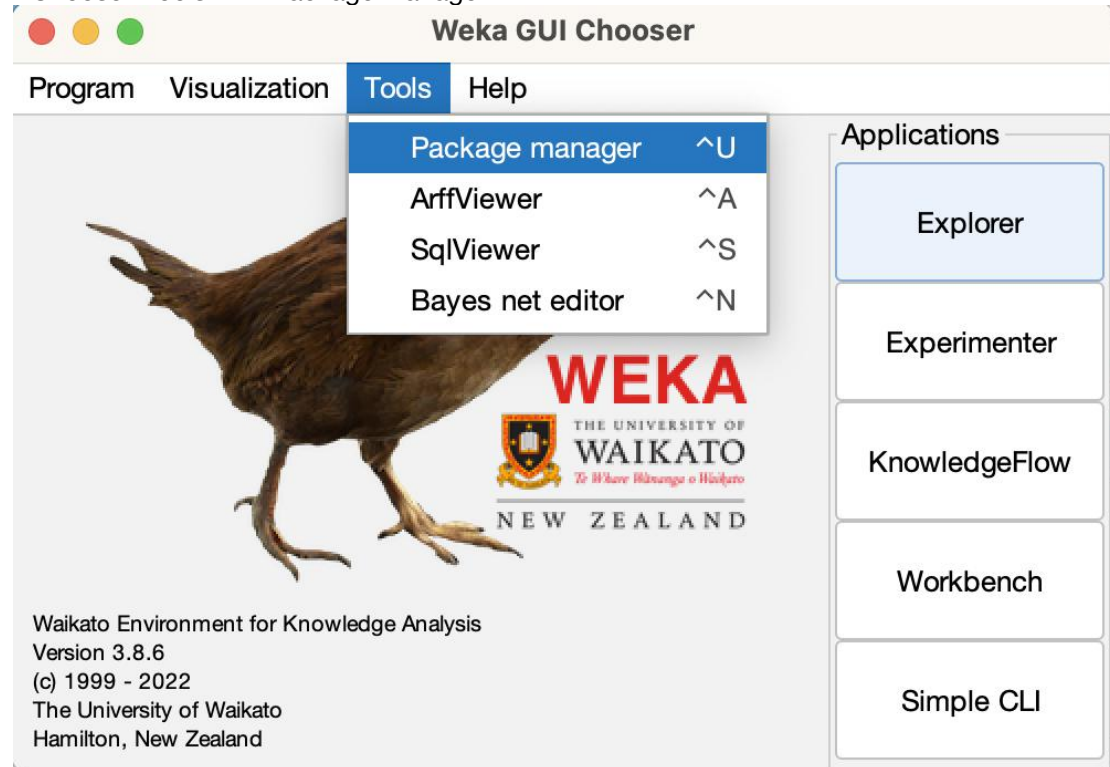


資工三 黃偉祥 111010550

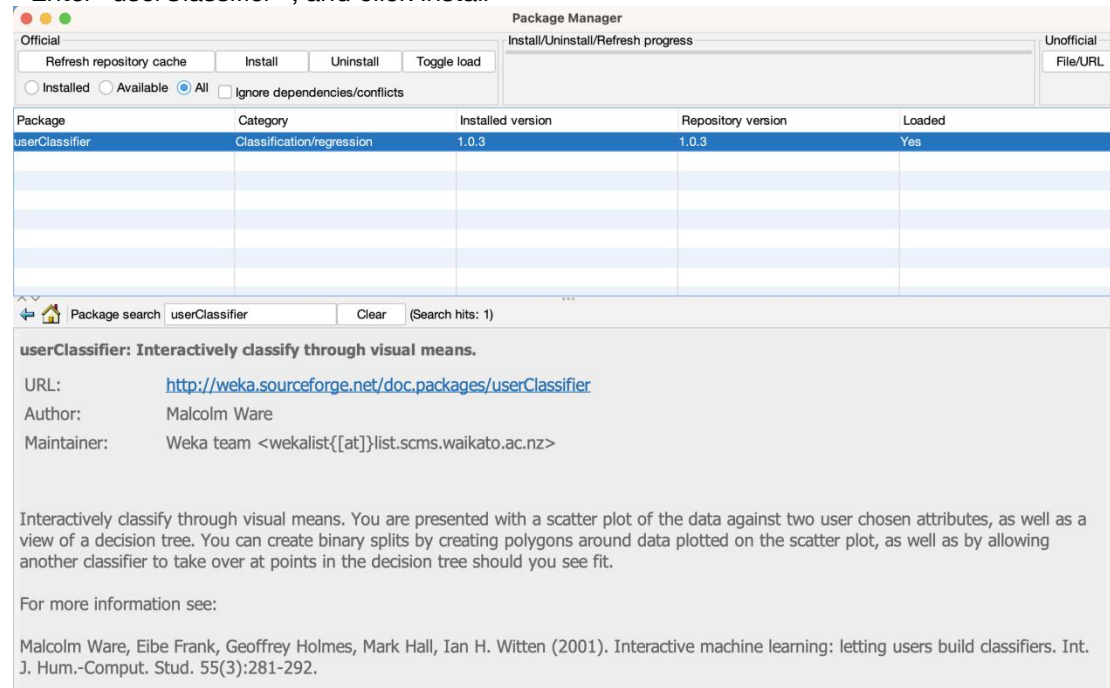
作業一：userClassifier 的應用

Step 1：Install userClassifier

- Choose “Tools” -> “Package manager”

