

K-Means and GDA

This exercise is about unsupervised classification with K-Means and the EM-algorithm using a mixture of gaussian model. With random initialized parameter as given in the exercise discussion section, we obtain final models with the following parameter:

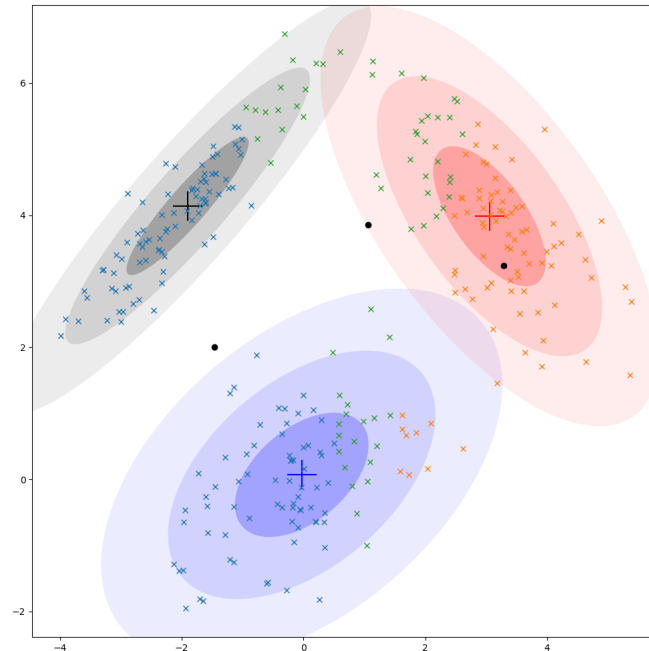


Figure 1: Resulting graph of the EM

Cluster	Phi	My	Sigma
1	0.33265	-0.02753, 0.06840	1.20495, 0.49881
2	0.33525	3.05502, 3.98327	0.85455, -0.63851
3	0.33210	-1.90212, 4.13922	1.00847, 0.96375

Table 1: Parameter of the EM-Run

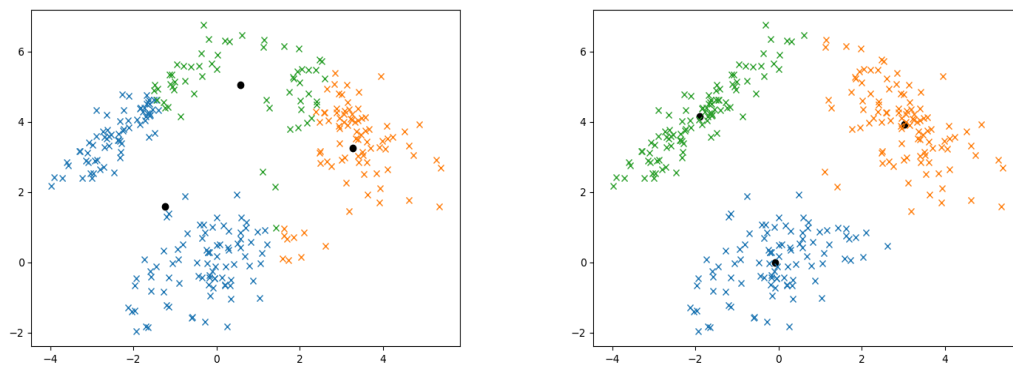


Figure 2: On the left you see the initial clusters, on the right side the final converged model with the params shown in Table 2

-0.08002533	0.00641307
3.03141955	3.92662538
-1.89468155	4.14767278

Table 2: Parameter for the k-means centroids