Name: Bhavesh Kewalramani

Roll No.: A-25

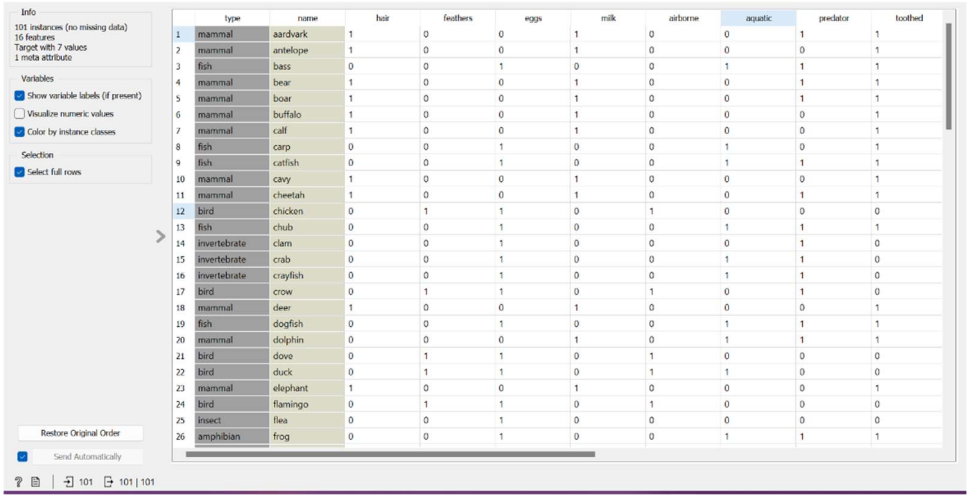
Section: A

Semester: VII

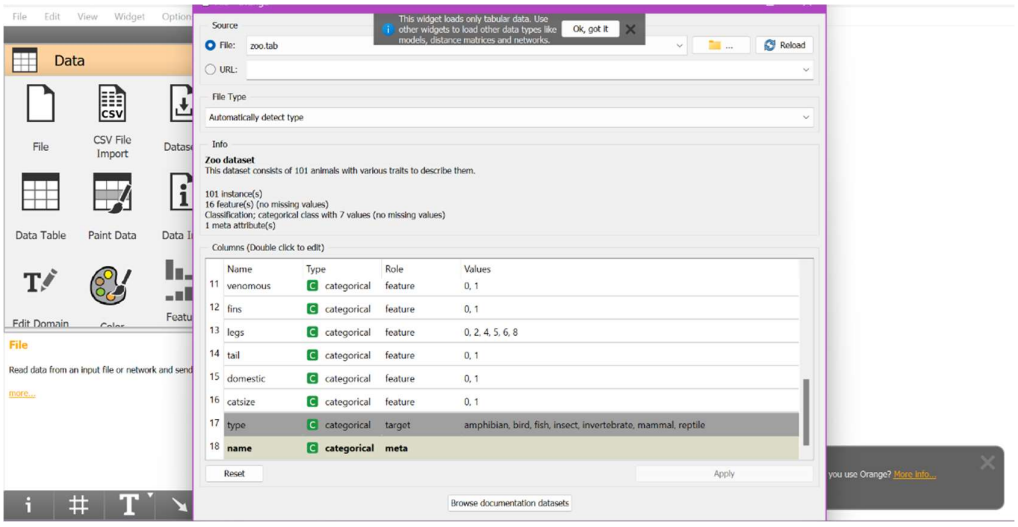
Shift: I

Batch: A1

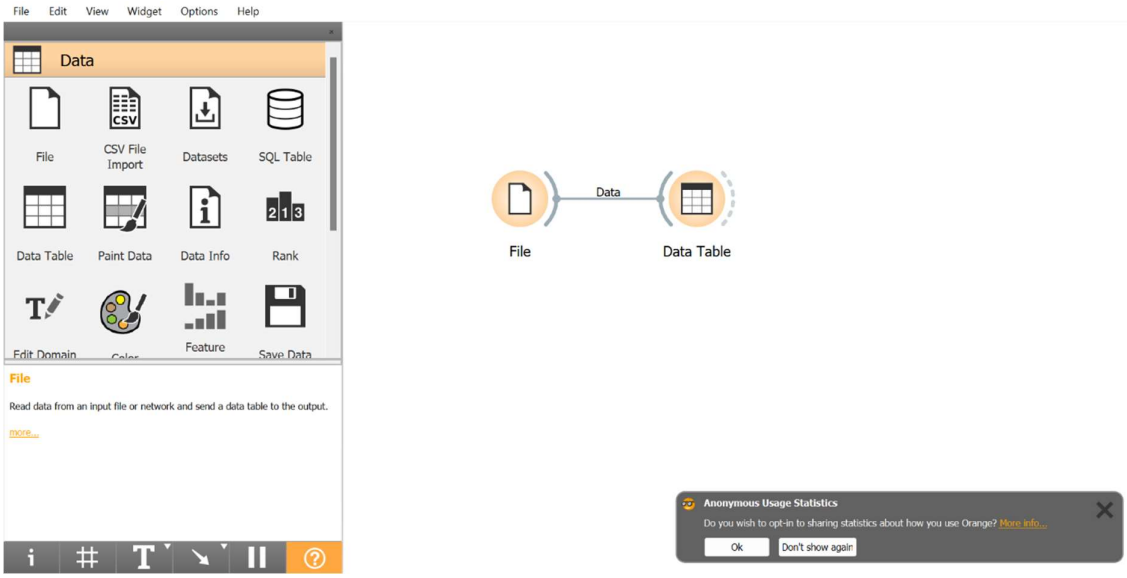
PART(B): Visualization using Orange Tool

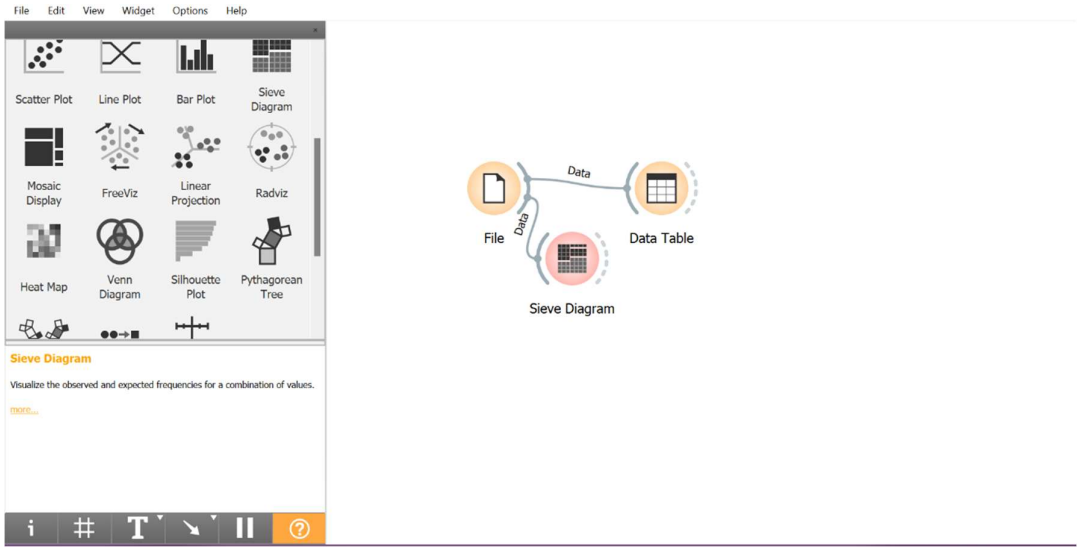


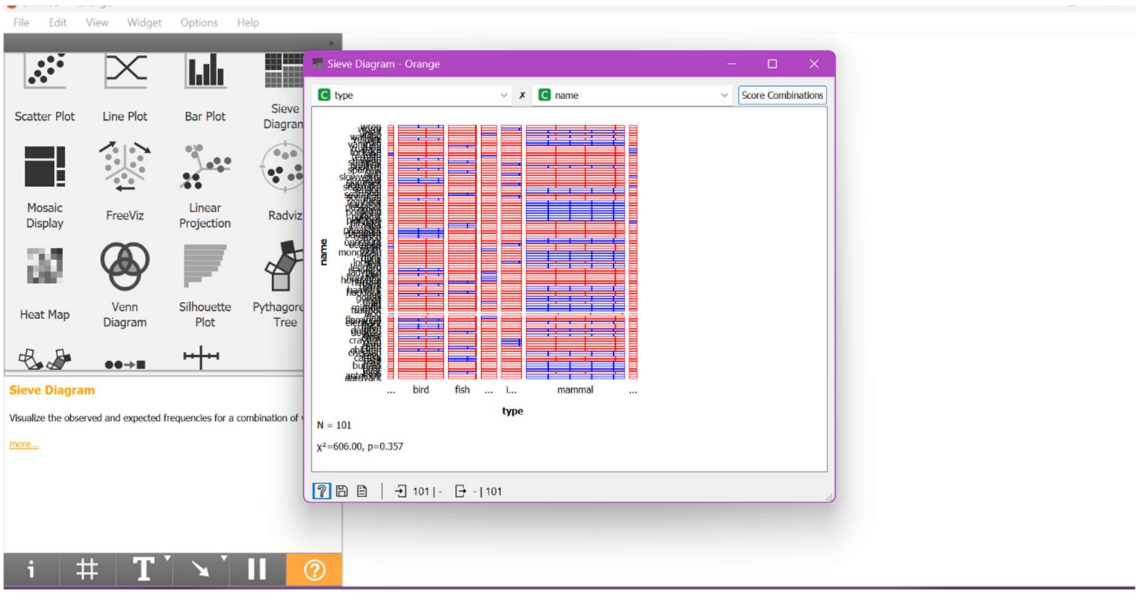
	type	name	hair	feathers	eggs	milk	airborne	aquatic	predator	toothed
1	mammal	aardvark	1	0	0	1	0	0	1	1
2	mammal	antelope	1	0	0	1	0	0	0	1
3	fish	bass	0	0	1	0	0	1	1	1
4	mammal	bear	1	0	0	1	0	0	1	1
5	mammal	boar	1	0	0	1	0	0	1	1
6	mammal	buffalo	1	0	0	1	0	0	0	1
7	mammal	calf	1	0	0	1	0	0	0	1
8	fish	carp	0	0	1	0	0	1	0	1
9	fish	catfish	0	0	1	0	0	1	1	1
10	mammal	cavy	1	0	0	1	0	0	0	1
11	mammal	cheetah	1	0	0	1	0	0	1	1
12	bird	chicken	0	1	1	0	1	0	0	0
13	fish	chub	0	0	1	0	0	1	1	1
14	invertebrate	clam	0	0	1	0	0	0	1	0
15	invertebrate	crab	0	0	1	0	0	1	1	0
16	invertebrate	crayfish	0	0	1	0	0	1	1	0
17	bird	crow	0	1	1	0	1	0	1	0
18	mammal	deer	1	0	0	1	0	0	0	1
19	fish	dogfish	0	0	1	0	0	1	1	1
20	mammal	dolphin	0	0	0	1	0	1	1	1
21	bird	dove	0	1	1	0	1	0	0	0
22	bird	duck	0	1	1	0	1	1	0	0
23	mammal	elephant	1	0	0	1	0	0	0	1
24	bird	flamingo	0	1	1	0	1	0	0	0
25	insect	flea	0	0	1	0	0	0	0	0
26	amphibian	frog	0	0	1	0	0	1	1	1

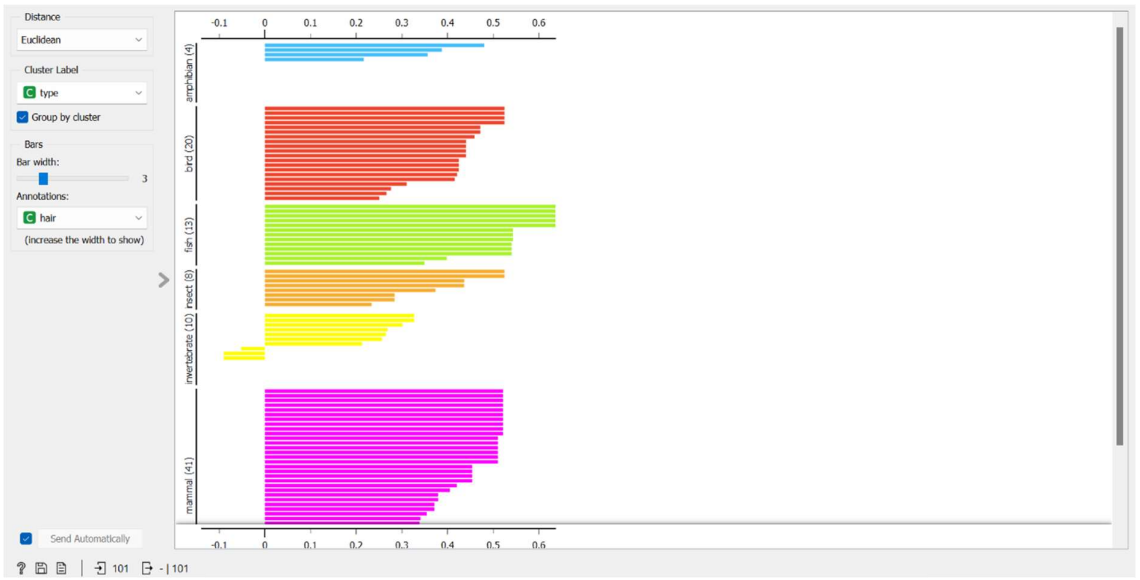


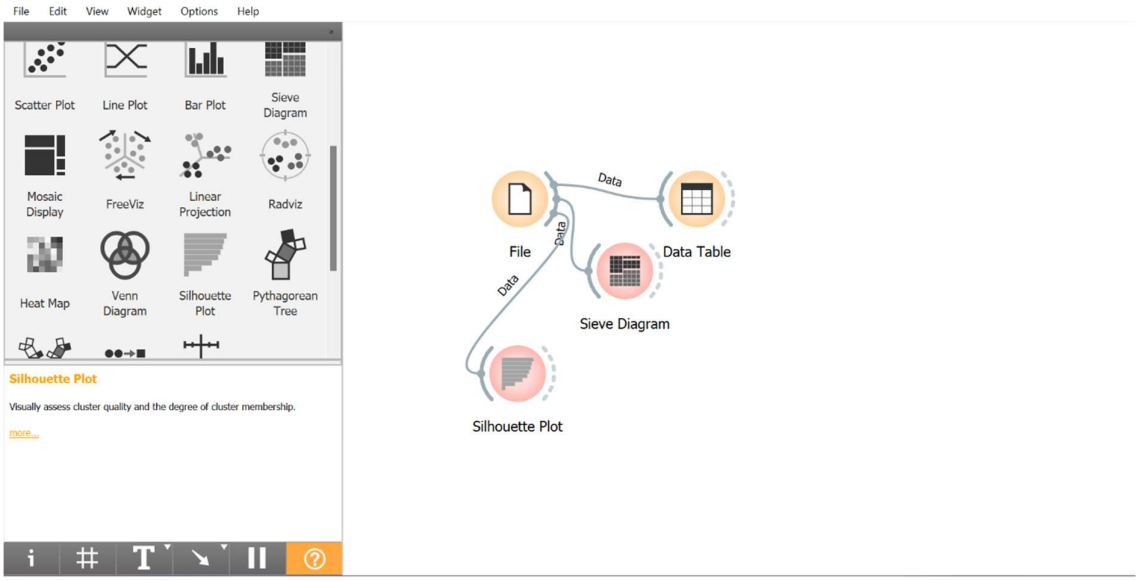
	Name	Type	Role	Values
11	venomous	categorical	feature	0, 1
12	fins	categorical	feature	0, 1
13	legs	categorical	feature	0, 2, 4, 5, 6, 8
14	tail	categorical	feature	0, 1
15	domestic	categorical	feature	0, 1
16	catsize	categorical	feature	0, 1
17	type	categorical	target	amphibian, bird, fish, insect, invertebrate, mammal, reptile
18	**name**	**categorical**	**meta**	

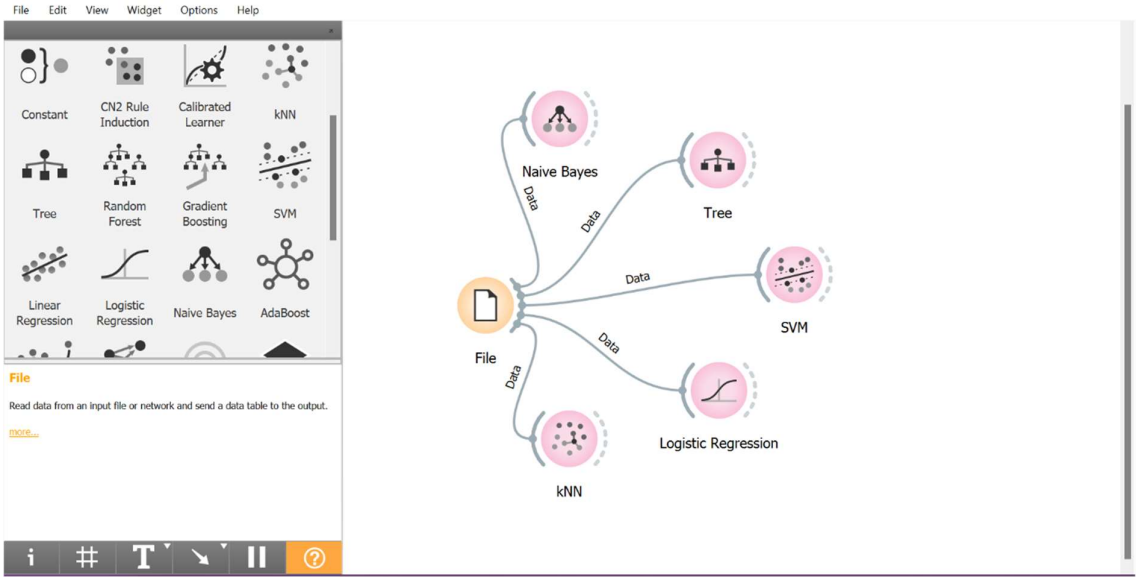

File Edit View Widget Options Help
Data
File
CSV File Import
Datasets
SQL Table
Data Table
Paint Data
Data Info
Rank
Edit Domain
Feature
Save Data
File
Read data from an input file or network and send a data table to the output.
more...
Data
File
Data Table
Anonymous Usage Statistics
Do you wish to opt-in to sharing statistics about how you use Orange? More info...
Ok
Don't show again


File Edit View Widget Options Help
Scatter Plot
Line Plot
Bar Plot
Sieve Diagram
Mosaic Display
FreeViz
Linear Projection
Radviz
Heat Map
Venn Diagram
Silhouette Plot
Pythagorean Tree
Sieve Diagram
Visualize the observed and expected frequencies for a combination of values.
more...
Data
File
Data
Data Table
Sieve Diagram


File Edit View Widget Options Help
Scatter Plot
Line Plot
Bar Plot
Sieve Diagram
Mosaic Display
FreeViz
Linear Projection
Radviz
Heat Map
Venn Diagram
Silhouette Plot
Pythagoras Tree
Sieve Diagram
Visualize the observed and expected frequencies for a combination of
more...
Sieve Diagram - Orange
type
name
Score Combinations
name
... bird fish ... i... mammal ...
type
N = 101
χ²=606.00, p=0.357
101 | -
- | 101


Distance
Euclidean
Cluster Label
type
Group by cluster
Bars
Bar width:
3
Annotations:
hair
(increase the width to show)
Send Automatically
-0.1 0 0.1 0.2 0.3 0.4 0.5 0.6
amphibian (4)
bird (20)
fish (13)
insect (8)
invertebrate (10)
mammal (41)
101
- | 101


File Edit View Widget Options Help
Scatter Plot
Line Plot
Bar Plot
Sieve Diagram
Mosaic Display
FreeViz
Linear Projection
Radviz
Heat Map
Venn Diagram
Silhouette Plot
Pythagorean Tree
Silhouette Plot
Visually assess cluster quality and the degree of cluster membership.
more...
Data
File
Data Table
Data
Data
Sieve Diagram
Silhouette Plot


File Edit View Widget Options Help
Constant
CN2 Rule Induction
Calibrated Learner
kNN
Tree
Random Forest
Gradient Boosting
SVM
Linear Regression
Logistic Regression
Naive Bayes
AdaBoost
File
Read data from an input file or network and send a data table to the output.
more...
Naive Bayes
Data
Data
Tree
Data
SVM
File
Data
Data
Logistic Regression
kNN

Cross validation
Number of folds: 5
Stratified
Cross validation by feature
name
Random sampling
Repeat train/test: 10
Training set size: 66 %
Stratified
Leave one out
Test on train data
Test on test data

Evaluation results for target (None, show average over classes)

Model	AUC	CA	F1	Precision	Recall
svm	0.995	0.941	0.937	0.945	0.941
nb	0.999	0.921	0.921	0.934	0.921
logr	0.998	0.960	0.960	0.962	0.960
knn	0.997	0.941	0.936	0.939	0.941
Tree	0.970	0.921	0.920	0.922	0.921

Compare models by: Area under ROC curve
Negligible diff.: 0.1

	svm	nb	logr	knn	Tree
svm		0.271	0.271	0.221	0.947
nb	0.729		0.500	0.271	0.970
logr	0.729	0.500		0.271	0.970
knn	0.779	0.729	0.729		0.970
Tree	0.053	0.030	0.030	0.030	

Table shows probabilities that the score for the model in the row is higher than that of the model in the column. Small numbers show the probability that the difference is negligible.

101 | - | 101 | 5×101

Can't run stratified 5-fold cross validation; the least common class has only 4 instances.

Cross validation
Number of folds: 2
Stratified
Cross validation by feature
name
Random sampling
Repeat train/test: 10
Training set size: 66 %
Stratified
Leave one out
Test on train data
Test on test data

Evaluation results for target (None, show average over classes)

Model	AUC	CA	F1	Precision	Recall
svm	0.945	0.941	0.938	0.948	0.941
nb	0.998	0.911	0.915	0.935	0.911
logr	0.998	0.960	0.960	0.962	0.960
knn	0.998	0.921	0.911	0.939	0.921
Tree	0.977	0.911	0.901	0.930	0.911

Compare models by: Area under ROC curve
Negligible diff.: 0.1

	svm	nb	logr	knn	Tree
svm		0.282	0.284	0.288	0.383
nb	0.718		0.503	0.626	0.837
logr	0.716	0.497		0.741	0.847
knn	0.712	0.374	0.259		0.851
Tree	0.617	0.163	0.153	0.149	

Table shows probabilities that the score for the model in the row is higher than that of the model in the column. Small numbers show the probability that the difference is negligible.

101 | - | 101 | 5×101

Cross validation
Number of folds: 3
Stratified
Cross validation by feature
name
Random sampling
Repeat train/test: 10
Training set size: 66 %
Stratified
Leave one out
Test on train data
Test on test data

Evaluation results for target (None, show average over classes)

Model	AUC	CA	F1	Precision	Recall
svm	0.986	0.950	0.950	0.958	0.950
nb	0.998	0.950	0.956	0.967	0.950
logr	0.999	0.980	0.978	0.981	0.980
knn	0.998	0.911	0.900	0.931	0.911
Tree	0.965	0.921	0.909	0.942	0.921

Compare models by: Area under ROC curve
Negligible diff.: 0.1

	svm	nb	logr	knn	Tree
svm		0.084	0.084	0.150	0.816
nb	0.916		0.500	0.919	0.832
logr	0.916	0.500		0.919	0.832
knn	0.850	0.081	0.081		0.820
Tree	0.184	0.168	0.168	0.180	

Table shows probabilities that the score for the model in the row is higher than that of the model in the column. Small numbers show the probability that the difference is negligible.

