

Topics in Unsupervised Learning

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1 Synthetic data tests

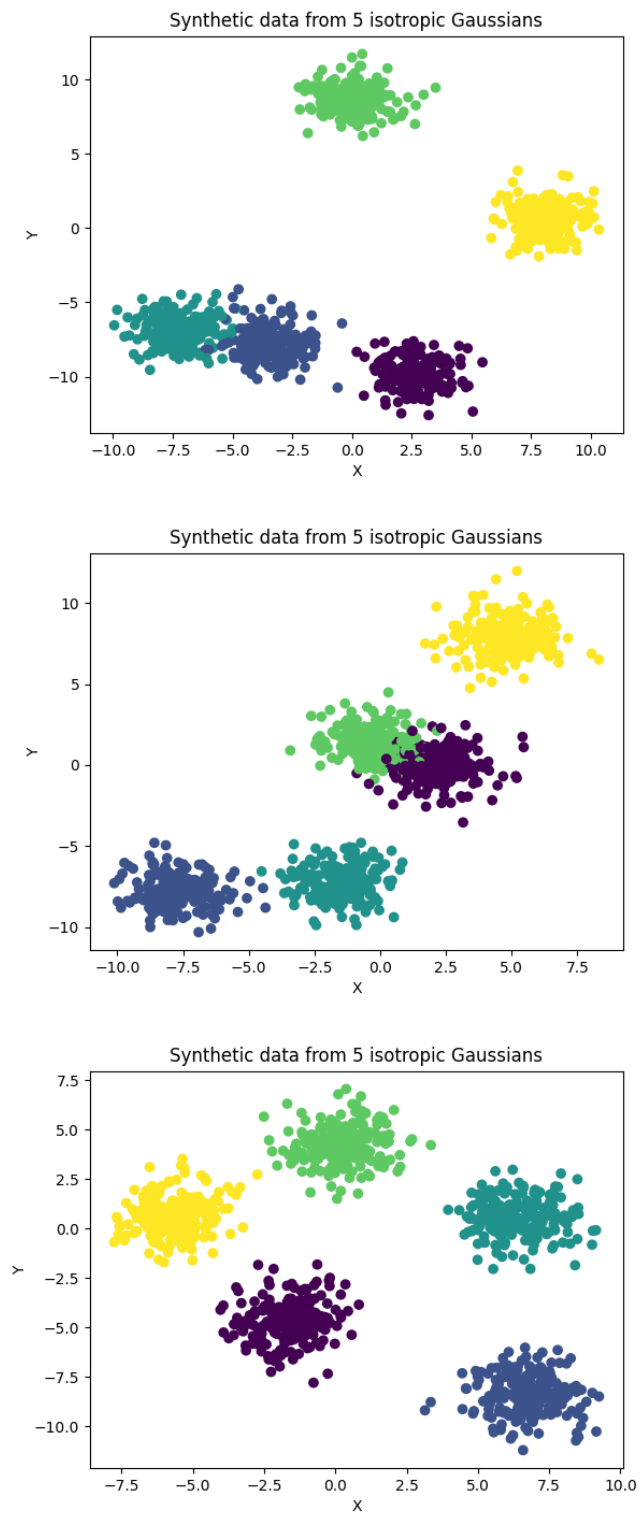


Figure 1: Different initialization results

1.1 K-means results (For the first initialization)

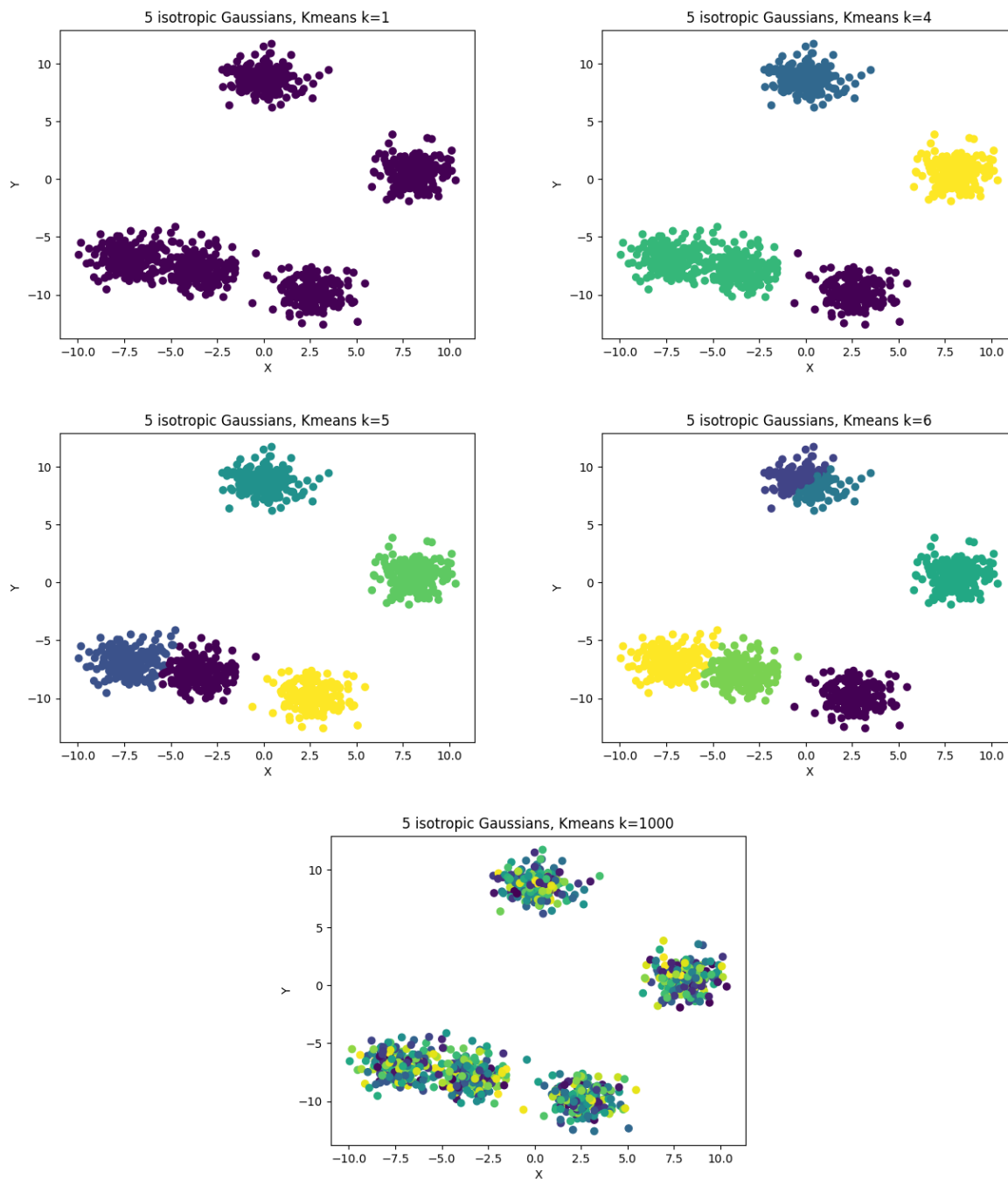


Figure 2: K-means clustering for synthetic data with different k values

1.2 PDC-DP results (For the first initialization)

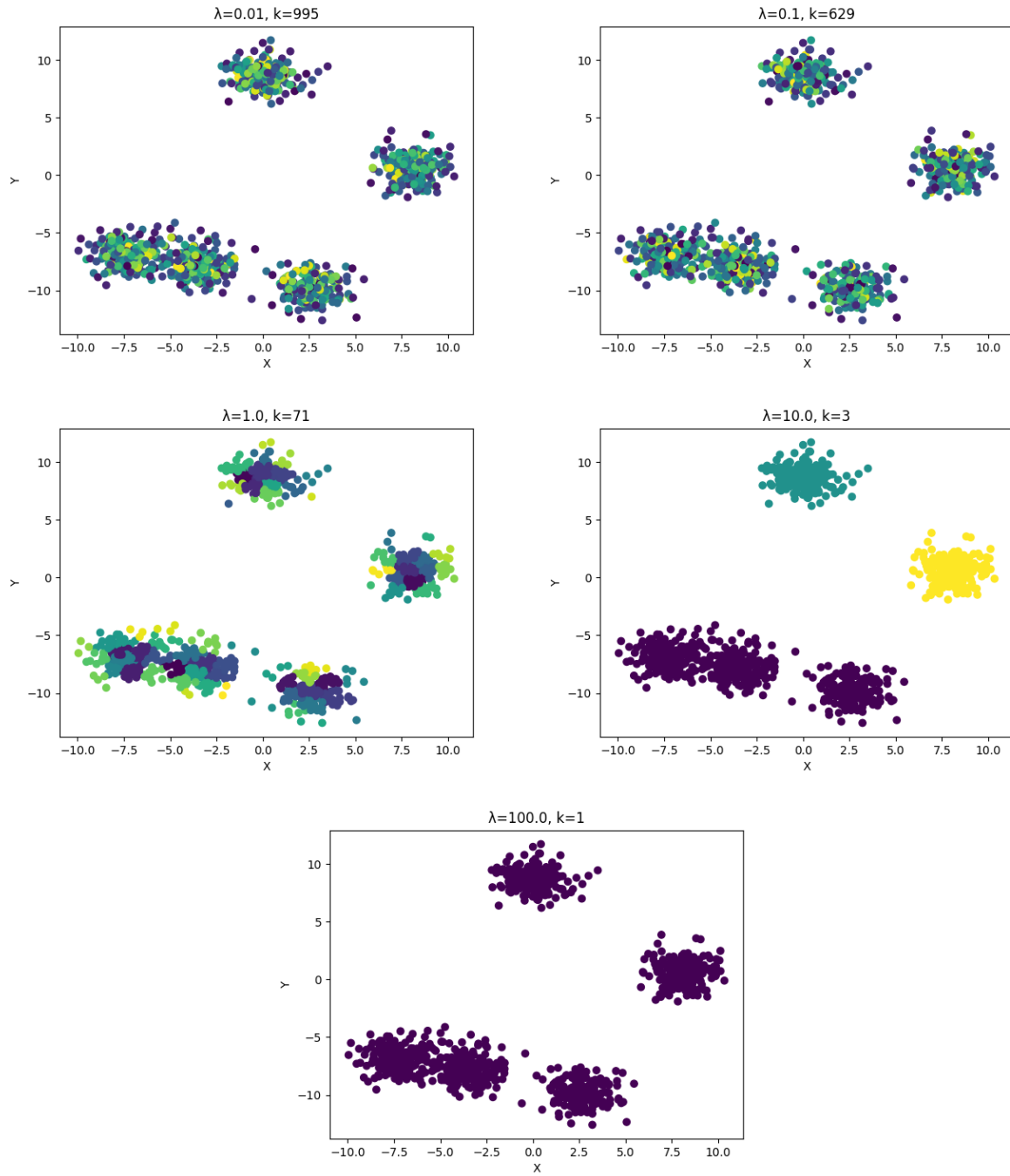


Figure 3: PDC-DP clustering for synthetic data with different λ values

2 Mandrill



Figure 4: Original image of a mandrill

2.1 K-means



$k = 5$



$k = 10$



$k = 20$



$k = 30$

Figure 5: K-means RGB clustering results

2.2 PDC-DP



$\lambda = 500$



$\lambda = 250$



$\lambda = 180$



$\lambda = 100$

Figure 6: PDC-DP RGB clustering results

3 Final project statement