Alok Mishra(2011CS1016) Machine Learning(ML) HW5 Part2

I have used decision stumps as weak classifiers. There are ten random folds.
There are 10 weak classifiers.
Top 30 lines of the code has four important variables:
NumWeakClassifier = an integer(10, 15 etc);

%The magic number, required due to RAM constraints, increase this value if
%your system has enough RAM (>= 4GB).
magic_number = an integer(50, 100 etc);

%The proportion taken from source dataset
ratio_source = a fraction(0.5 etc);

%The proportion taken from target dataset
ratio_target = a fraction(0.4 etc);

Below are the results for some of the values of these variables.
Please note that the accuracy is really less in some of the cases. It's because decision stumps are really weak classifiers.
The accuracy goes above 80% for some values of these variables.
The accuracy is in fractions(0.80 for 80%).

---

accuracy =

0.7907
0.7873
0.8023
0.7851
0.7862
0.8323
0.7779
0.8001
0.7540
0.7812

accuracy_avg =

0.7897

sd =

3.9132
4.2516
4.0511
4.2184
4.1309
4.1733
4.6201

4.1854
3.9851
4.1995

sd_avg =

4.1729

For

```
%The number of weak classifier(tree)
NumWeakClassifier = 10;

%The magic number, required due to RAM constraints, increase this value if
%your system has enough RAM (>= 4GB).
magic_number = 50;

%The proportion taken from source dataset
ratio_source = 0.2;

%The proportion taken from target dataset
ratio_target = 0.2;
```

---

accuracy =

0.7913
0.6975
0.7896
0.7837
0.7878
0.7790
0.8101
0.7937
0.8236
0.7902

accuracy_avg =

0.7846

sd =

4.0800
4.1755
4.0057
4.1933
4.0963
4.1477
4.1758
4.1225

4.1471
4.1397

sd_avg =

4.1284

for

```
%The number of weak classifier(tree)
NumWeakClassifier = 10;

%The magic number, required due to RAM constraints, increase this value if
%your system has enough RAM (>= 4GB).
magic_number = 50;

%The proportion taken from source dataset
ratio_source = 0.1;

%The proportion taken from target dataset
ratio_target = 0.1;
```

---

accuracy =

0.7830
0.7896
0.7190
0.8193
0.7988
0.8080
0.7803
0.8179
0.8292
0.7355

accuracy_avg =

0.7881

sd =

4.1047
4.1530
4.0773
4.1592
4.0921
4.1474
4.2486
4.1396
4.2146
4.2958

sd_avg =

   4.1632

for
%The number of weak classifier(tree)
NumWeakClassifier = 10;

%The magic number, required due to RAM constraints, increase this value if
%your system has enough RAM (>= 4GB).
magic_number = 50;

%The proportion taken from source dataset
ratio_source = 0.2;

%The proportion taken from target dataset
ratio_target = 0.2;

---
accuracy =

   0.5217
   0.6366
   0.5217
   0.5211
   0.6665
   0.5205
   0.5164
   0.5188
   0.5193
   0.7151

accuracy_avg =

   0.5658

sd =

   7.5316
   7.4113
   7.5249
   7.5416
   7.3988
   7.5293
   7.5084
   7.5236
   7.5176
   6.7127
sd_avg =

7.4200

for

```
%The number of weak classifier(tree)
NumWeakClassifier = 15;
        %The magic number, required due to RAM constraints, increase this value if
%your system has enough RAM (>= 4GB).
magic_number = 20;

%The proportion taken from source dataset
ratio_source = 0.5;

%The proportion taken from target dataset
 ratio_target = 0.1;
```

---

accuracy =

0.7111
0.6708
0.7467
0.5191
0.5218
0.7982
0.5211
0.5158
0.7401
0.6689

accuracy_avg =

0.6414

sd =

6.9913
7.4045
6.8517
7.5131
7.5344
6.4299
7.5243
7.5137
6.7510
7.4181

sd_avg =

7.1932

for
 %The number of weak classifier(tree)
NumWeakClassifier = 15;

%The magic number, required due to RAM constraints, increase this value if
%your system has enough RAM (>= 4GB).
magic_number = 20;

%The proportion taken from source dataset
ratio_source = 0.5;

%The proportion taken from target dataset
ratio_target = 0.2;

---

accuracy =

   0.5214
   0.5214
   0.5208
   0.5197
   0.5214
   0.5186
   0.5203
   0.5203
   0.5203
   0.5214

accuracy_avg =

   0.5205

sd =

   7.5278
   7.5368
   7.5352
   7.5097
   7.5433
   7.4994
   7.5211
   7.5347
   7.5234
   7.5367

sd_avg =

7.5268

for

```
%The number of weak classifier(tree)
NumWeakClassifier = 15;

%The magic number, required due to RAM constraints, increase this value if
%your system has enough RAM (>= 4GB).
magic_number = 20;

%The proportion taken from source dataset
ratio_source = 0.5;

%The proportion taken from target dataset
ratio_target = 0.05;
```

---

accuracy =

0.5200
0.5205
0.5892
0.6686
0.5189
0.6686
0.5392
0.5402
0.5200
0.5200

accuracy_avg =

0.5605

sd =

7.5269
7.5424
7.4547
7.3712
7.5588
7.4480
7.0448
6.9917
7.5014
7.4994

sd_avg =

7.3939

for

```
%The number of weak classifier(tree)
NumWeakClassifier = 15;

%The magic number, required due to RAM constraints, increase this value if
%your system has enough RAM (>= 4GB).
magic_number = 20;

%The proportion taken from source dataset
ratio_source = 0.5;

%The proportion taken from target dataset
ratio_target = 0.01;
```

---

accuracy =

0.5200
0.5248
0.5892
0.6686
0.5226
0.6686
0.5392
0.5402
0.5200
0.5200

accuracy_avg =

0.5613

sd =

5.0257
5.0357
4.9303
4.8475
5.0607
4.8974
4.6874
4.6645
5.0073
5.0053

sd_avg =

    4.9162

for

```
%The number of weak classifier(tree)
NumWeakClassifier = 10;

%The magic number, required due to RAM constraints, increase this value if
%your system has enough RAM (>= 4GB).
magic_number = 20;

%The proportion taken from source dataset
ratio_source = 0.5;

%The proportion taken from target dataset
ratio_target = 0.01;
```