101 | - | 101 | 5×101

Cross validation
Number of folds: 10
Stratified
Cross validation by feature
name
Random sampling
Repeat train/test: 10
Training set size: 66 %
Stratified
Leave one out
Test on train data
Test on test data

Evaluation results for target (None, show average over classes)

Model	AUC	CA	F1	Precision	Recall
svm	0.995	0.950	0.944	0.956	0.950
nb	0.999	0.931	0.933	0.946	0.931
logr	0.998	0.960	0.960	0.962	0.960
knn	0.998	0.941	0.936	0.941	0.941
Tree	0.977	0.931	0.929	0.933	0.931

Compare models by: Area under ROC curve
Negligible diff.: 0.1

	svm	nb	logr	knn	Tree
svm		0.377	0.377	0.254	0.862
nb	0.623		0.500	0.254	0.894
logr	0.623	0.500		0.254	0.894
knn	0.746	0.746	0.746		0.915
Tree	0.138	0.106	0.106	0.085	

Table shows probabilities that the score for the model in the row is higher than that of the model in the column. Small numbers show the probability that the difference is negligible.

101 | - | 101 | 5×101

Can't run stratified 10-fold cross validation; the least common class has only 4 instances.

Cross validation
Number of folds: 20
Stratified
Cross validation by feature
name
Random sampling
Repeat train/test: 10
Training set size: 66 %
Stratified
Leave one out
Test on train data
Test on test data

Evaluation results for target (None, show average over classes)

Model	AUC	CA	F1	Precision	Recall
svm	0.995	0.941	0.937	0.953	0.941
nb	0.999	0.931	0.933	0.946	0.931
logr	0.998	0.960	0.960	0.962	0.960
knn	0.997	0.931	0.921	0.923	0.931
Tree	0.971	0.911	0.910	0.914	0.911

Compare models by: Area under ROC curve
Negligible diff.: 0.1

	svm	nb	logr	knn	Tree
svm		0.247	0.247	0.247	0.807
nb	0.753		0.500	0.500	0.925
logr	0.753	0.500		0.500	0.925
knn	0.753	0.500	0.500		0.925
Tree	0.193	0.075	0.075	0.075	

Table shows probabilities that the score for the model in the row is higher than that of the model in the column. Small numbers show the probability that the difference is negligible.

101 | - | 101 | 5×101
Can't run stratified 20-fold cross validation; the least common class has only 4 instances.

Cross validation
Number of folds: 20
Stratified
Cross validation by feature
name
Random sampling
Repeat train/test: 10
Training set size: 66 %
Stratified
Leave one out
Test on train data
Test on test data

Evaluation results for target amphibian

Model	AUC	CA	F1	Precision	Recall
svm	0.970	0.400	1.000	0.250	
nb	0.990	0.889	0.800	1.000	
logr	0.990	0.857	1.000	0.750	
knn	0.980	0.750	0.750	0.750	
Tree	0.990	0.857	1.000	0.750	

Compare models by: Area under ROC curve
Negligible diff.: 0.1

	svm	nb	logr	knn	Tree
svm					
nb					
logr					
knn					
Tree					

Table shows probabilities that the score for the model in the row is higher than that of the model in the column. Small numbers show the probability that the difference is negligible.

101 | - | 101 | 5×101
2 warnings

Cross validation
Number of folds: 20
Stratified
Cross validation by feature
name
Random sampling
Repeat train/test: 10
Training set size: 66 %
Stratified
Leave one out
Test on train data
Test on test data

Evaluation results for target reptile

Model	AUC	CA	F1	Precision	Recall
svm	0.941	0.500	0.429	0.600	
nb	0.960	0.667	0.571	0.800	
logr	0.960	0.600	0.600	0.600	
knn	0.950	0.286	0.500	0.200	
Tree	0.970	0.667	0.750	0.600	

Compare models by: Area under ROC curve
Negligible diff.: 0.1

	svm	nb	logr	knn	Tree
svm					
nb					
logr					
knn					
Tree					

Table shows probabilities that the score for the model in the row is higher than that of the model in the column. Small numbers show the probability that the difference is negligible.

101 | - | 101 | 5×101 2 warnings

Cross validation
Number of folds: 20
Stratified
Cross validation by feature
name
Random sampling
Repeat train/test: 10
Training set size: 66 %
Stratified
Leave one out
Test on train data
Test on test data

Evaluation results for target reptile

Model	AUC	CA	F1	Precision	Recall
svm	0.953	0.977	0.778	0.875	0.700
nb	0.968	0.931	0.500	0.429	0.600
logr	0.964	0.966	0.684	0.722	0.650
knn	0.899	0.943	0.167	0.500	0.100
Tree	0.839	0.966	0.667	0.750	0.600

Compare models by: Area under ROC curve
Negligible diff.: 0.1

	svm	nb	logr	knn	Tree
svm					
nb					
logr					
knn					
Tree					

Table shows probabilities that the score for the model in the row is higher than that of the model in the column. Small numbers show the probability that the difference is negligible.

101 | - | 350 | 5×350

Cross validation
Number of folds: 20
Stratified
Cross validation by feature
name
Random sampling
Repeat train/test: 20
Training set size: 66 %
Stratified
Leave one out
Test on train data
Test on test data

Evaluation results for target reptile

Model	AUC	CA	F1	Precision	Recall
svm	0.973	0.970	0.677	0.880	0.550
nb	0.980	0.951	0.614	0.562	0.675
logr	0.973	0.964	0.627	0.778	0.525
knn	0.928	0.944	0.170	0.571	0.100
Tree	0.769	0.966	0.625	0.833	0.500

Compare models by: Area under ROC curve
Negligible diff.: 0.1

	svm	nb	logr	knn	Tree
svm					
nb					
logr					
knn					
Tree					

Table shows probabilities that the score for the model in the row is higher than that of the model in the column. Small numbers show the probability that the difference is negligible.

101 | - | | - 700 | 5×700

Cross validation
Number of folds: 20
Stratified
Cross validation by feature
name
Random sampling
Repeat train/test: 20
Training set size: 66 %
Stratified
Leave one out
Test on train data
Test on test data

Evaluation results for target reptile

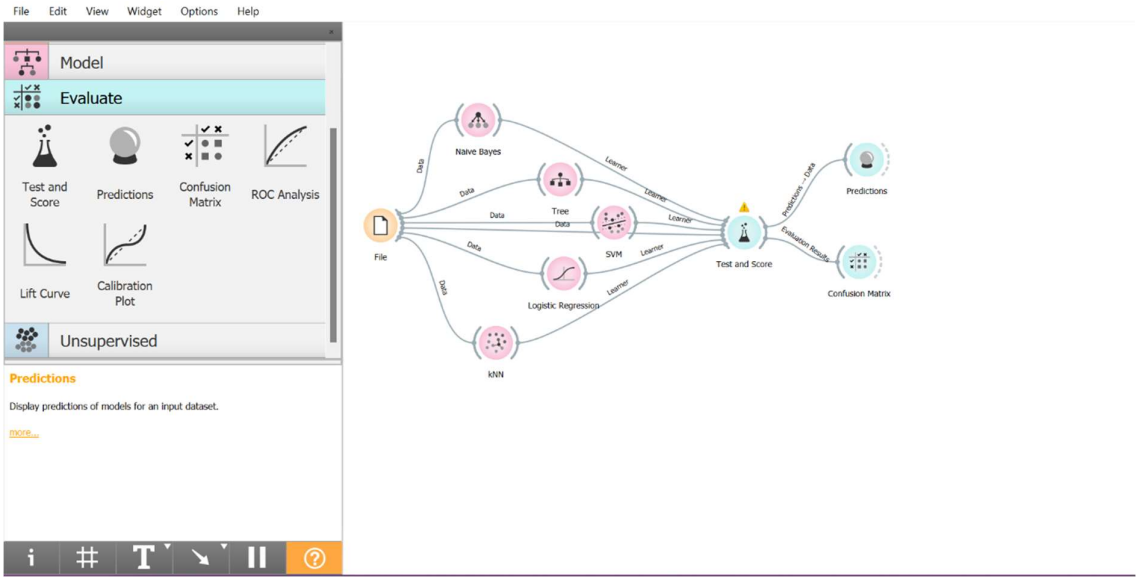
Model	AUC	CA	F1	Precision	Recall
svm	0.992	1.000	1.000	1.000	1.000
nb	1.000	0.970	0.769	0.625	1.000
logr	1.000	1.000	1.000	1.000	1.000
knn	0.991	0.980	0.750	1.000	0.600
Tree	0.999	0.990	0.889	1.000	0.800

Compare models by: Area under ROC curve
Negligible diff.: 0.1

	svm	nb	logr	knn	Tree
svm					
nb					
logr					
knn					
Tree					

Table shows probabilities that the score for the model in the row is higher than that of the model in the column. Small numbers show the probability that the difference is negligible.