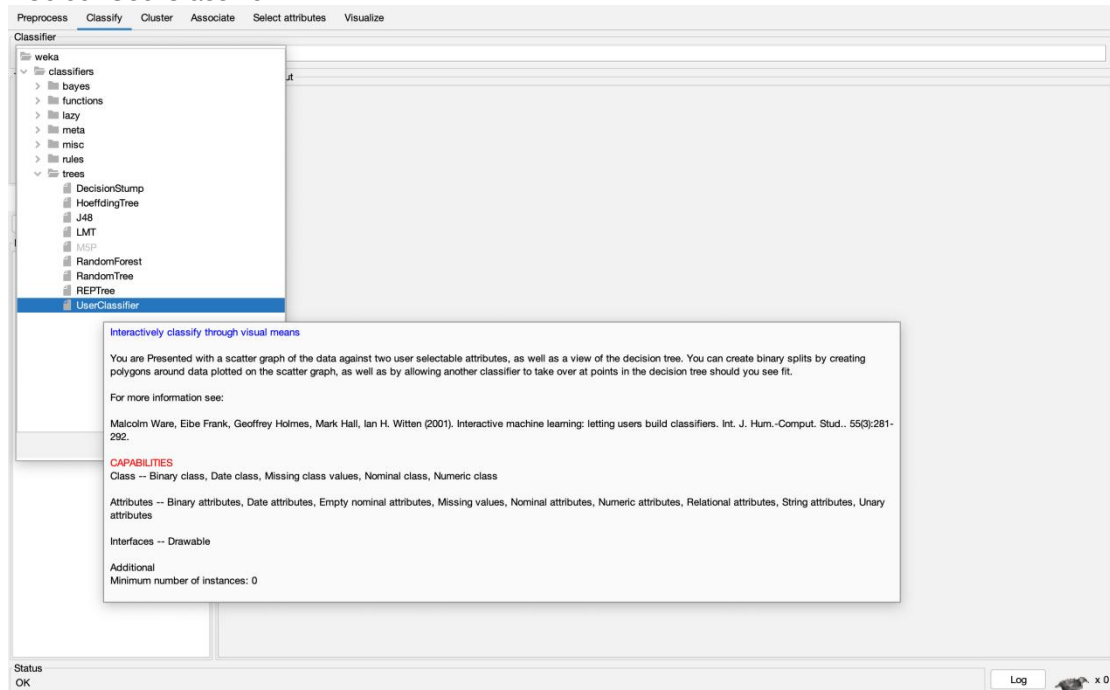


- Enter “userClassifier”, and click install

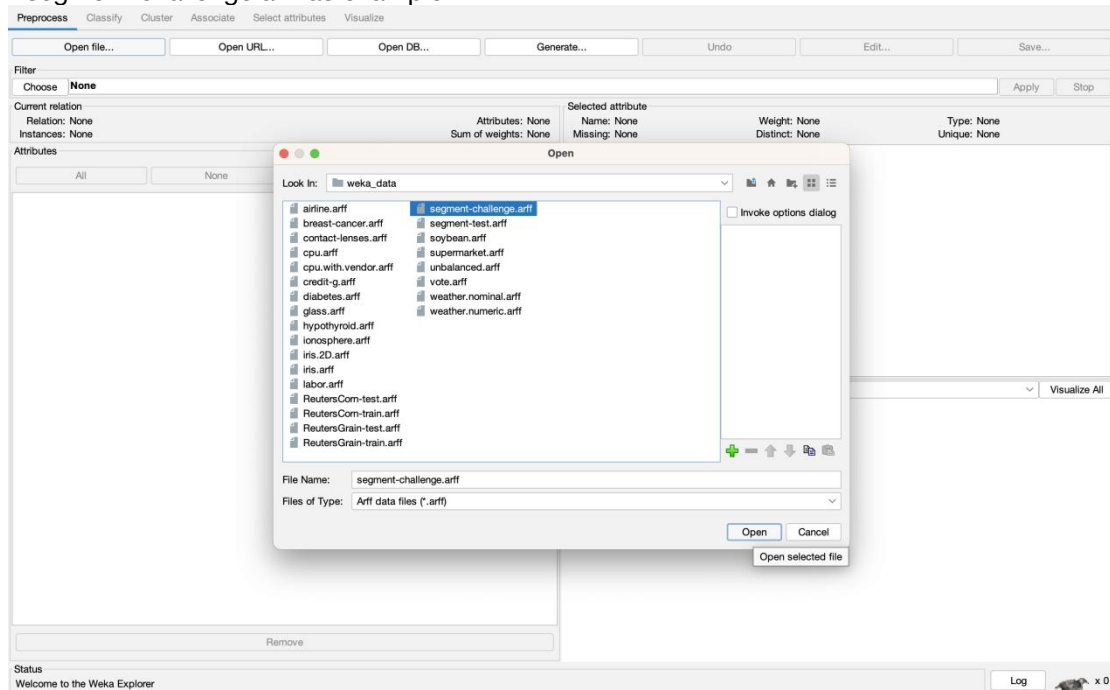


## Step 2 : Choose target file and select “userClassifier”

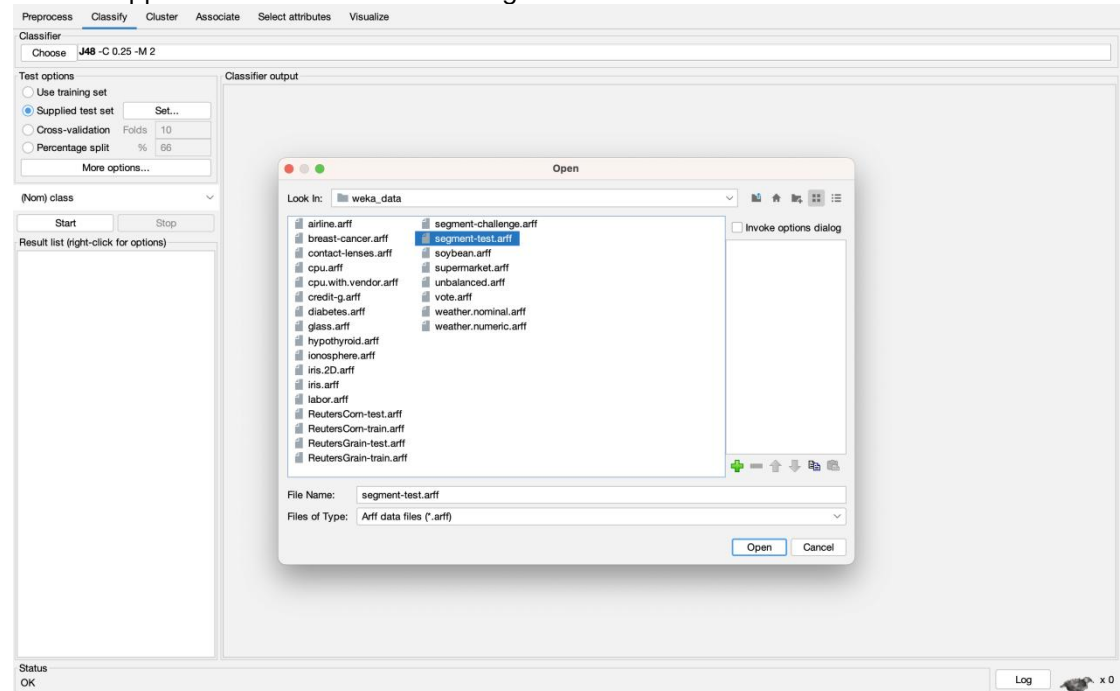
