

ED5340:Data Science: Theory and practice

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LAB 12 : PCA,SVM



Opened: Wednesday, 10 April 2024, 3:00 PM
Due: Saturday, 13 April 2024, 11:59 PM

Q.1 Support Vector Machine:

Data and other details are available at
<https://scikit-learn.org/stable/modules/generated/sklearn.svm.SVC.html>

Use the weblink and reproduce the result for SVM.

- 1. Implement SVM to classify the type of iris flower based on its sepal length and width using the iris dataset?
- 2. Also try to use the scikit-learn digits dataset and an SVM to classify handwritten digits?

For both datasets, provide a step-by-step code, including:

- 1. Loading the dataset
- 2. Visualizing the data
- 3. Splitting the data into training and testing sets
- 4. Initializing and training the SVM model
- 5. Testing the model

Q. 2 Principal Component Analysis:

- 1. To do PCA, use the Eigen decomposition available in numpy. The dataset can be obtained from https://scikit-learn.org/stable/auto_examples/decomposition/plot_pca_3d.html#sphx-glr-auto-examples-decomposition-plot-pca-3d-py.
- 2. DO NOT USE the code available for PCA in the same link (as mentioned above, use numpy's Eigen decomposition).
- 3. Compare your results with the one available in the link (here, you are free to use the code available in the link to generate any numbers for comparison).
- 4. Are you getting the same result?

Submission status

Submission status	Submitted for grading
	This assignment is not accepting submissions
Grading status	Graded

Time remaining	Assignment was submitted 15 mins 4 secs early
Last modified	Saturday, 13 April 2024, 11:43 PM
File submissions	<div><div><div><div></div></div><div><div>AM23M022 LAB12_10_04_2024.py</div><div>13 April 2024, 11:43 PM</div></div></div></div>
Submission comments	<div><div></div><div><div>▶</div><div>Comments (0)</div></div></div>

Feedback

Grade	9.50 / 10.00
Graded on	Wednesday, 29 May 2024, 2:11 PM
Graded by	eS ed19b032 SIVAHARI A

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