

Machine Learning

Laboratory on unsupervised learning

Samuele Bortolotti Steve Azzolin

University of Trento

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Set-up on Google Colab

Open the file on Google Colaboratory:



Figure 1: QR code to open Colab

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.

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