101 | - | | - 101 | 5×101



Show probabilities for Classes in data

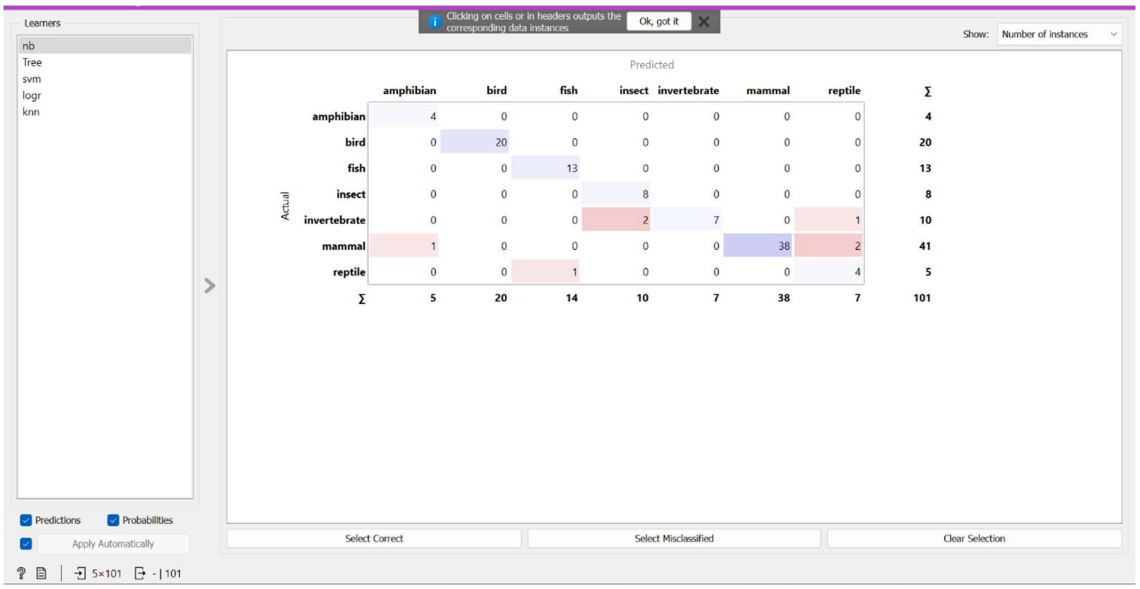
Restore Original Order

type	name	nb	Tree	svm	logr	knn	nb (amphibian)	nb (bird)	nb (fish)	nb (insect)	nb (inverteb
mammal	aardvark	mammal	mammal	mammal	mammal	mammal	0.000921244	3.03392e-10	3.25291e-09	1.40762e-06	5.10823e-07
mammal	cheetah	mammal	mammal	mammal	mammal	mammal	9.87704e-05	1.36617e-09	9.06772e-09	3.77291e-08	2.1907e-08
fish	dogfish	fish	fish	fish	fish	fish	0.000863701	2.34152e-08	0.995104	1.03101e-08	1.47506e-05
mammal	elephant	mammal	mammal	mammal	mammal	mammal	4.94089e-05	1.64019e-09	5.04004e-09	1.32115e-07	7.30583e-09
insect	honeybee	insect	insect	insect	insect	insect	9.98249e-05	1.34131e-07	1.04606e-10	0.999604	0.000253697
mammal	leopard	mammal	mammal	mammal	mammal	mammal	9.87704e-05	1.36617e-09	9.06772e-09	3.77291e-08	2.1907e-08
mammal	lion	mammal	mammal	mammal	mammal	mammal	9.87704e-05	1.36617e-09	9.06772e-09	3.77291e-08	2.1907e-08
mammal	oryx	mammal	mammal	mammal	mammal	mammal	4.94089e-05	1.64019e-09	5.04004e-09	1.32115e-07	7.30583e-09
mammal	porpoise	reptile	mammal	mammal	mammal	mammal	0.103447	6.67736e-07	0.271246	7.71789e-07	8.0305e-05
mammal	puma	mammal	mammal	mammal	mammal	mammal	9.87704e-05	1.36617e-09	9.06772e-09	3.77291e-08	2.1907e-08
mammal	squirrel	mammal	mammal	mammal	mammal	mammal	0.000488926	7.30375e-07	1.24684e-07	1.04588e-05	1.80737e-07
mammal	boar	mammal	mammal	mammal	mammal	mammal	6.57553e-05	1.75956e-09	7.54592e-09	7.01465e-08	3.69873e-08
fish	chub	fish	fish	fish	fish	fish	0.00192144	2.41902e-08	0.996197	8.19904e-08	3.67692e-05
insect	gnat	insect	insect	insect	insect	insect	0.000226008	1.82458e-05	1.99509e-09	0.992787	0.00651639
mammal	goat	mammal	mammal	mammal	mammal	mammal	3.21611e-05	3.22727e-09	3.41734e-09	3.43088e-07	6.78397e-09
bird	gull	bird	bird	bird	bird	bird	0.00213026	0.996098	1.14409e-06	3.71178e-05	2.91179e-05
reptile	seasnake	fish	fish	fish	fish	fish	0.333161	4.41511e-07	0.340693	9.4776e-06	0.00629674
invertebrate	seawasp	invertebrate	invertebrate	invertebrate	invertebrate	invertebrate	0.0102979	3.41174e-08	0.00015578	0.00175843	0.985316

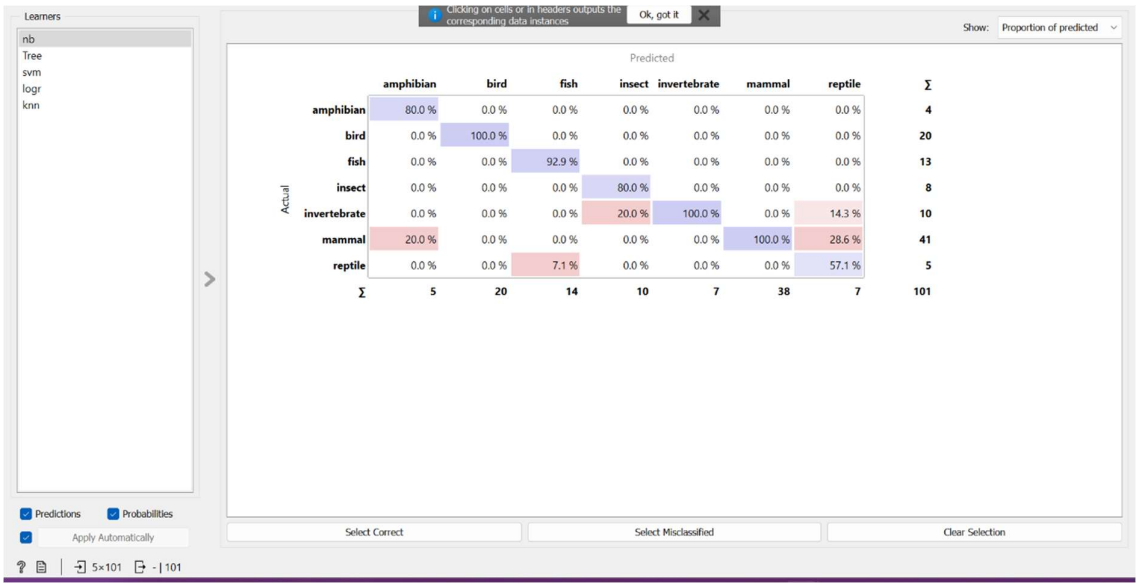
Show perfomance scores

Target class: (Average over classes)

101 | - 101 | -



Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	4	0	0	0	0	0	0	4
bird	0	20	0	0	0	0	0	20
fish	0	0	13	0	0	0	0	13
insect	0	0	0	8	0	0	0	8
invertebrate	0	0	0	2	7	0	1	10
mammal	1	0	0	0	0	38	2	41
reptile	0	0	1	0	0	0	4	5
Σ	5	20	14	10	7	38	7	101



Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	80.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	4
bird	0.0 %	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	20
fish	0.0 %	0.0 %	92.9 %	0.0 %	0.0 %	0.0 %	0.0 %	13
insect	0.0 %	0.0 %	0.0 %	80.0 %	0.0 %	0.0 %	0.0 %	8
invertebrate	0.0 %	0.0 %	0.0 %	20.0 %	100.0 %	0.0 %	14.3 %	10
mammal	20.0 %	0.0 %	0.0 %	0.0 %	0.0 %	100.0 %	28.6 %	41
reptile	0.0 %	0.0 %	7.1 %	0.0 %	0.0 %	0.0 %	57.1 %	5
Σ	5	20	14	10	7	38	7	101

Learners

- nb
- Tree
- svm
- logr
- knn

Clicking on cells or in headers outputs the corresponding data instances | Ok, got it

Show: Proportion of actual

Predicted

Actual	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	4
bird	0.0 %	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	20
fish	0.0 %	0.0 %	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	13
insect	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	0.0 %	0.0 %	8
invertebrate	0.0 %	0.0 %	0.0 %	20.0 %	70.0 %	0.0 %	10.0 %	10
mammal	2.4 %	0.0 %	0.0 %	0.0 %	0.0 %	92.7 %	4.9 %	41
reptile	0.0 %	0.0 %	20.0 %	0.0 %	0.0 %	0.0 %	80.0 %	5
Σ	5	20	14	10	7	38	7	101

Predictions | Probabilities

Apply Automatically

Select Correct | Select Misclassified | Clear Selection

5×101 | - | 101

Learners

- nb
- Tree
- svm
- logr
- knn

Clicking on cells or in headers outputs the corresponding data instances | Ok, got it

Show: Number of instances

Predicted

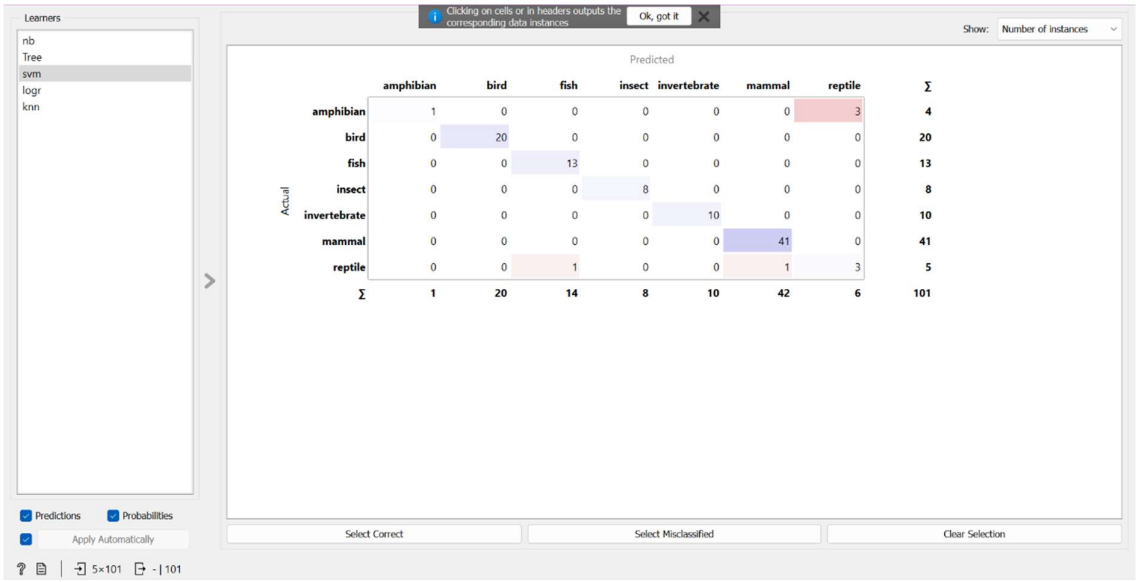
Actual	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	3	0	0	0	0	0	1	4
bird	0	20	0	0	0	0	0	20
fish	0	0	13	0	0	0	0	13
insect	0	0	0	7	1	0	0	8
invertebrate	0	0	0	3	7	0	0	10
mammal	0	0	0	0	0	41	0	41
reptile	0	0	1	0	1	0	3	5
Σ	3	20	14	10	9	41	4	101