### - Select UserClassifier



### - segment-challenge.arff as example

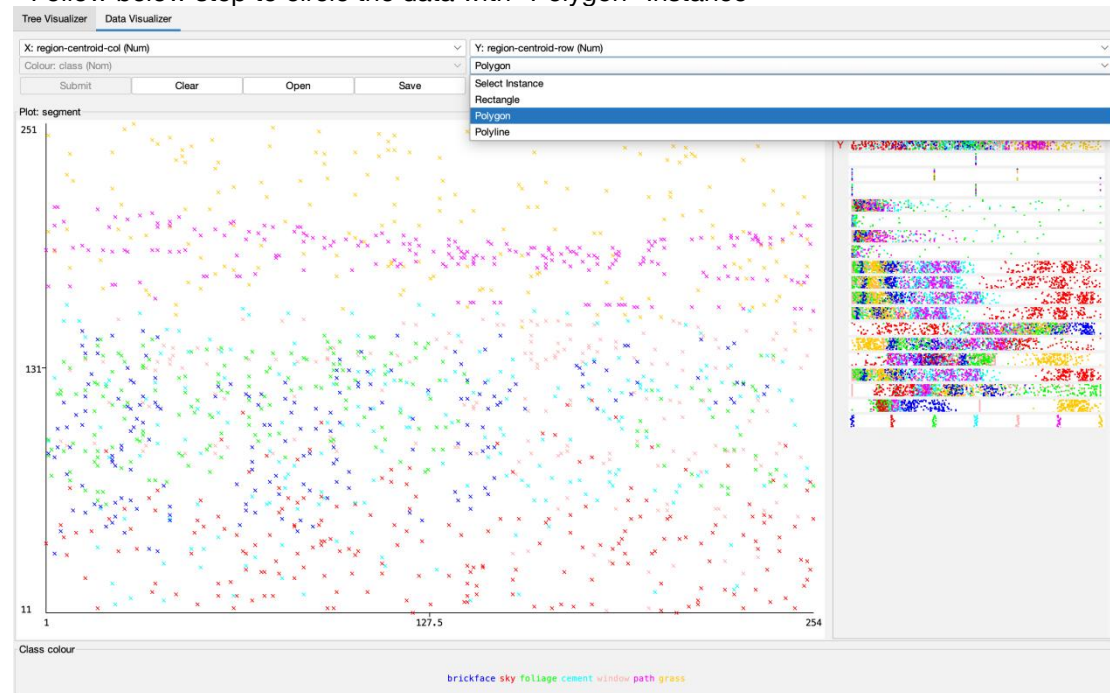


- Use “Supplied test set” and choose “segment-test.arff”

