Dataset (breast.txt)

Dataset description

10 attribute(s) 699 example(s)

Attribute	Category	Informations
clump	Continue	-
ucellsize	Continue	•
ucellshape	Continue	-
mgadhesion	Continue	-
sepics	Continue	-
bnuclei	Continue	-
bchromatin	Continue	-
normnucl	Continue	-
mitoses	Continue	-
class	Discrete	2 values

Computation time: 0 ms. Created at 1/25/2019 4:35:58 PM

Supervised Learning 1 (C4.5)		
Parameters		
Decision tree (C4.5) paramet	ers	
Min size of leaves	5	
Confidence-level for pessimistic	0.25	

Results

Classifier performances

Error rate		0.0344				
Valu	es pred	iction		Confusio	n matrix	
Value	Recall	1-Precision		begnin	malignant	Sum
begnin	0.9507	0.0047	begnin	212	11	223
malignant	0.9921	0.0809	malignant	1	125	126
			Sum	213	136	349

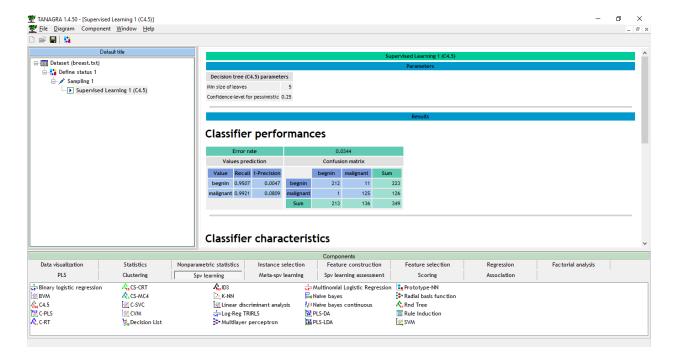
Classifier characteristics

Data description

Target attribute	class (2 values)
# descriptors	9

Tree description

Number of nodes	13
Number of leaves	7

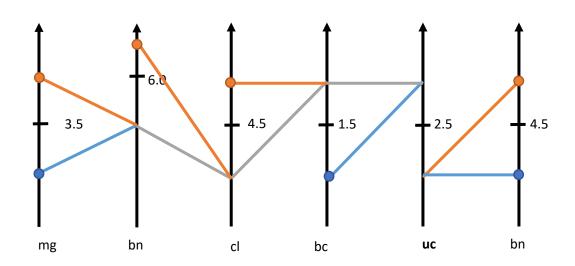


Decision tree

- ucellsize < 2.5000
 - o bnuclei < 4.5000 then class = begnin (100.00 % of 200 examples)
 - O bnuclei >= 4.5000 then class = malignant (66.67 % of 6 examples)
- ucellsize >= 2.5000
 - O bchromatin < 1.5000 then class = begnin (87.50 % of 8 examples)
 - o bchromatin >= 1.5000
 - clump < 4.5000</p>
 - bnuclei < 6.0000
 - mgadhesion < 3.5000 then class = **begnin** (100.00 % of 5 examples)
 - mgadhesion >= 3.5000 then class = malignant (66.67 % of 6 examples)
 - bnuclei >= 6.0000 then class = malignant (100.00 % of 8 examples)
 - clump >= 4.5000 then class = malignant (93.97 % of 116 examples)

Decision tree

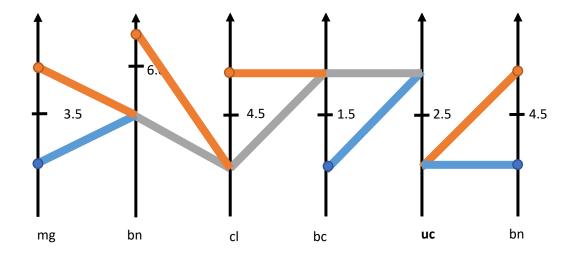
- uc < 2.5
 - o bn < 4.5 then class = **benign** (100.00 % of 200 examples)
 - o bn >= 4.5 then class = malignant (66.67 % of 6 examples)
- uc >= 2.5
 - o bc < 1.5 then class = **benign** (87.50 % of 8 examples)
 - o bc>= 1.5
 - cl < 4.5
 - bn < 6.0
 - mg < 3.5 then class = benign (100.00 % of 5 examples)
 - mg >= 3.5 then class = malignant (66.67 % of 6 examples)
 - bn >= 6.0 then class = malignant (100.00 % of 8 examples)
 - cl >= 4.5 then class = malignant (93.97 % of 116 examples)