Predictions | Probabilities

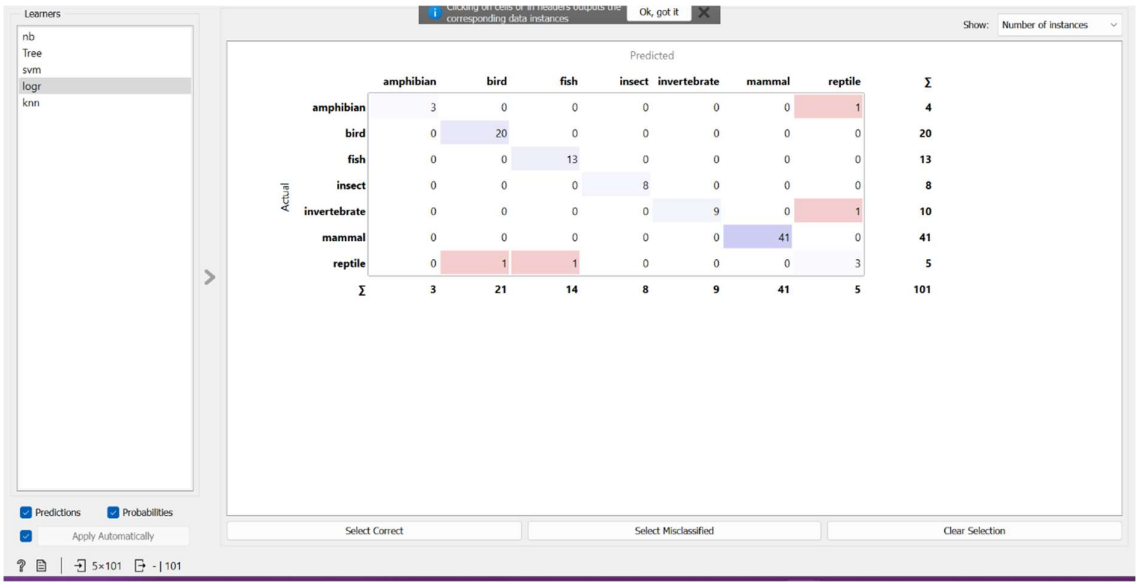
Apply Automatically

Select Correct | Select Misclassified | Clear Selection

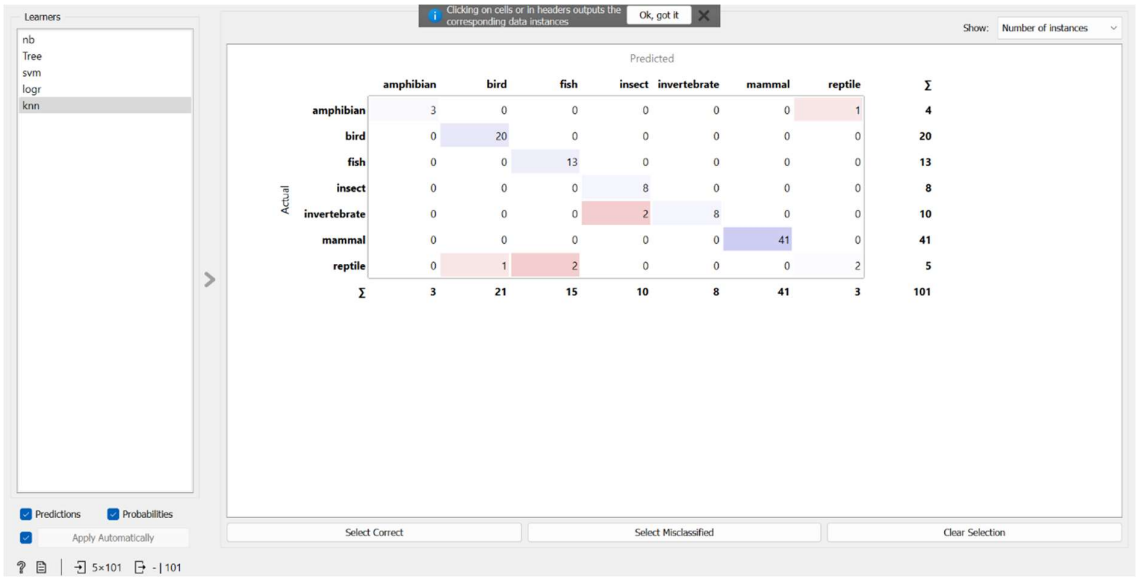
5×101 | - | 101



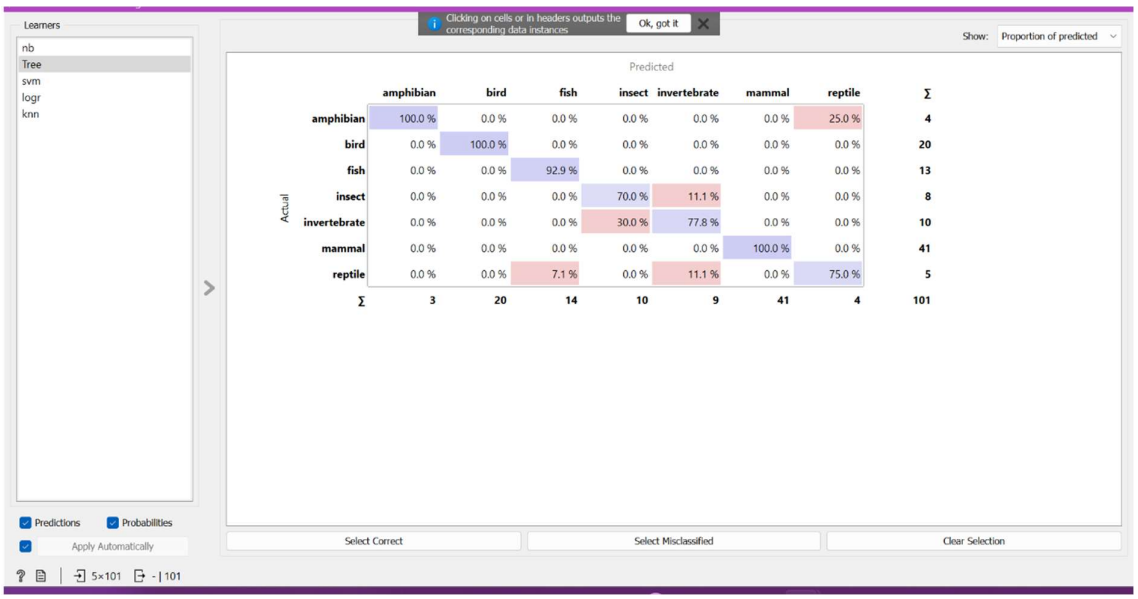
Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	1	0	0	0	0	0	3	4
bird	0	20	0	0	0	0	0	20
fish	0	0	13	0	0	0	0	13
insect	0	0	0	8	0	0	0	8
invertebrate	0	0	0	0	10	0	0	10
mammal	0	0	0	0	0	41	0	41
reptile	0	0	1	0	0	1	3	5
Σ	1	20	14	8	10	42	6	101



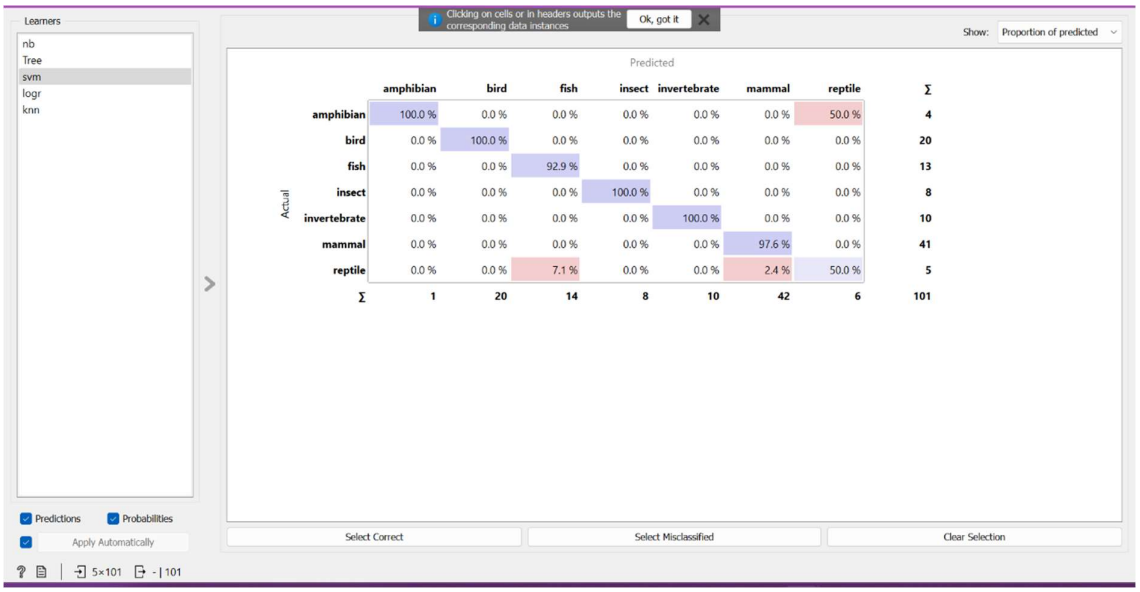
Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	3	0	0	0	0	0	1	4
bird	0	20	0	0	0	0	0	20
fish	0	0	13	0	0	0	0	13
insect	0	0	0	8	0	0	0	8
invertebrate	0	0	0	0	9	0	1	10
mammal	0	0	0	0	0	41	0	41
reptile	0	1	1	0	0	0	3	5
Σ	3	21	14	8	9	41	5	101



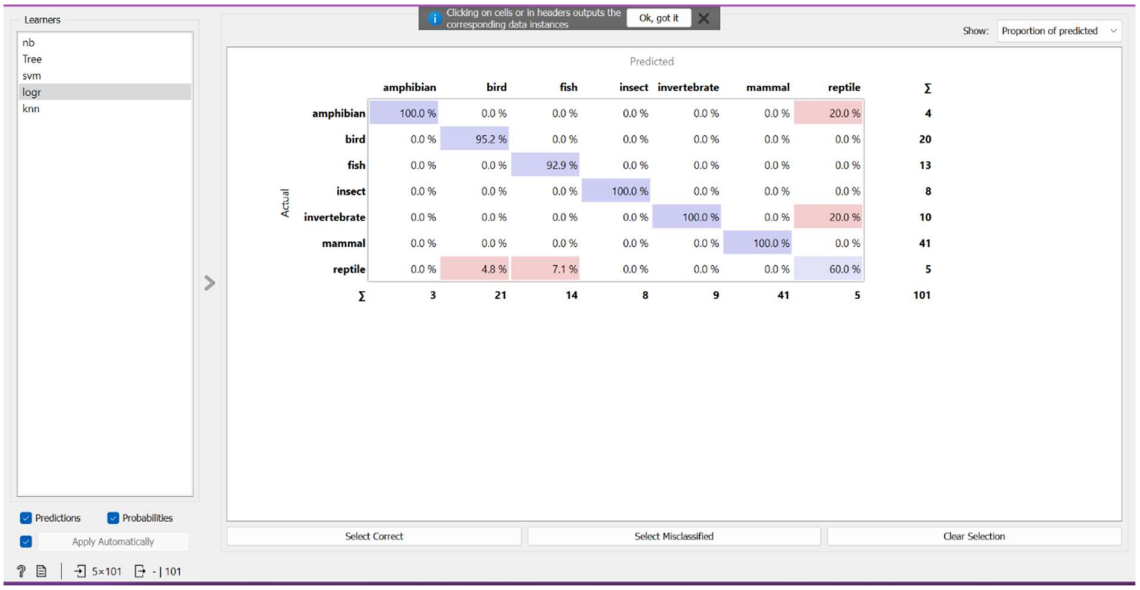
Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	3	0	0	0	0	0	1	4
bird	0	20	0	0	0	0	0	20
fish	0	0	13	0	0	0	0	13
insect	0	0	0	8	0	0	0	8
invertebrate	0	0	0	2	8	0	0	10
mammal	0	0	0	0	0	41	0	41
reptile	0	1	2	0	0	0	2	5
Σ	3	21	15	10	8	41	3	101



Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	25.0 %	4
bird	0.0 %	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	20
fish	0.0 %	0.0 %	92.9 %	0.0 %	0.0 %	0.0 %	0.0 %	13
insect	0.0 %	0.0 %	0.0 %	70.0 %	11.1 %	0.0 %	0.0 %	8
invertebrate	0.0 %	0.0 %	0.0 %	30.0 %	77.8 %	0.0 %	0.0 %	10
mammal	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	41
reptile	0.0 %	0.0 %	7.1 %	0.0 %	11.1 %	0.0 %	75.0 %	5
Σ	3	20	14	10	9	41	4	101



Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	∑
amphibian	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	50.0 %	4
bird	0.0 %	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	20
fish	0.0 %	0.0 %	92.9 %	0.0 %	0.0 %	0.0 %	0.0 %	13
insect	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	0.0 %	0.0 %	8
invertebrate	0.0 %	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	0.0 %	10
mammal	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	97.6 %	0.0 %	41
reptile	0.0 %	0.0 %	7.1 %	0.0 %	0.0 %	2.4 %	50.0 %	5
∑	1	20	14	8	10	42	6	101



Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	∑
amphibian	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	20.0 %	4
bird	0.0 %	95.2 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	20
fish	0.0 %	0.0 %	92.9 %	0.0 %	0.0 %	0.0 %	0.0 %	13
insect	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	0.0 %	0.0 %	8
invertebrate	0.0 %	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	20.0 %	10
mammal	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	41
reptile	0.0 %	4.8 %	7.1 %	0.0 %	0.0 %	0.0 %	60.0 %	5
∑	3	21	14	8	9	41	5	101

Learners

nb
Tree
svm
logr
knn

Clicking on cells or in headers outputs the corresponding data instances | Ok, got it

