Quiz 1

Due Jan 24 at 11:59pm **Points** 100 **Questions** 1
Available Jan 21 at 12am - Jan 24 at 11:59pm 4 days **Time Limit** None

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	4,637 minutes	100 out of 100

Correct answers will be available on Jan 25 at 10am.

Score for this quiz: **100** out of 100
Submitted Jan 24 at 4:55pm
This attempt took 4,637 minutes.

Question 1 — 100 / 100 pts

In the dataset **iris-sub2-train.csv** (https://usflearn.instructure.com/courses/1737304/files/129690054/download?download_frd=1) , there are 30 instances from 3 classes of the iris plant (10 from each class). For each instance, there are 4 real-valued features. The class label for each instance is given in the last column.

Fit a (4-dimensional) multivariate Gaussian to the above training data for each class using the unbiased maximum likelihood (ML) parameter estimation for the mean vector and the covariance matrix (i.e., 3 multivariate Gaussians for 3 classes).

Then, for each instance in the test data **iris-sub2-test.csv** (https://usflearn.instructure.com/courses/1737304/files/129690110/download?download_frd=1) , compute the likelihood under each of the 3 trained models (multi-variate Gaussians). Assuming equal prior probabilities for each class, classify each test instance based on the 3 likelihood values.

If the true labels for the test set are [Iris-setosa, Iris-setosa, Iris-setosa, Iris-setosa, Iris-setosa, Iris-versicolor, Iris-versicolor, Iris-versicolor, Iris-versicolor, Iris-versicolor, Iris-virginica, Iris-virginica, Iris-virginica, Iris-virginica, Iris-virginica], what is the misclassification rate=#misclassified instances/#test instances?

[Hint: You can use the numpy functions to compute the mean and covariance for each class, and a scipy.stats function to compute the multivariate Gaussian pdf (i.e., likelihood) under each model.]

- 0
- 0.067
- 0.133
- 0.2
- 0.267
- 0.333

Quiz Score: **100** out of 100