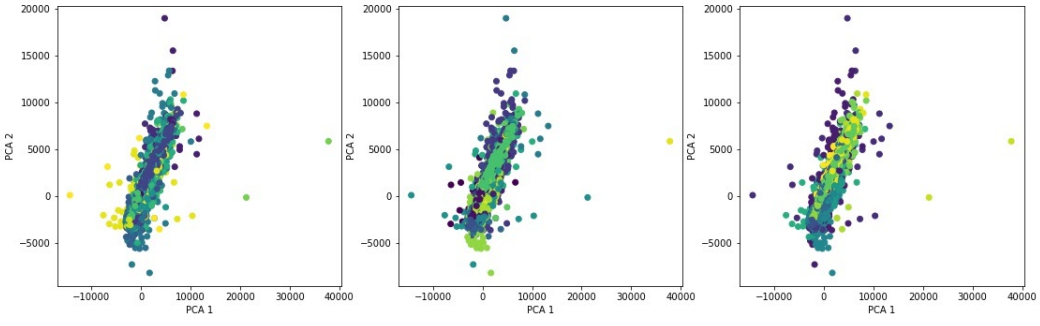
Gaussian mixture for K =5



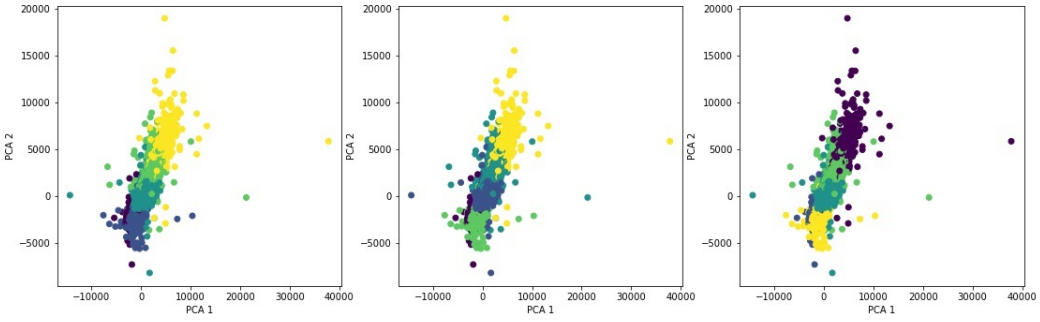
Gaussian mixture for K =15



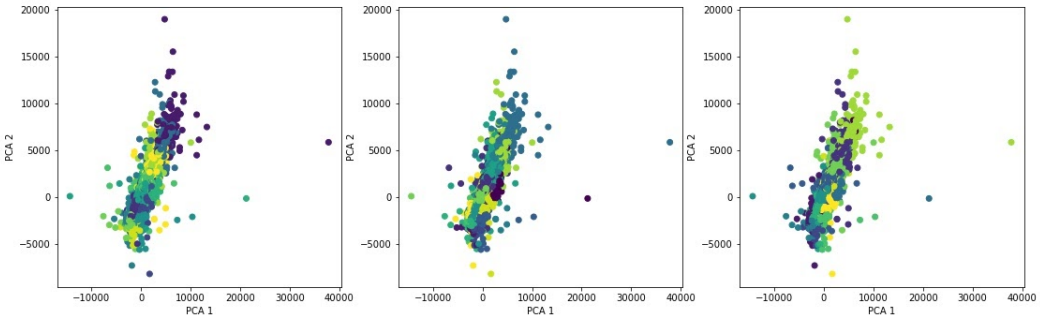
Gaussian mixture for K =25



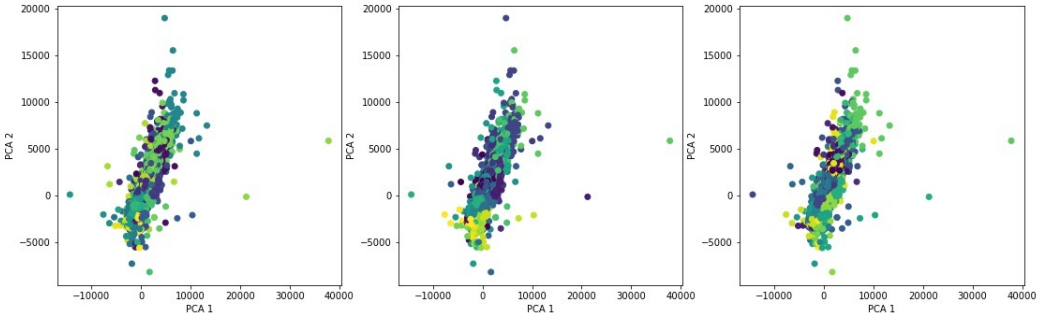
K-means clustering for K =5



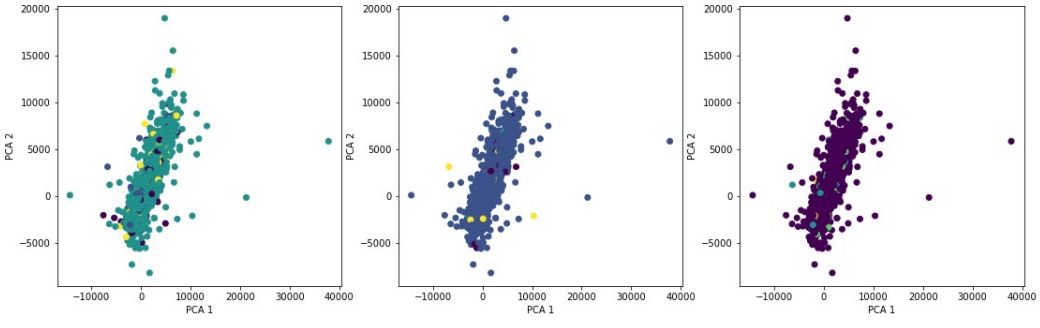