Show: Proportion of predicted

Predicted

Actual	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	33.3 %	4
bird	0.0 %	95.2 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	20
fish	0.0 %	0.0 %	86.7 %	0.0 %	0.0 %	0.0 %	0.0 %	13
insect	0.0 %	0.0 %	0.0 %	80.0 %	0.0 %	0.0 %	0.0 %	8
invertebrate	0.0 %	0.0 %	0.0 %	20.0 %	100.0 %	0.0 %	0.0 %	10
mammal	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	41
reptile	0.0 %	4.8 %	13.3 %	0.0 %	0.0 %	0.0 %	66.7 %	5
Σ	3	21	15	10	8	41	3	101

Predictions | Probabilities

Apply Automatically

Select Correct | Select Misclassified | Clear Selection

5×101 | - | 101

Learners

nb
Tree
svm
logr
knn

Clicking on cells or in headers outputs the corresponding data instances | Ok, got it

Show: Proportion of predicted

Predicted

Actual	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	25.0 %	4
bird	0.0 %	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	20
fish	0.0 %	0.0 %	92.9 %	0.0 %	0.0 %	0.0 %	0.0 %	13
insect	0.0 %	0.0 %	0.0 %	70.0 %	11.1 %	0.0 %	0.0 %	8
invertebrate	0.0 %	0.0 %	0.0 %	30.0 %	77.8 %	0.0 %	0.0 %	10
mammal	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	41
reptile	0.0 %	0.0 %	7.1 %	0.0 %	11.1 %	0.0 %	75.0 %	5
Σ	3	20	14	10	9	41	4	101

Predictions | Probabilities

Apply Automatically

Select Correct | Select Misclassified | Clear Selection

5×101 | - | 101

Learners

nb
Tree
svm
logr
knn

Clicking on cells or in headers outputs the corresponding data instances — Ok, got it

Show: Proportion of predicted

Predicted

Actual	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	50.0 %	4
bird	0.0 %	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	20
fish	0.0 %	0.0 %	92.9 %	0.0 %	0.0 %	0.0 %	0.0 %	13
insect	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	0.0 %	0.0 %	8
invertebrate	0.0 %	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	0.0 %	10
mammal	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	97.6 %	0.0 %	41
reptile	0.0 %	0.0 %	7.1 %	0.0 %	0.0 %	2.4 %	50.0 %	5
Σ	1	20	14	8	10	42	6	101

Predictions Probabilities

Apply Automatically

5×101 - | 101

Select Correct Select Misclassified Clear Selection

Learners

nb
Tree
svm
logr
knn

Clicking on cells or in headers outputs the corresponding data instances — Ok, got it

Show: Proportion of predicted

Predicted

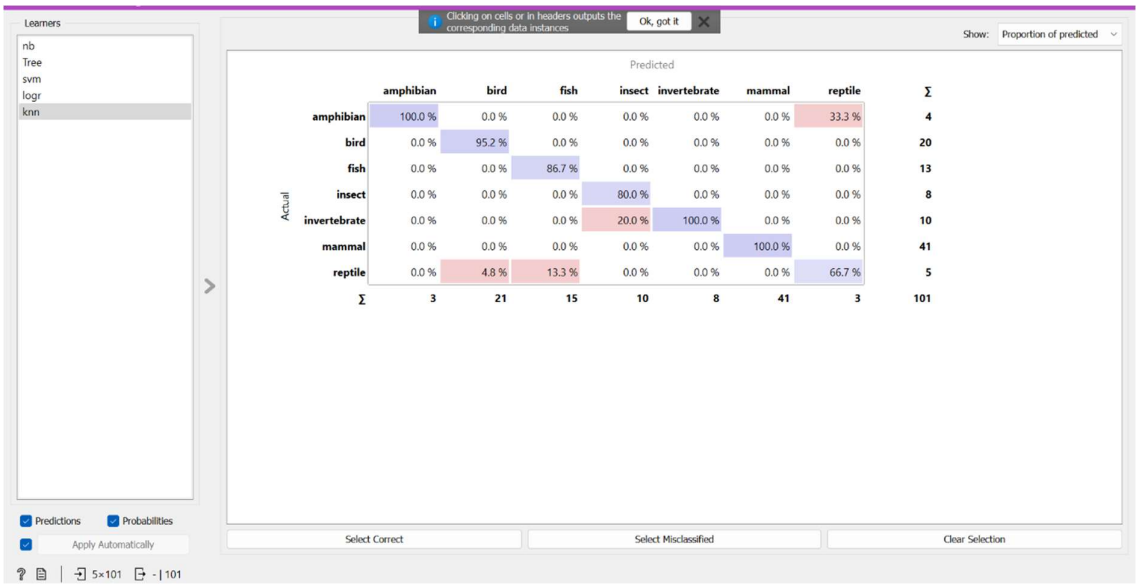
Actual	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	20.0 %	4
bird	0.0 %	95.2 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	20
fish	0.0 %	0.0 %	92.9 %	0.0 %	0.0 %	0.0 %	0.0 %	13
insect	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	0.0 %	0.0 %	8
invertebrate	0.0 %	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	20.0 %	10
mammal	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	41
reptile	0.0 %	4.8 %	7.1 %	0.0 %	0.0 %	0.0 %	60.0 %	5
Σ	3	21	14	8	9	41	5	101

Predictions Probabilities

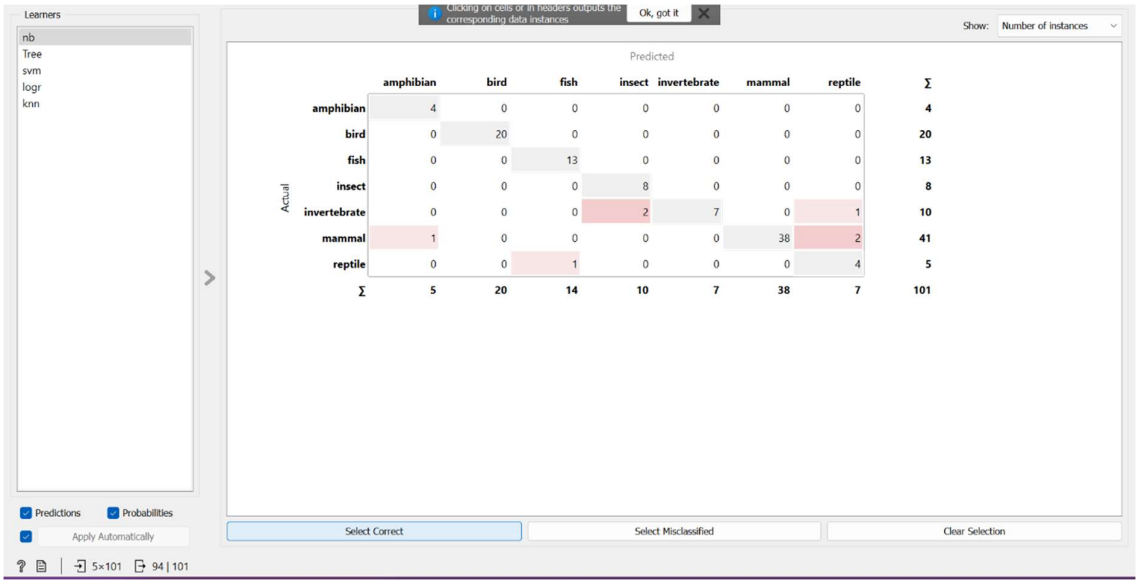
Apply Automatically

5×101 - | 101

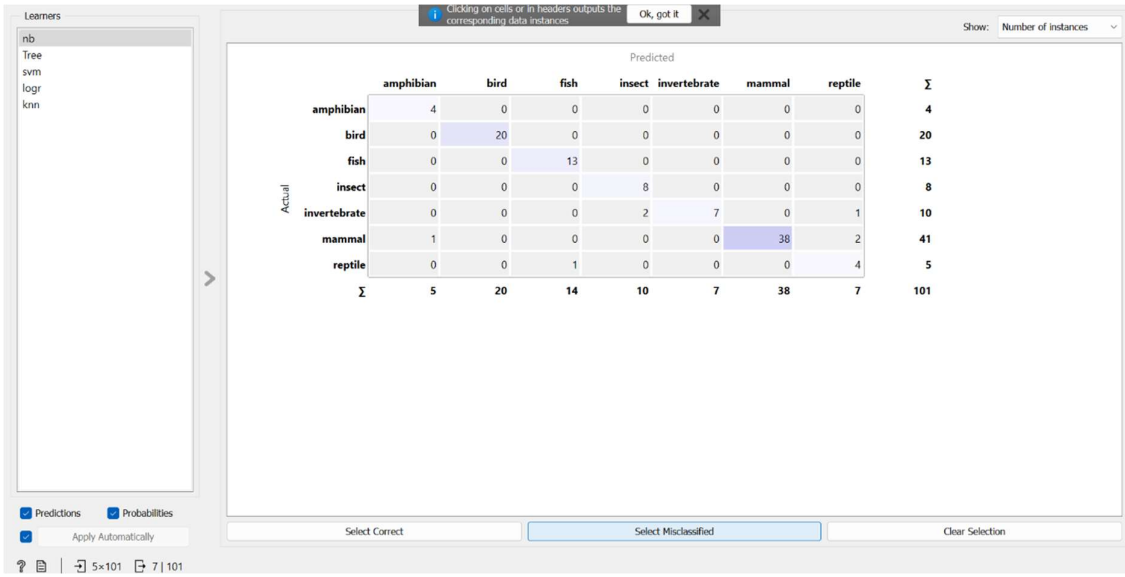
Select Correct Select Misclassified Clear Selection



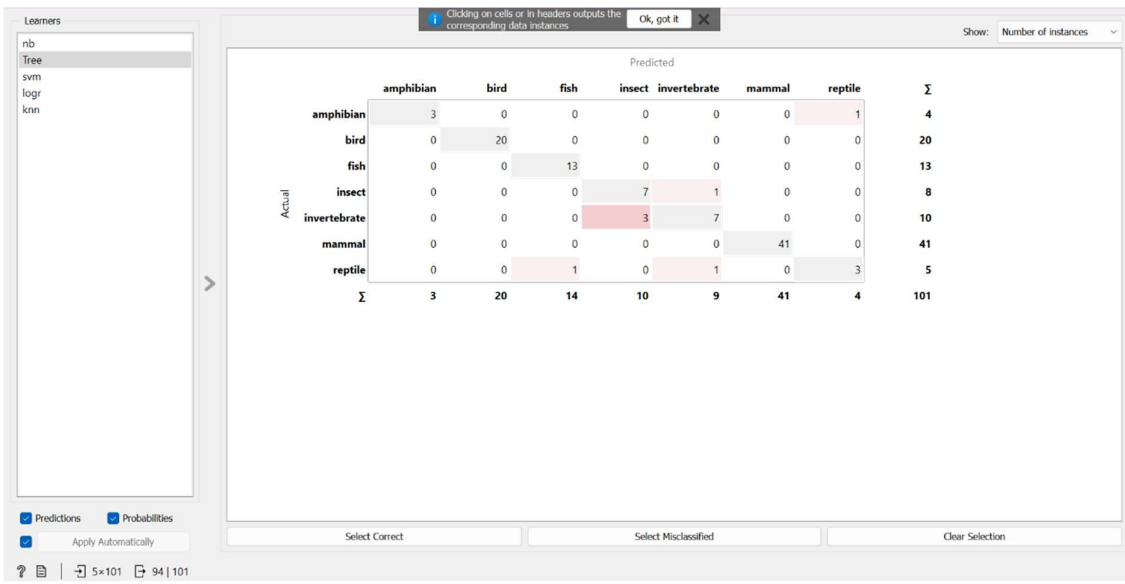
Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	33.3 %	4
bird	0.0 %	95.2 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	20
fish	0.0 %	0.0 %	86.7 %	0.0 %	0.0 %	0.0 %	0.0 %	13
insect	0.0 %	0.0 %	0.0 %	80.0 %	0.0 %	0.0 %	0.0 %	8
invertebrate	0.0 %	0.0 %	0.0 %	20.0 %	100.0 %	0.0 %	0.0 %	10
mammal	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	100.0 %	0.0 %	41
reptile	0.0 %	4.8 %	13.3 %	0.0 %	0.0 %	0.0 %	66.7 %	5
Σ	3	21	15	10	8	41	3	101