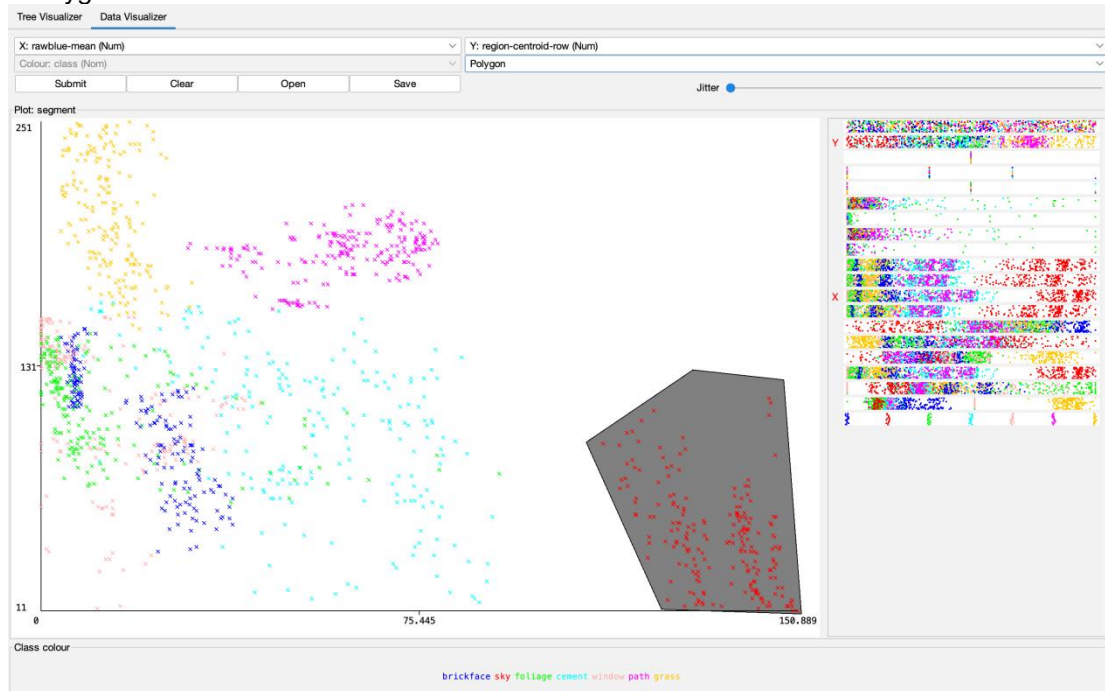


Step 3 : Build your own classifier

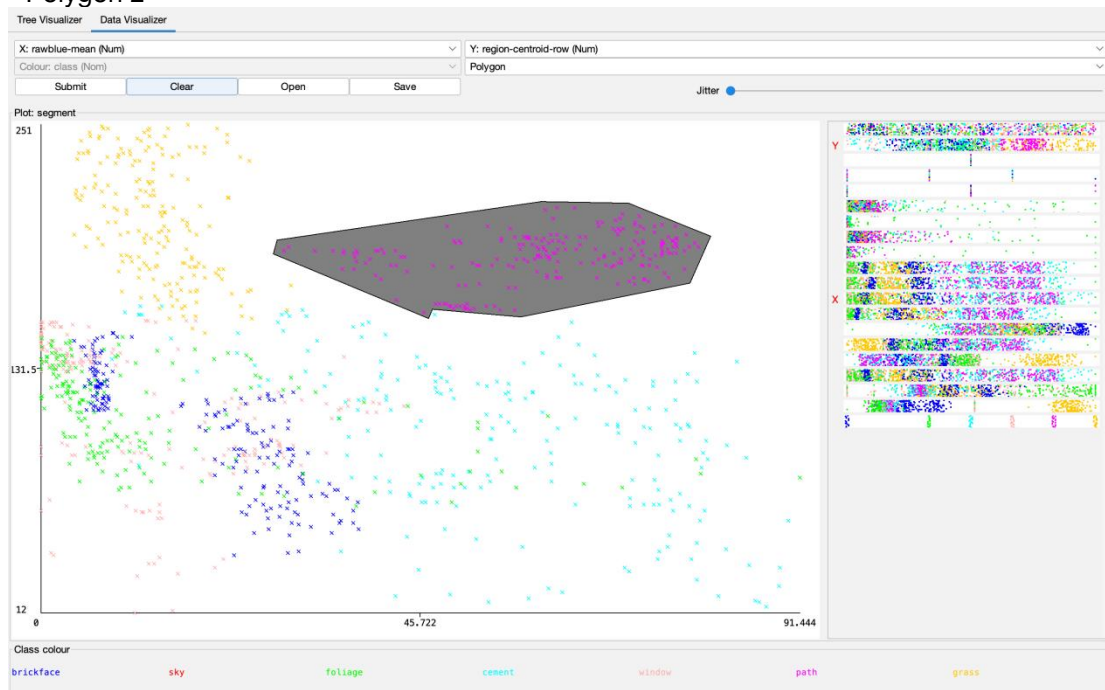
- Click “Start” and choose “Data Visualizer”
- Follow below step to circle the data with “Polygon” Instance