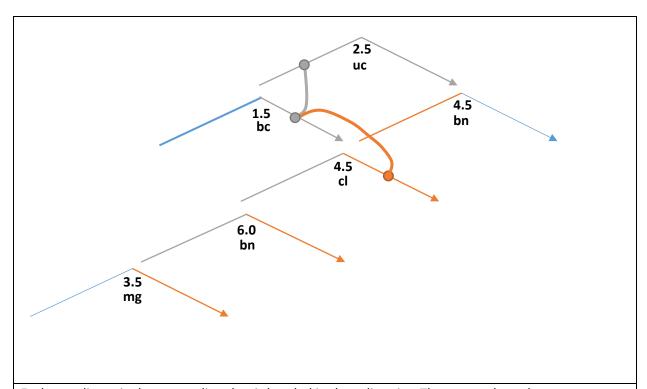


UC is a root

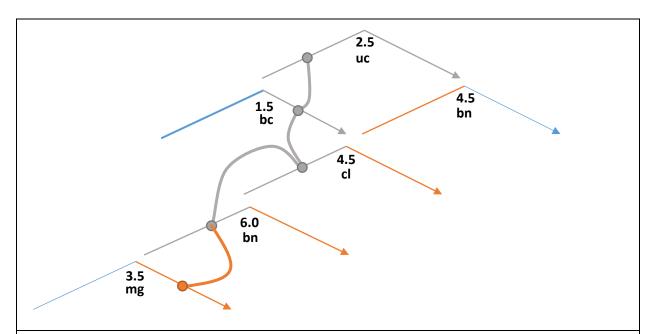
Grey lines are used for both classes before split

Grey lines show overlap of lines from different classes. We cannot draw lines of two classes without line overlap. We need to show them in grey color.

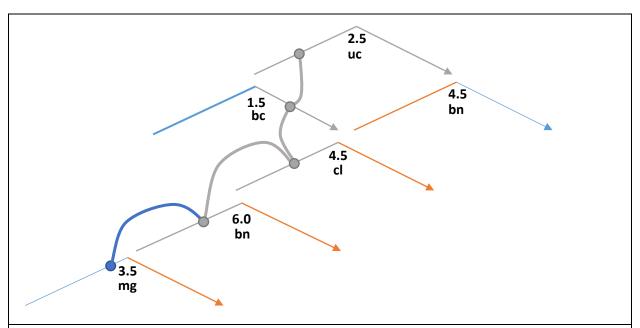




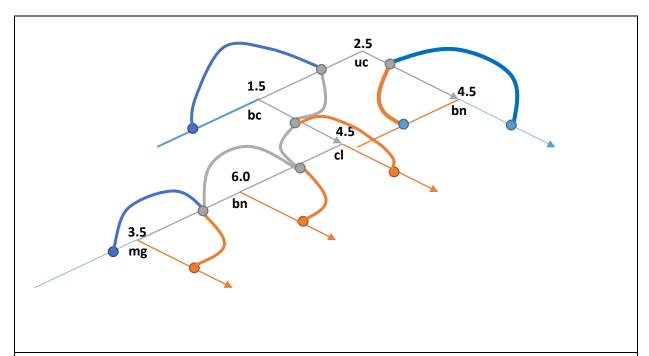
Each coordinate is shown as a line that is bended in the split point. The curves show the cases on respective classes that go through the points where the actual values of coordinates are located.



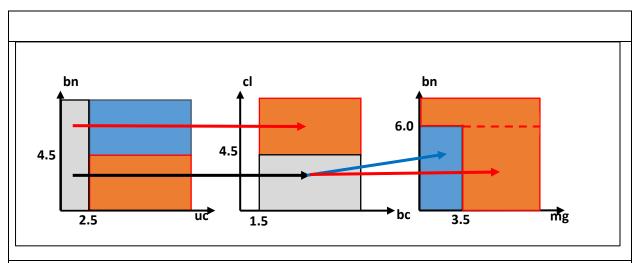
Case (uc, bc, cl, bn, mg) = (1.0, 2.0, 3.0, 4.0, 4.5). Can be a straight Each coordinate is shown as a line that is bended in the split point. The curves show the cases on respective classes that go through the points where the actual values of coordinates are located.



Case (uc, bc, cl, bn, mg) = (1.0, 2.0, 3.0, 4.0, 3.2), Each coordinate is shown as a line that is bended in the split point. The curves show the cases on respective classes that go through the points where the actual values of coordinates are located.



Each coordinate is shown as a line that is bended in the split point. The curves show the cases on respective classes that go through the points where the actual values of coordinates are located.



Can reorder coiordinates to try simlify the visual pattern (build another try with another root. Add actual cases for each tree brinch on a single display and separe for each barnch to decrease occdlusion (with and without lines connecting points (on/off). UI make.

Gradute project: implement both and test on the data size of the tree up to 10 layers, 10 coordintes and 1000 cases. Show trining and valudation data separately.