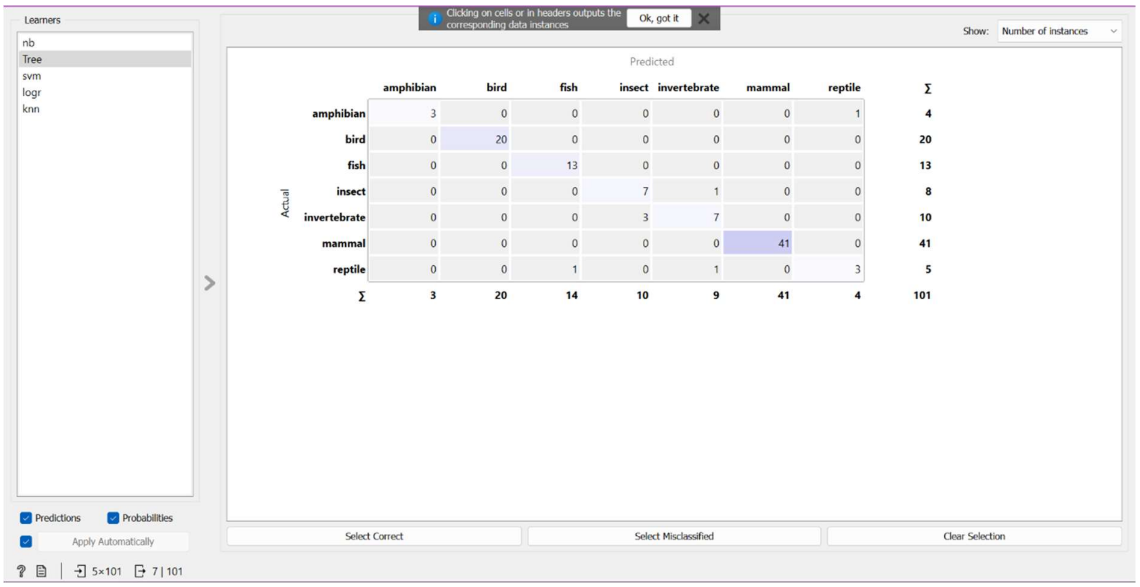
Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	4	0	0	0	0	0	0	4
bird	0	20	0	0	0	0	0	20
fish	0	0	13	0	0	0	0	13
insect	0	0	0	8	0	0	0	8
invertebrate	0	0	0	2	7	0	1	10
mammal	1	0	0	0	0	38	2	41
reptile	0	0	1	0	0	0	4	5
Σ	5	20	14	10	7	38	7	101



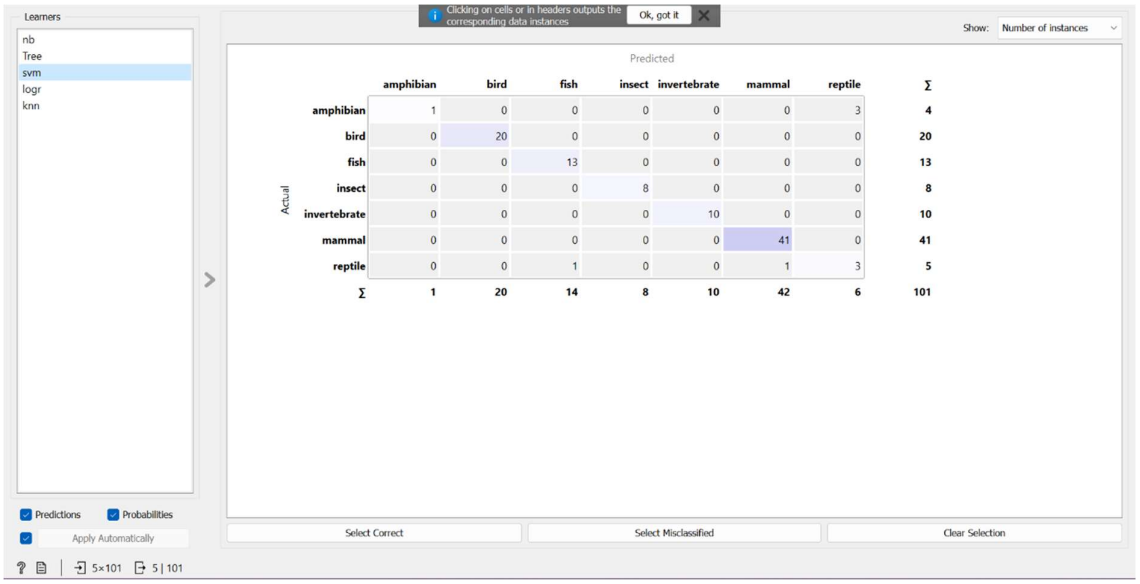
Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	4	0	0	0	0	0	0	4
bird	0	20	0	0	0	0	0	20
fish	0	0	13	0	0	0	0	13
insect	0	0	0	8	0	0	0	8
invertebrate	0	0	0	2	7	0	1	10
mammal	1	0	0	0	0	38	2	41
reptile	0	0	1	0	0	0	4	5
Σ	5	20	14	10	7	38	7	101



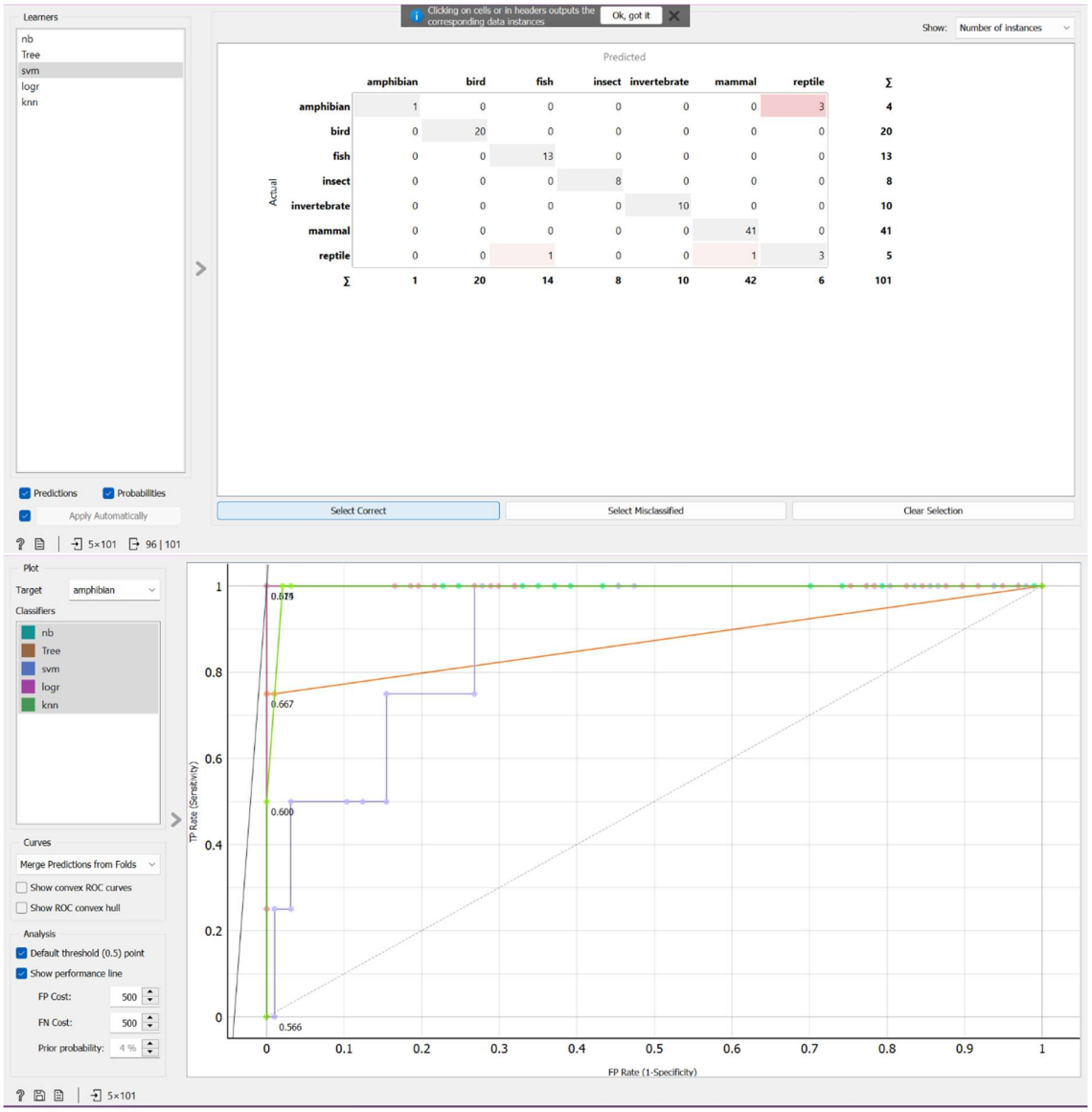
Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	3	0	0	0	0	0	1	4
bird	0	20	0	0	0	0	0	20
fish	0	0	13	0	0	0	0	13
insect	0	0	0	7	1	0	0	8
invertebrate	0	0	0	3	7	0	0	10
mammal	0	0	0	0	0	41	0	41
reptile	0	0	1	0	1	0	3	5
Σ	3	20	14	10	9	41	4	101



Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	3	0	0	0	0	0	1	4
bird	0	20	0	0	0	0	0	20
fish	0	0	13	0	0	0	0	13
insect	0	0	0	7	1	0	0	8
invertebrate	0	0	0	3	7	0	0	10
mammal	0	0	0	0	0	41	0	41
reptile	0	0	1	0	1	0	3	5
Σ	3	20	14	10	9	41	4	101