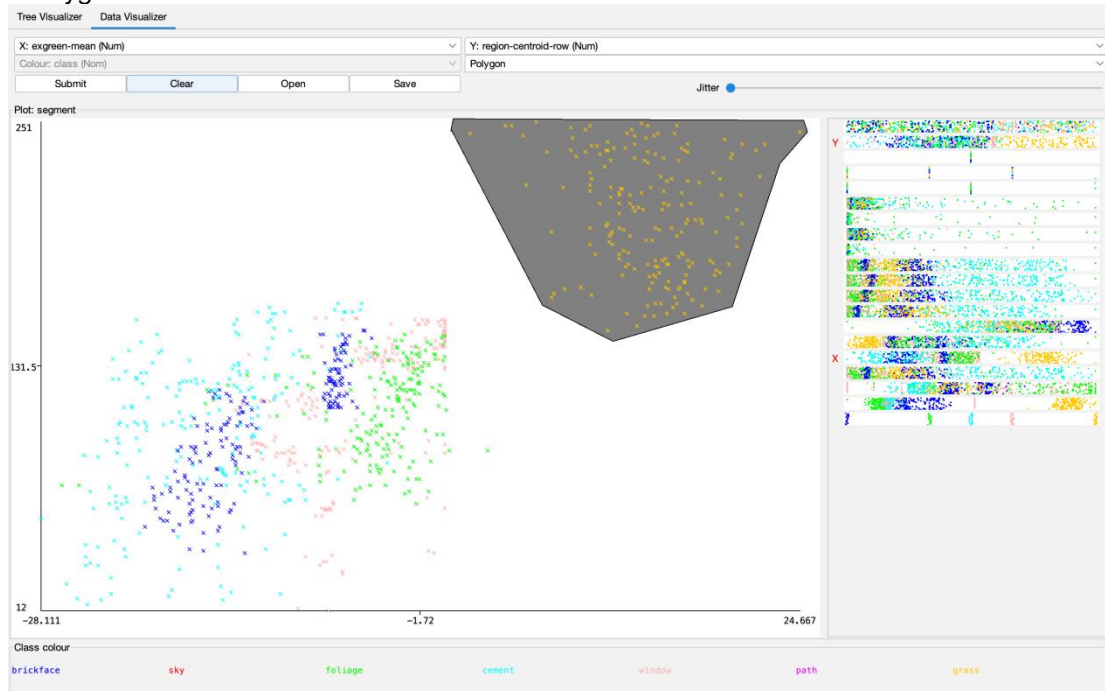
## - Polygon 1



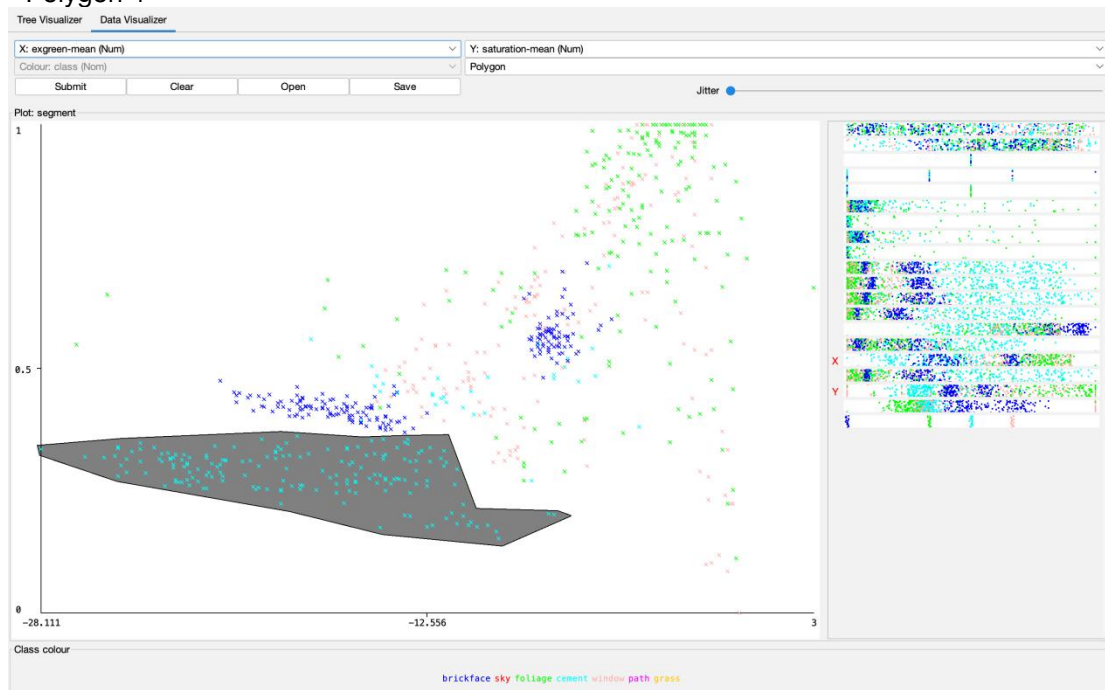
## - Polygon 2



## - Polygon 3

