

CS 5542 lab 6 report

1. Spark Programming:

Write a spark program for the following Machine Learning Task. Create your own dataset for Image Classification/Object Detection Problem. Handle fuzzy classification/object detection task using at least two classification algorithms (e.g., Decision Tree, Random Forest, Naïve Bayes). Report the accuracy and confusion matrix obtained. In the Wiki Page, include a brief description of your dataset and your approach and results for image classification

Dataset description:

this time i create a dataset based on the chimpanzees daily movement, which take certain chimpanzee's location at the same time everyday, for example, everyday's 10:00am and 12:00 pm and 14:00 pm, record the data for one week, set the location info as the feature data and in the following weeks, record the location information as test data. then run the decision tree model and also the random forest model.

screenshots:

DT:

```
2.0 : (0,0.0);
11,0.0);
12,100.0)
```

```
0.0 : (0,33.33333333333333);
11,33.33333333333333;
12,33.33333333333333)
```

```
1.0 : (0,0.0);
11,66.66666666666667);
12,33.33333333333333);
12.0,2.0)
12.0,0.0)
11.0,1.0)
Accuracy:0.6666666666666665
Confusion Matrix:
0.0 0.0 1.0
0.0 1.0 0.0
0.0 0.0 1.0
```

```
Process finished with exit code 0
```

RF:

```
2.0 : (0,58.0);  
(1,58.0);  
(2,8.0)  
  
0.0 : (0,8.0);  
(1,100.0);  
(2,8.0)  
  
1.0 : (0,33.333333333333336);  
(1,55.66666666666667);  
(2,8.0)  
(1.0,7.0)  
(1.0,8.0)  
(1.0,1.0)  
Accuracy:0.3333333333333333  
Confusion Matrix:  
0.0 1.0 8.0  
0.0 1.0 8.0  
0.0 1.0 8.0  
  
Process finished with exit code 0
```

2.Android Application using Spark API/Clarifai API

Write an Android application 1)Image classification (fuzzy) and object detection through the Spark API 2)Image classification/object detection using Clarifai API <https://www.clarifai.com/api>
Refer to Tutorial 6 for fuzzy image classification/object detection Refer to Tutorial 5 Spark API tutorial. Refer to Tutorial 3 Clarifai API tutorial.

Description: i build the Android Clarifai API with basic feature that classify and detect object, download the image within the android emulator, and choose the image that which is talking about the Chinese Great Wall, get the response and show the probability result, please check out the following result screenshot:



Description: about the spark api, i build the android application refer to the tutorial, in the same way, i choose the Great Wall image, and the spark api will detect what's inside the image and show the result on the screen, here is the screenshot of the result:

