BerkeleyX: CS190.1x Scalable Machine Learning

SUBMITTING LAB5: PCA (100/100 points)

Once you have successfully run the test notebook, you can submit to the course autograder by first **exporting lab5 as a Python (.py) file**, and then using the file chooser to select your file and clicking *"Check"* to submit your code.

Before submitting your assignment, please ensure that your submission follows these guidelines:

- Only use the following libraries: standard python libraries, numpy, pyspark, and test_helper (the autograder library).
- Don't include any extraneous code as the autograder will timeout if a submission takes too long.
- Only change sections of code where you see FILL IN. Changing other parts of the code, including directory paths, may cause the code to fail the autograder's tests.
- The autograder grades submissions using the same tests that are included in your notebook. Hence, please run the local tests before submitting to the autograder.

For further background on the autograder please visit this page with the information from Week 0 and the autograder FAQ. To check the status of your submission, please visit the autograder submission website.

This is the autograder only for your submission of "Lab5 - PCA". Please **DO NOT submit other labs to this autograder.**

Choose Files No file chosen

```
Interpreting PCA (1a)
---------------------
All tests passed
Sample covariance matrix (1b)
-----------------------------
All tests passed
Covariance function (1c)
------------------------
All tests passed
Eigendecomposition (1d)
-----------------------
All tests passed
PCA Scores (1e)
---------------
All tests passed
PCA Function (2a)
-----------------
All tests passed
PCA on `dataRandom` (2b)
------------------------
All tests passed
```

```
3D to 2D (2c)
-------------
All tests passed
Variance explained (2d)
-----------------------
All tests passed
Parse the data (3b)
-------------------
All tests passed
Min and max flouresence (3c)
----------------------------
All tests passed
Fractional signal change (3d)
-----------------------------
All tests passed
PCA on the scaled data (3e)
---------------------------
All tests passed
Aggregation using arrays (4a)
-----------------------------
All tests passed
Recreate with `np.tile` and `np.eye` (4b)
-----------------------------------------
All tests passed
Recreate with `np.kron` (4c)
----------------------------
All tests passed
Aggregate by time (4d)
----------------------
All tests passed
Obtain a compact representation (4e)
------------------------------------
All tests passed
Aggregate by direction (4f)
---------------------------
All tests passed
Compact representation of direction data (4g)
---------------------------------------------
All tests passed
-- 20 cases passed (100.0%) --


Your submission token ID is 2137592-72a06c283c8b23af446e50e402d48a87:ip-172-31-23-92
Please include this submission token ID when you need support for your code submission.
Your anonymous student ID is d9e65bc8d252ec579ef766790c87772e. Do not post this ID on
Piazza.
```

CHECK **SAVE** *You have used 1 of 10 submissions*