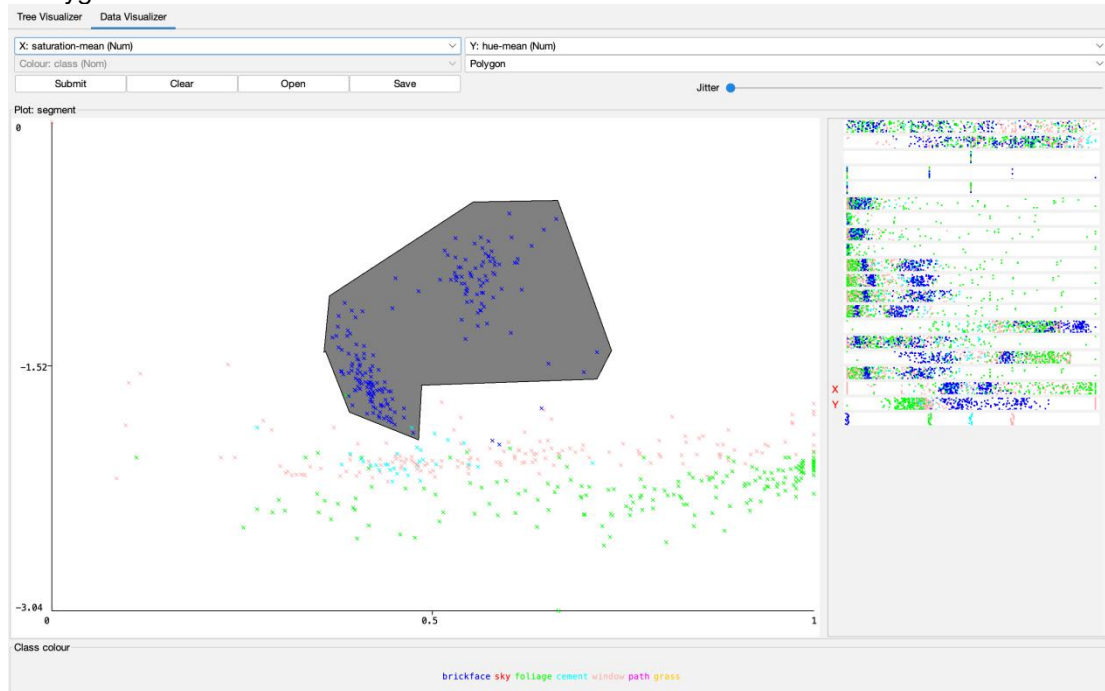


## - Polygon 4

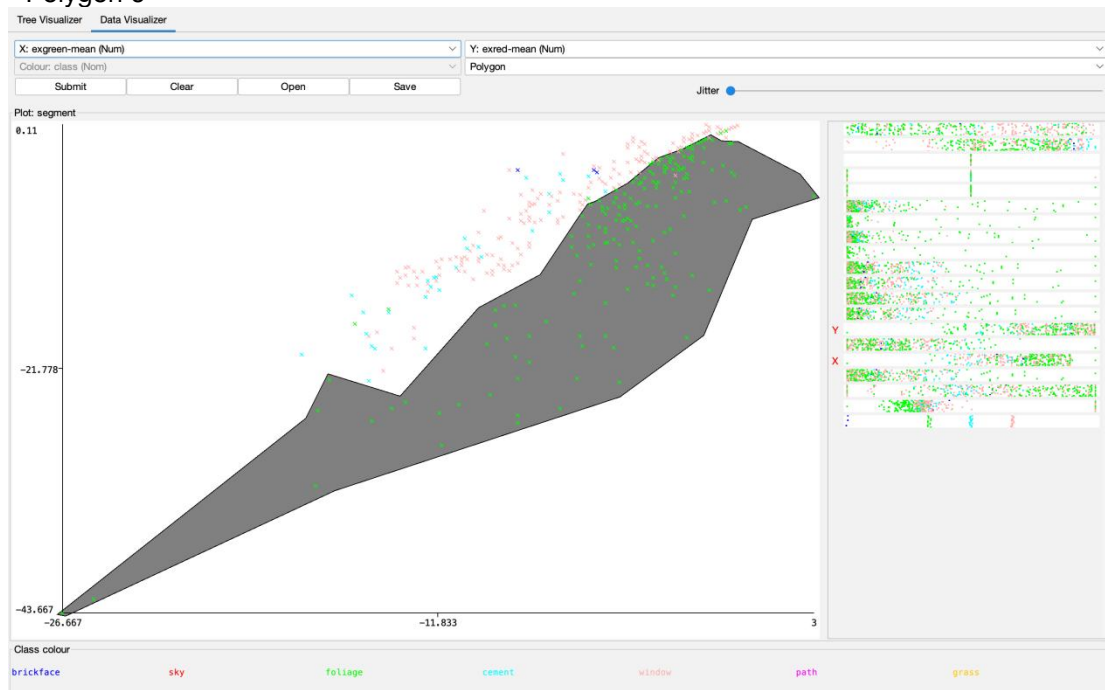




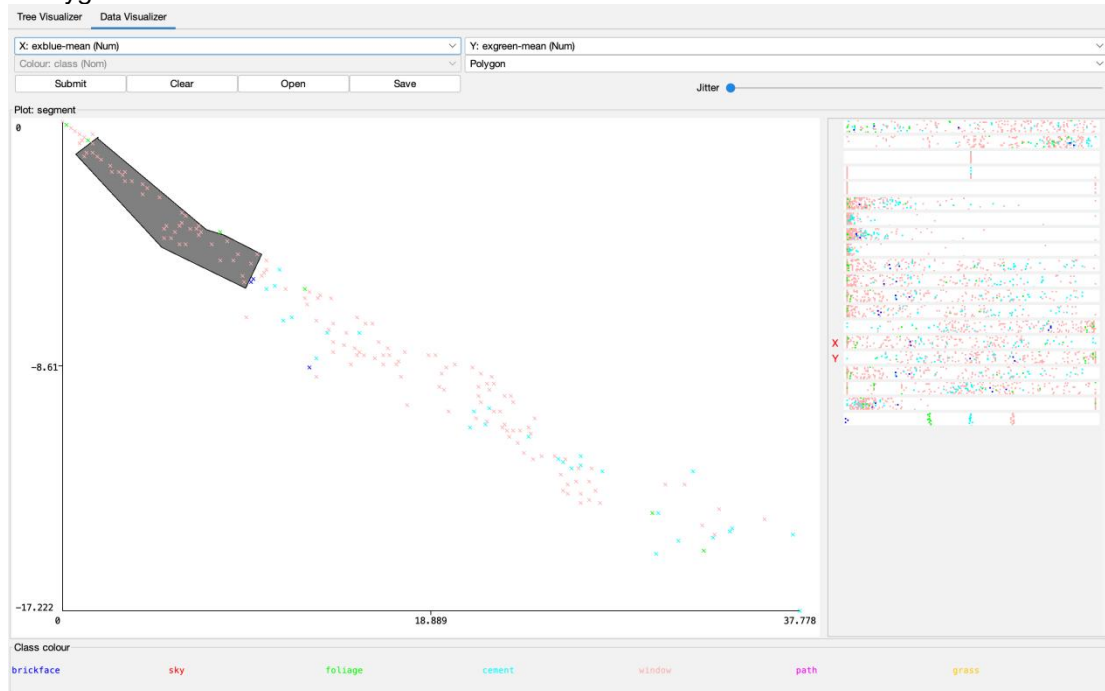