K-means clustering for K =15



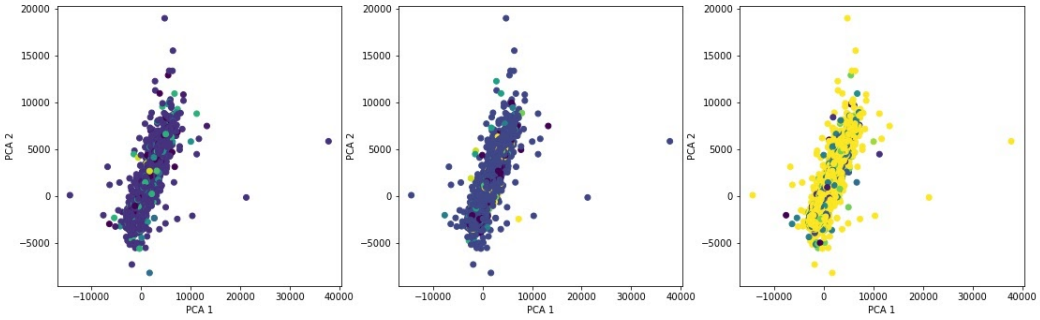
K-means clustering for K =25



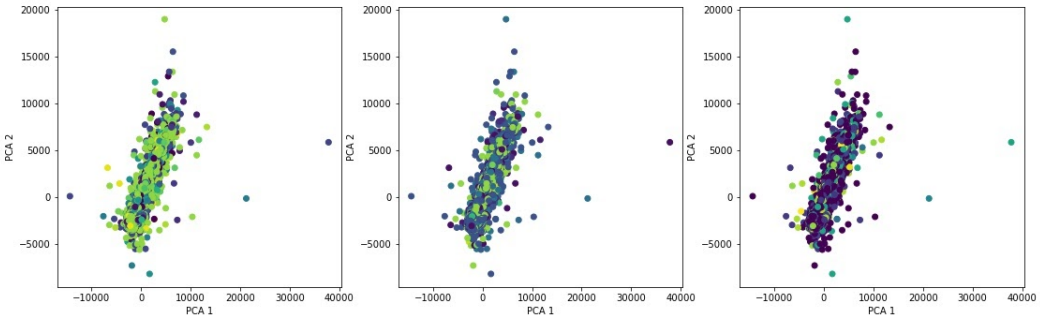
Spectural clustering for K =5



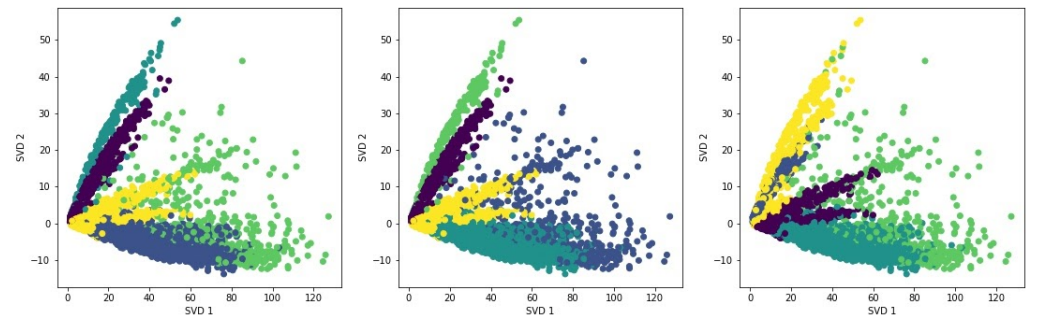
Spectural clustering for K =15



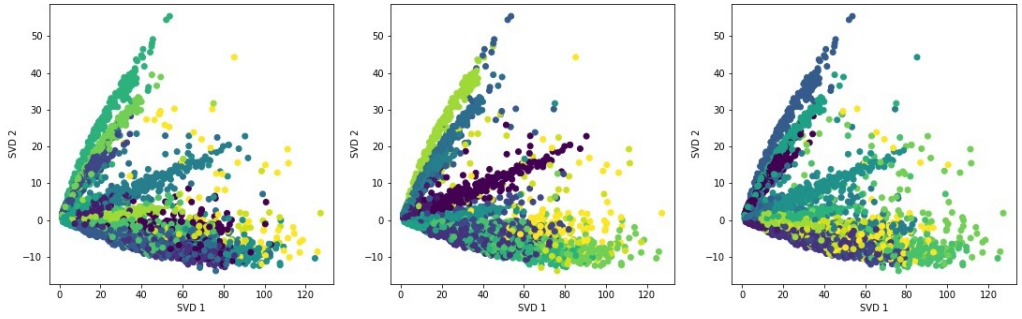
Spectural clustering for K =25



