

Machine Learning

Laboratory on unsupervised learning

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Set-up on Google Colab

Open the file on Google Colaboratory:



Figure 1: QR code to open Colab

Take-Home Assessment

Apply unsupervised learning techniques to explore, cluster, and interpret a dataset of your choice.

Steps:

- ① Choose an unsupervised dataset.
- ② Apply PCA as dimensionality reduction if needed.
- ③ Apply clustering algorithms: K-Means, Gaussian Mixture Models and DBSCAN.
- ④ Determine the optimal number of clusters using the Silhouette Score and Elbow Method.
- ⑤ Compare clustering methods and **explore other methods** in scikit-learn.



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Suggested Datasets

Here is a list of possible datasets you can choose from:

- ① Iris Dataset
- ② Mall Customers Dataset
- ③ MNIST
- ④ Fashion MNIST
- ⑤ CIFAR-10