## - Polygon 5



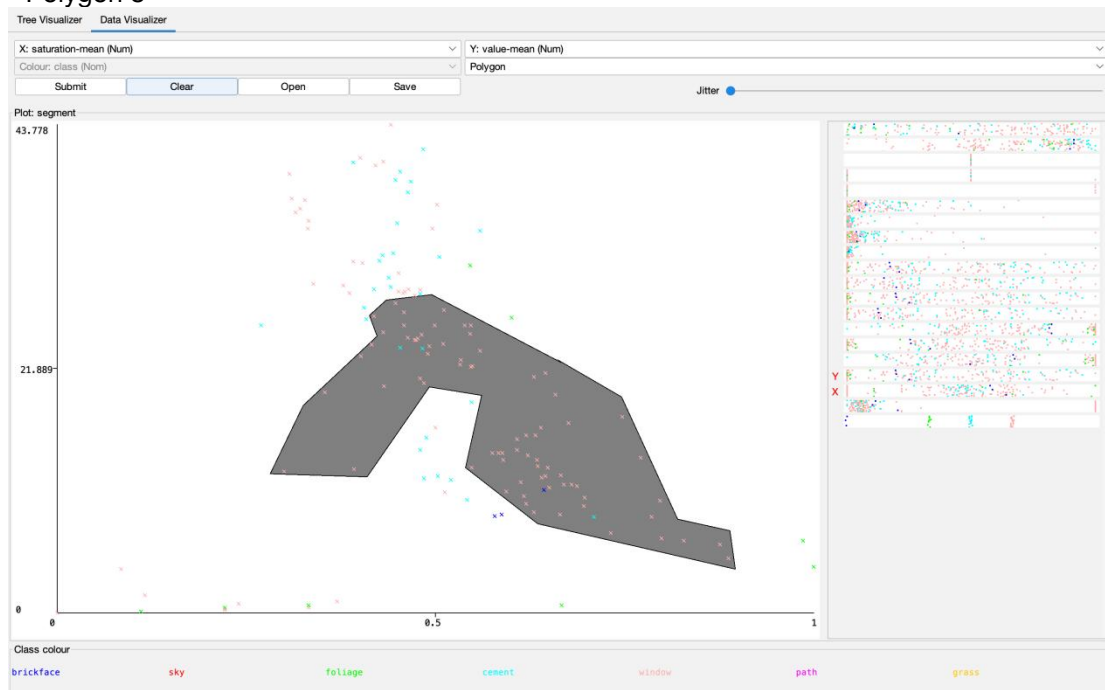
## - Polygon 6



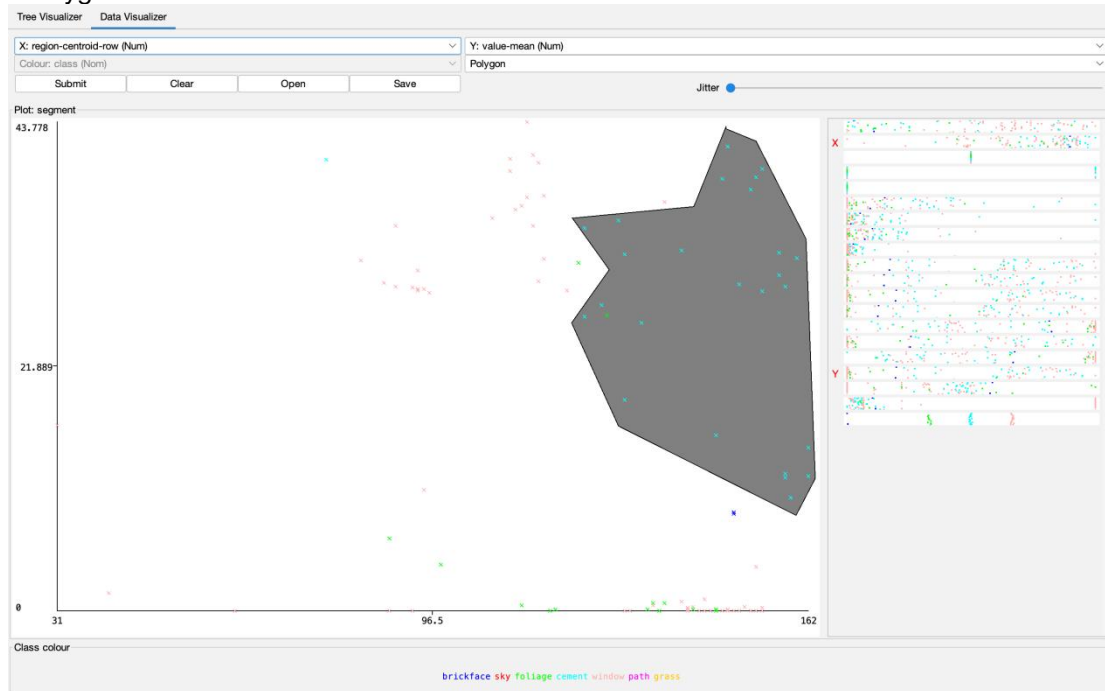
## - Polygon 7



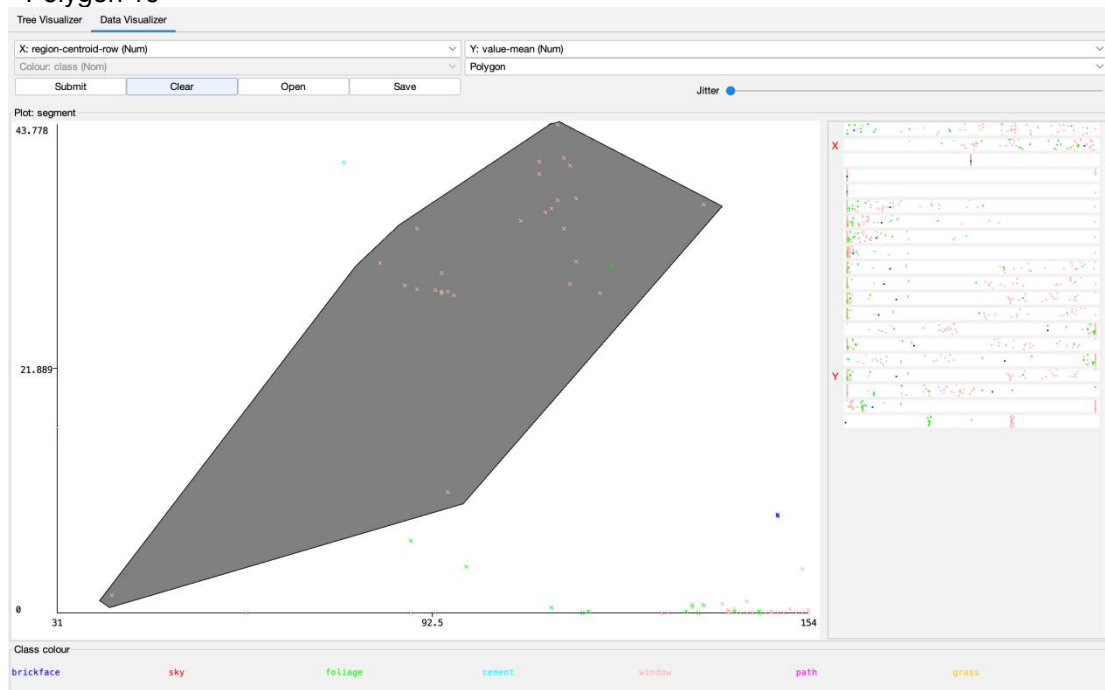