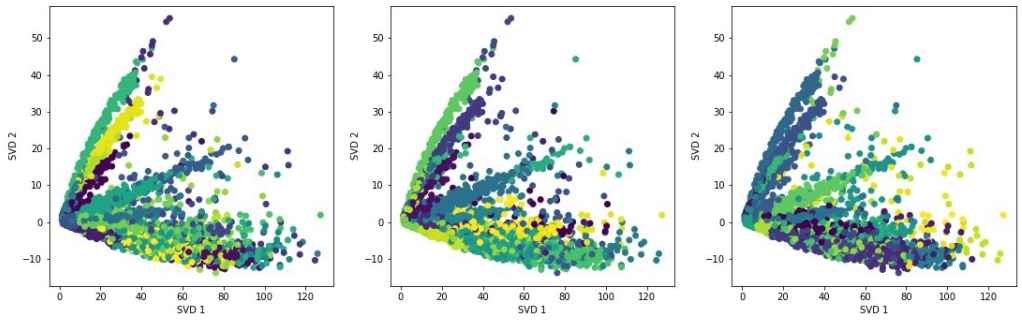
Gaussian mixture for K =5



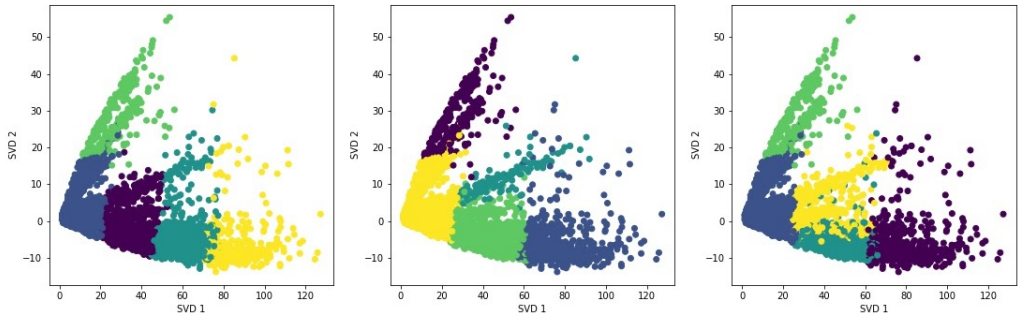
Gaussian mixture for K =15



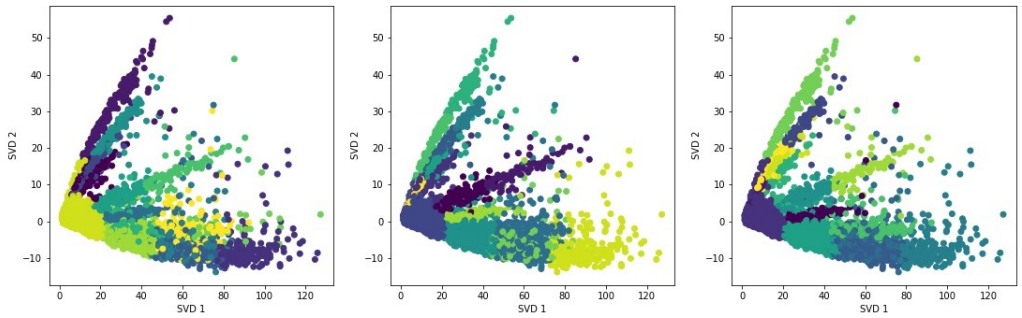
Gaussian mixture for K =25



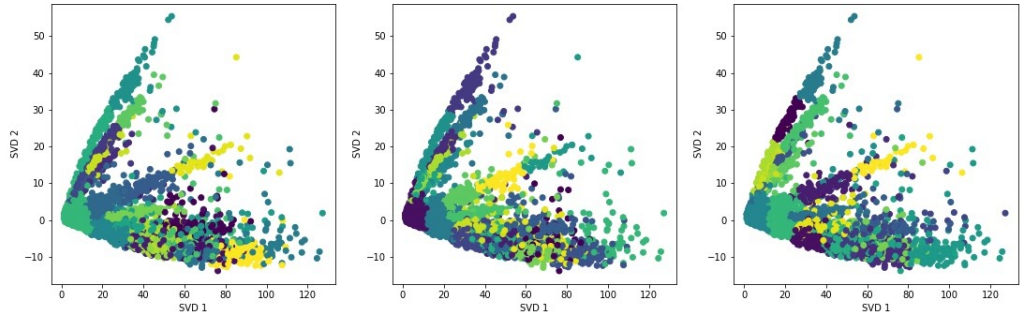
K-means clustering for K =5



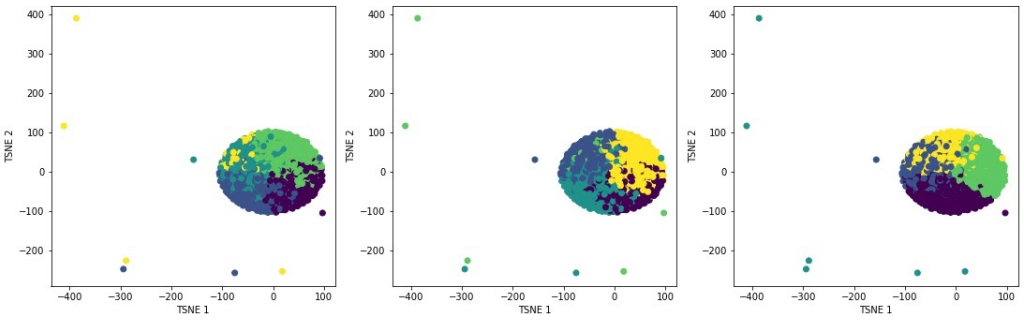
