

FA19-BCS-131

Syed Hamza Imran

IDS

Question no 1

- (1): The Given Dataset had 80 Instances.
 - (2): The given Dataset had 7 input instances.
 - (3): output attribute had 2 possible values (male/female)
 - (4): Four of the given input attributes were categorical
 - (5): In the given Dataset, 46 instances were classified as Male and 34 were classified as female
- So the Ration between them was $A = 46$, $B=34$,

Question no 2

- (1) All instances were classified correctly when we applied Random Forest Model.
30 instances were wrongly classified when we Apply MLP Classifier.
16 instances were wrongly classified when we Apply SVC model.
- (2) Changed the Split ratio to 80/20
All instances were classified correctly when we applied Random Forest Model.
26 instances were wrongly classified when we Apply MLP Classifier.
15 instances were wrongly classified when we Apply SVC model.
- (3) The Most powerful 2 attributes in this Data are 'beard' And 'hair-length'
Because beard is the type of attribute which is key factor while determining the gender no matter what region of what type of data we have, and other factor is hear length the because is the most rare to be likely similar for both male and female.
- (4) After removing these two attributes there was
No Difference when we applied Random Forest Model
Accuracy Dropped (to 62.5) a little when we applied MLP Classifier.
Accuracy of SVC remained Constant.

Question no 3

F1 Score when we applied Monte-Carlo Cross Validation was 0.955242075931731
F1 Score when we applied P out cross validation 0.9397151898734177

Question no 4

Sample Instances that were Added:

62	142	yes	long	37	no	blue	female
67	132	No	short	41	no	brown	male
62	83	No	long	36	yes	brown	female
63	96	No	long	36	no	black	female
44	60	No	short	24	no	black	male
66	185	no	medium	40	no	black	female

After Applying the given Model The Accuracy on the gives sample test data was 60%
And

	Precision	Recall	F1	
female	0.00	0.00	0.00	2
male	0.60	1.00	0.75	3
accuracy			0.60	5
macro avg	0.30	0.50	0.37	5
weighted avg	0.36	0.60	0.45	5