

Student ID: 1505022

Name: Mahim Mahbub

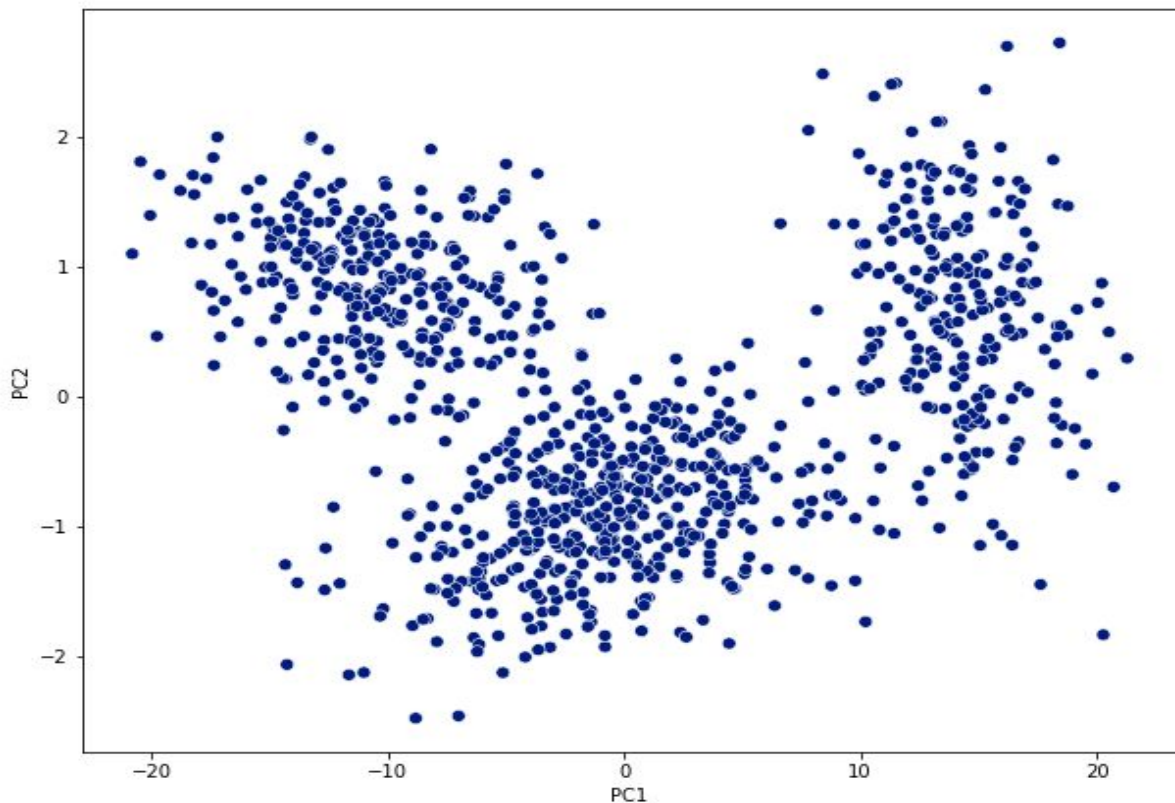
Course ID: CSE 472

Course Name: Machine Learning Sessional

Report on Machine Learning - Offline 3

1. PCA Plot

Initial Data shape = (1000, 100) i.e. 1000 data points, each with 100 features
For PCA, number of dimensions projected = 2



2. Parameters for each Gaussian Distribution (means, covariances, mixing coefficients)

We have used 3 Gaussians i.e. $K = 3$

- Mean for each Gaussian will be of length 2 (i.e. projected PCA dimension = D)
- Covariances for each Gaussian will be of size $(2, 2)$ i.e. (D, D)
- Mixing coefficients for each Gaussian will be just a single value

k	Means	Covariances	Mixing Coefficients
1	14.229340233141968, 0.675032498010211	6.93163073 -0.47123919 -0.47123919 0.66986255	0.2405849405
2	-10.410410299650245, 0.856101242294714	16.49219947 -0.6144441 -0.6144441 0.25004495	0.2996932893
3	-0.6600416766339946, -0.911358541814125	21.98920723 0.82892394 0.82892394 0.259813	0.4597207701

3. PCA plot after clustering