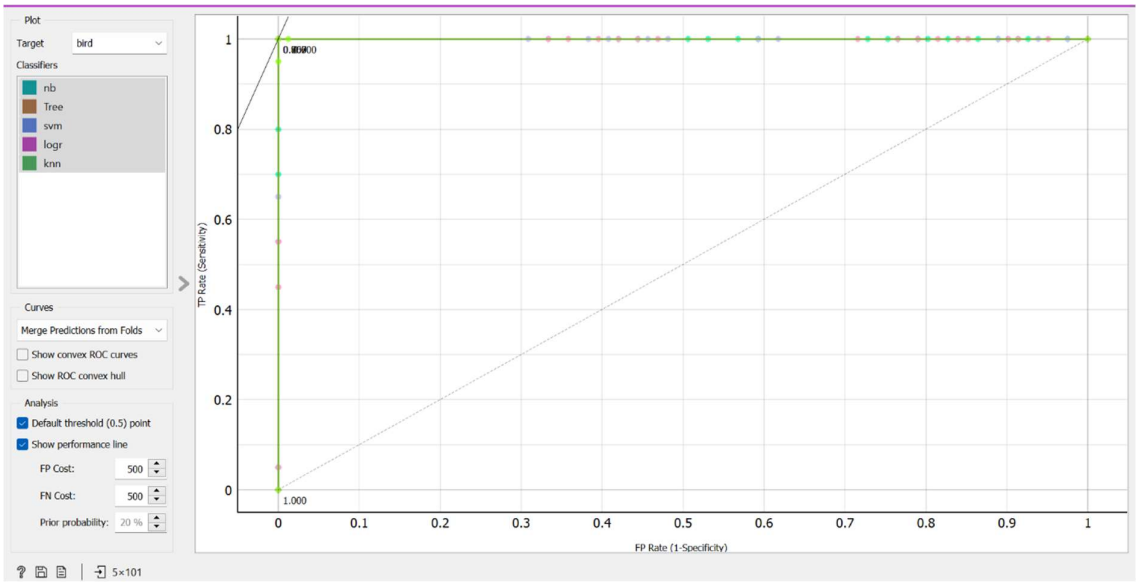


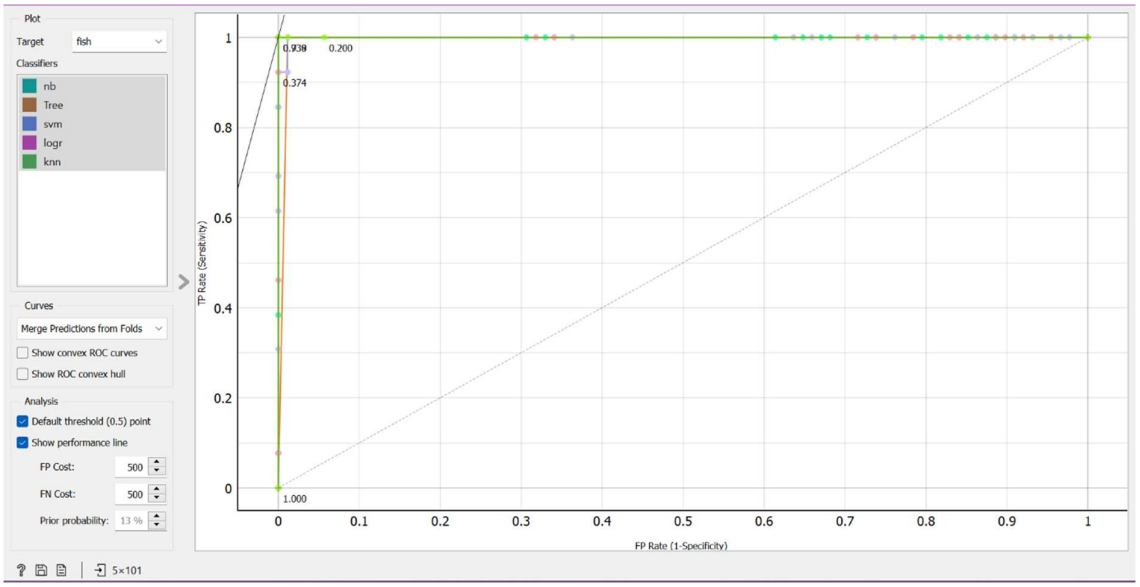
Actual \ Predicted	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	1	0	0	0	0	0	3	4
bird	0	20	0	0	0	0	0	20
fish	0	0	13	0	0	0	0	13
insect	0	0	0	8	0	0	0	8
invertebrate	0	0	0	0	10	0	0	10
mammal	0	0	0	0	0	41	0	41
reptile	0	0	1	0	0	1	3	5
Σ	1	20	14	8	10	42	6	101

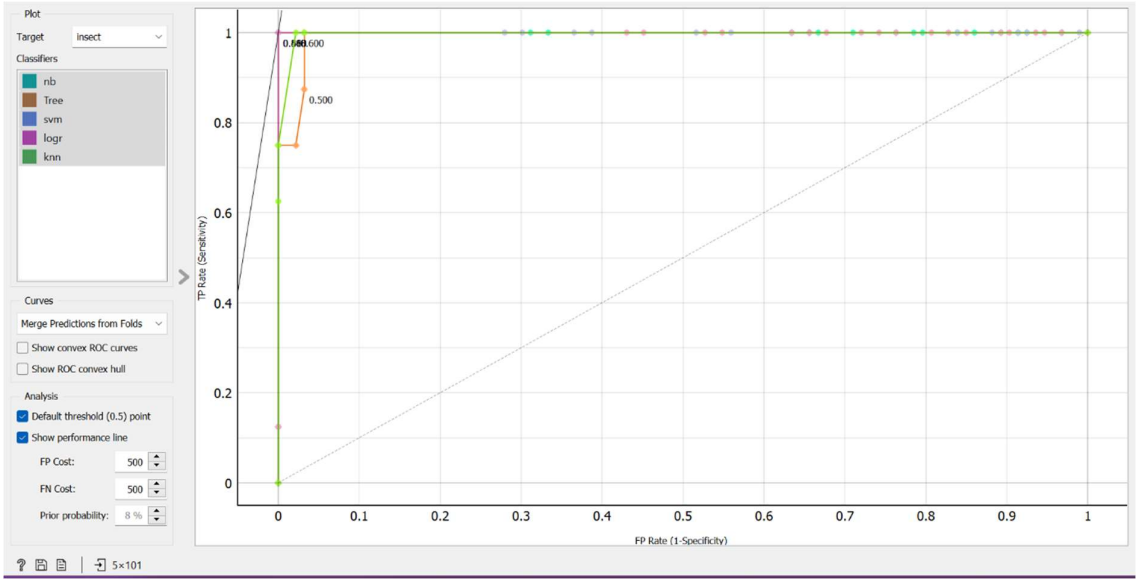


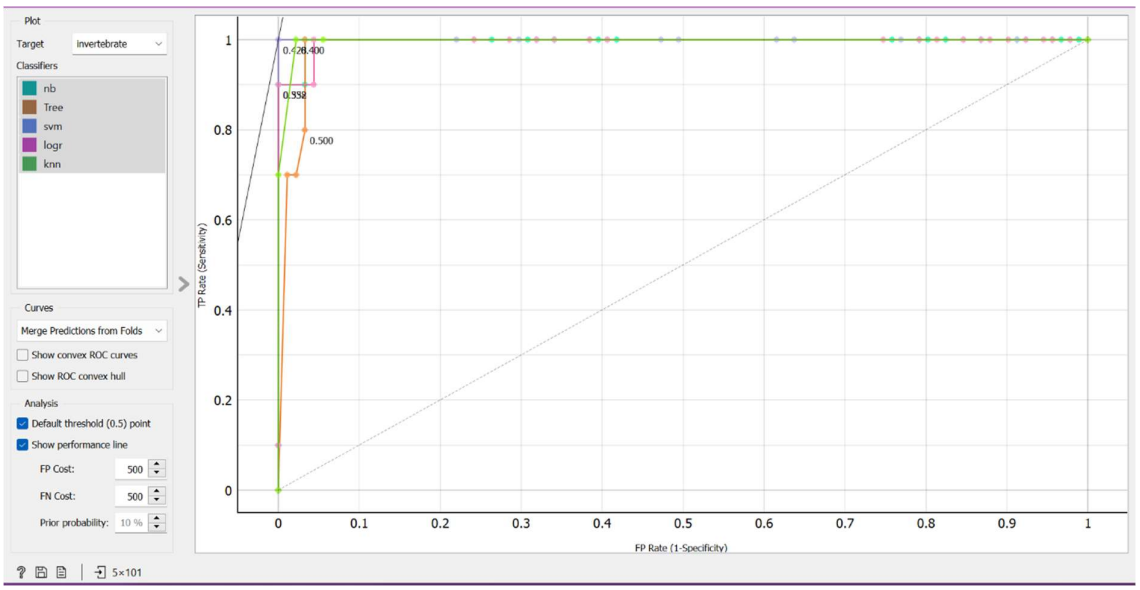
	amphibian	bird	fish	insect	invertebrate	mammal	reptile	Σ
amphibian	1	0	0	0	0	0	3	**4**
bird	0	20	0	0	0	0	0	**20**
fish	0	0	13	0	0	0	0	**13**
insect	0	0	0	8	0	0	0	**8**
invertebrate	0	0	0	0	10	0	0	**10**
mammal	0	0	0	0	0	41	0	**41**
reptile	0	0	1	0	0	1	3	**5**
Σ	**1**	**20**	**14**	**8**	**10**	**42**	**6**	**101**

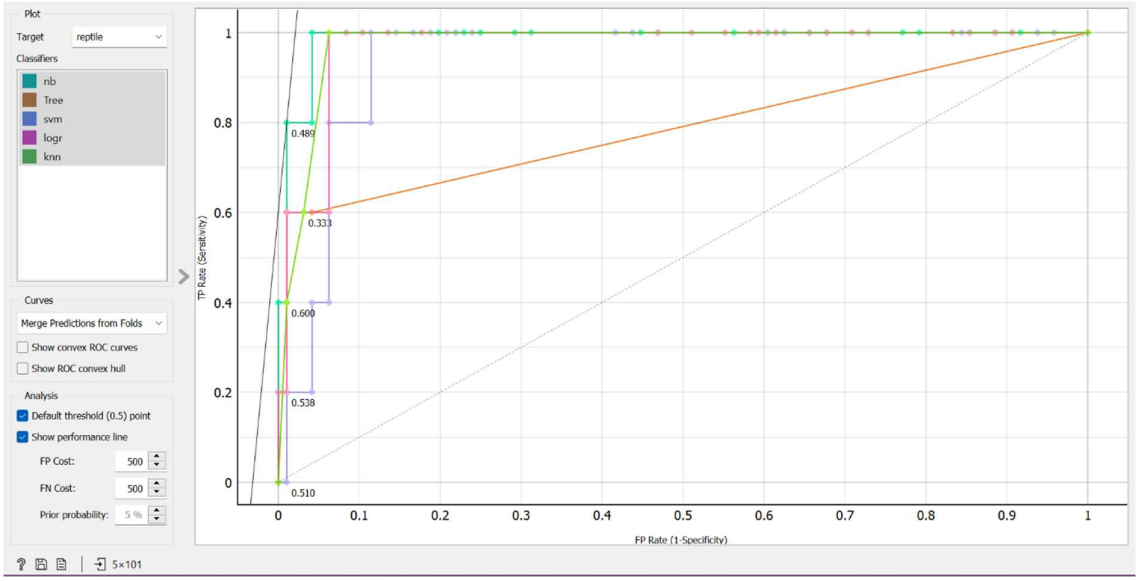
\


Plot
Target
bird
Classifiers
nb
Tree
svm
logr
knn
Curves
Merge Predictions from Folds
Show convex ROC curves
Show ROC convex hull
Analysis
Default threshold (0.5) point
Show performance line
FP Cost:
500
FN Cost:
500
Prior probability:
20 %
5×101
TP Rate (Sensitivity)
FP Rate (1-Specificity)
1.000


Plot
Target
fish
Classifiers
nb
Tree
svm
logr
knn
Curves
Merge Predictions from Folds
Show convex ROC curves
Show ROC convex hull
Analysis
Default threshold (0.5) point
Show performance line
FP Cost:
500
FN Cost:
500
Prior probability:
13 %
5×101
TP Rate (Sensitivity)
FP Rate (1-Specificity)
0.200
0.374
1.000


Plot
Target
insect
Classifiers
nb
Tree
svm
logr
knn
Curves
Merge Predictions from Folds
Show convex ROC curves
Show ROC convex hull
Analysis
Default threshold (0.5) point
Show performance line
FP Cost:
500
FN Cost:
500
Prior probability:
8 %
0.500
TP Rate (Sensitivity)
FP Rate (1-Specificity)
5×101


Plot
Target
invertebrate
Classifiers
nb
Tree
svm
logr
knn
Curves
Merge Predictions from Folds
Show convex ROC curves
Show ROC convex hull
Analysis
Default threshold (0.5) point
Show performance line
FP Cost:
500
FN Cost:
500
Prior probability:
10 %
0.500
TP Rate (Sensitivity)
FP Rate (1-Specificity)
5×101


Plot
Target
reptile
Classifiers
nb
Tree
svm
logr
knn
Curves
Merge Predictions from Folds
Show convex ROC curves
Show ROC convex hull
Analysis
Default threshold (0.5) point
Show performance line
FP Cost:
500
FN Cost:
500
Prior probability:
5 %
5×101
TP Rate (Sensitivity)
FP Rate (1-Specificity)
0.489
0.333
0.600
0.538
0.510