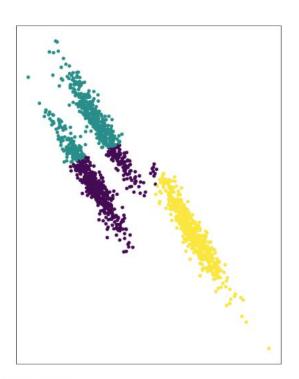
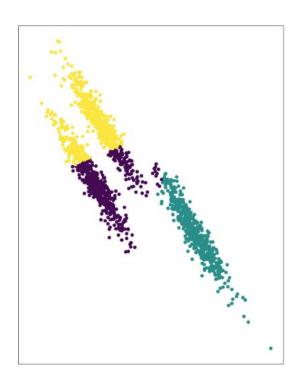
# Exercise 8

### Sindre Eik de Lange



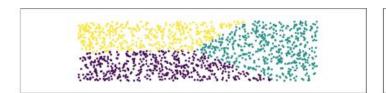


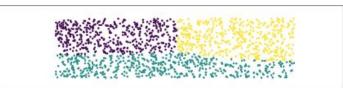
#### 1.3 Random Initialization

I would assume it could work to use random initialization of the centroids, because as stated in a previous task, the algorithms are able to converge towards to a minimum. However, it is also stated that this is a local minimum, which is why one would want to initialize the centroids in such a way that one optimizes the chances of converging towards the global minimum, or at least something close to it.

#### KMeans vs. Gaussian Mixture

KMeans works better when there are scarce ressources, and one has high dimensional (linear) data, while Gaussian Mixture works better when one has low dimensional (non-linear) data, and one does not necessarily care about the shape of the clusters.





## **Hierarchical Clustering**