K-means clustering for K =15



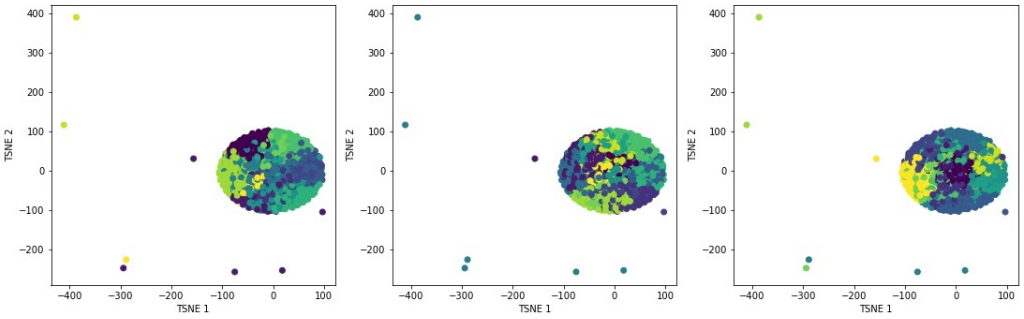
K-means clustering for K =25



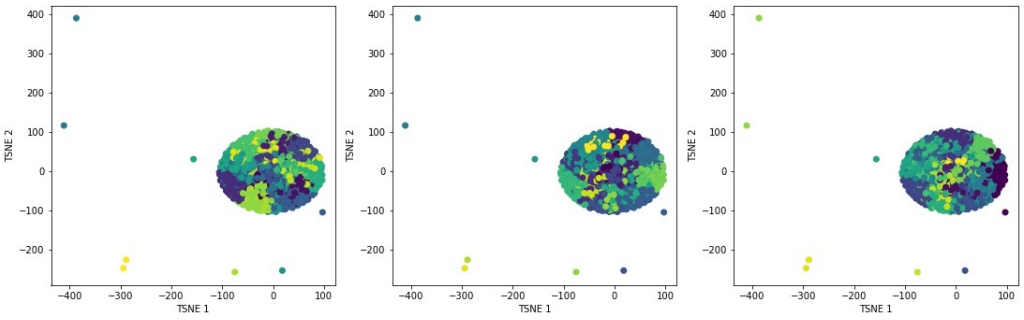
Gaussian mixture for K =5

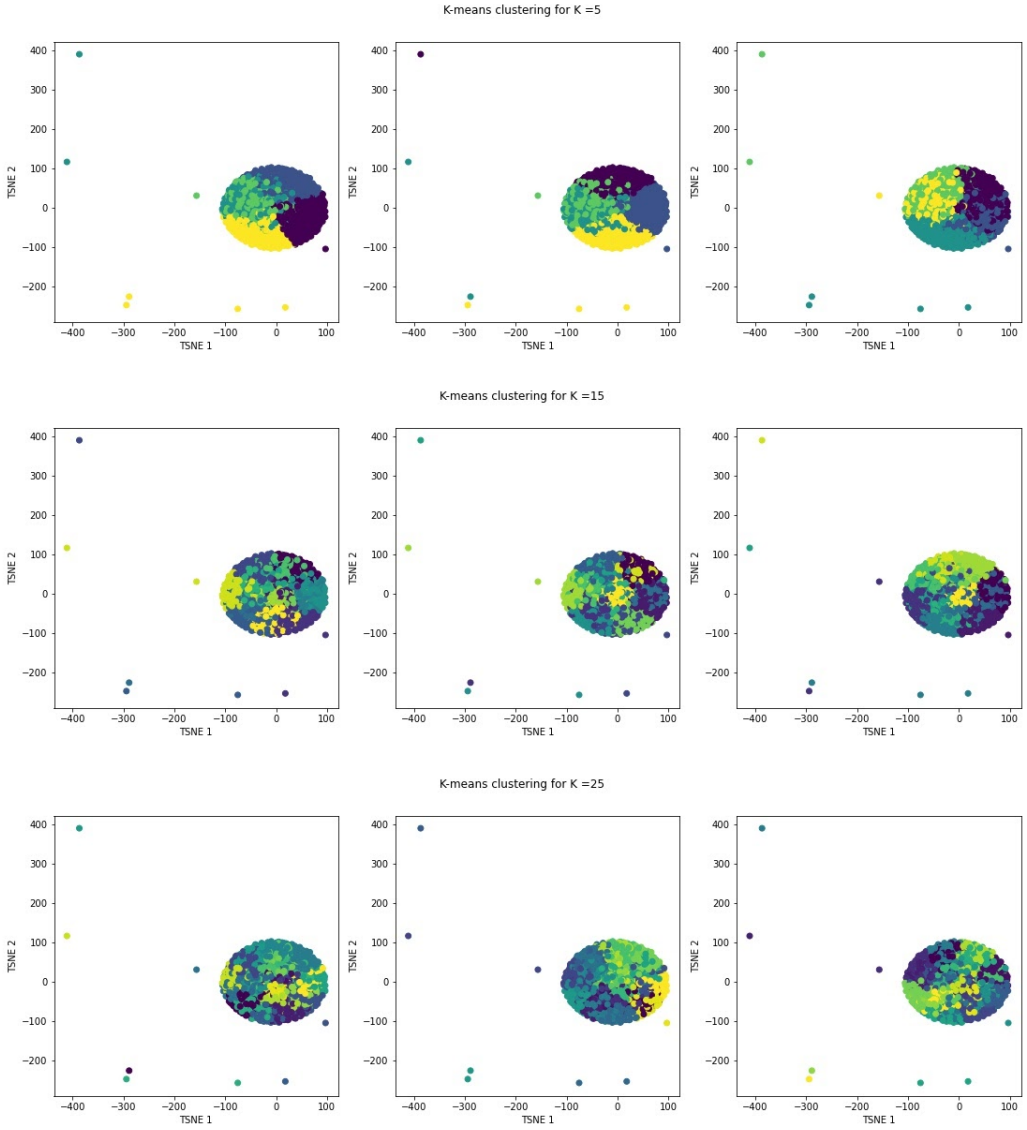


Gaussian mixture for K =15



Gaussian mixture for K =25





	K=5	K=15	K=25
Gussian	**0.122546716**	**0.127371401**	**0.133432097**
K-means	**0.248862246**	**0.246747541**	**0.239898787**
Spectral	**-0.05077577**	**-0.116470248**	**-0.153817646**

Table 1: Silhouette score for different combinations of number of clusters and clustering algorithms. Each entry shows the average across all four dimensionality reduction.