## - Polygon 8



## - Polygon 9

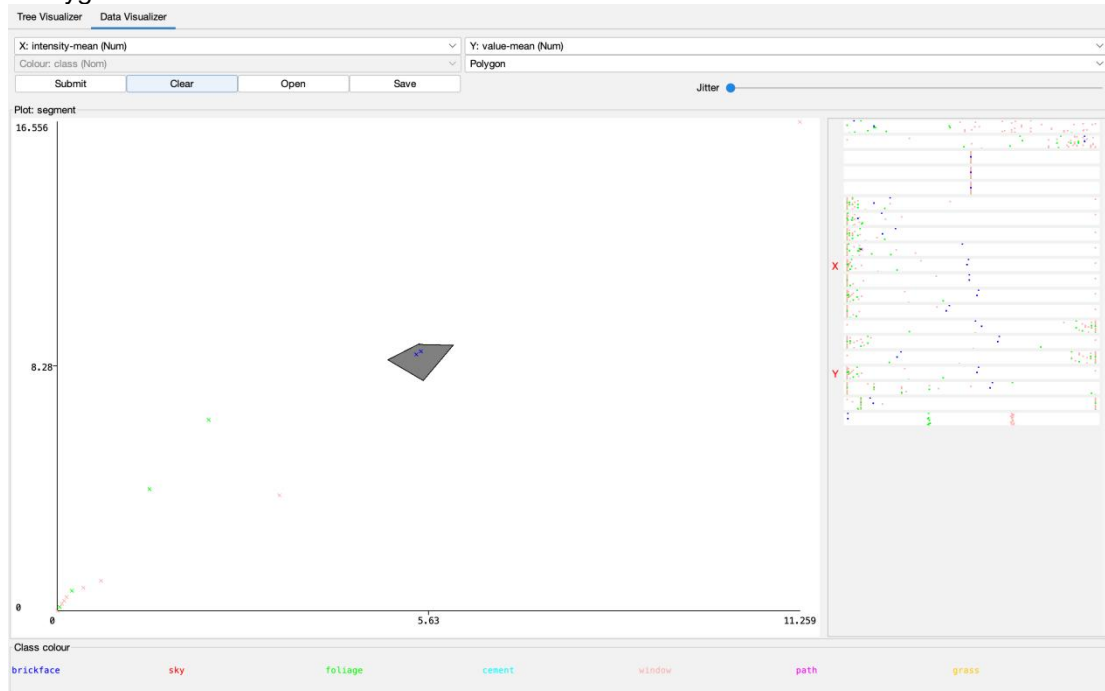


## - Polygon 10

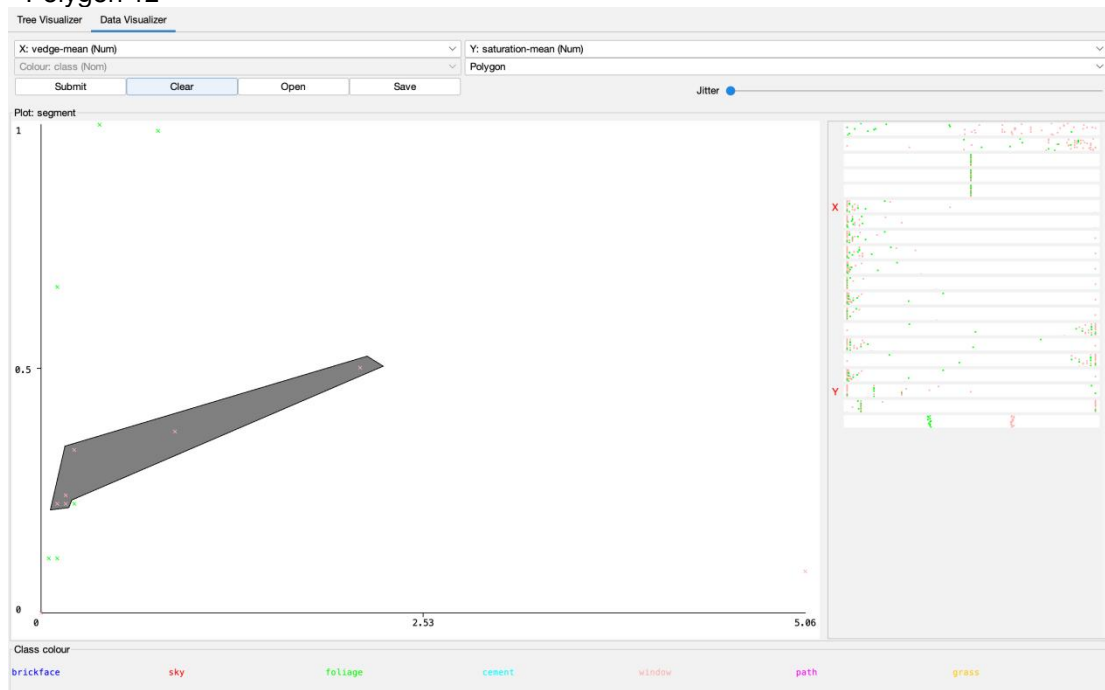




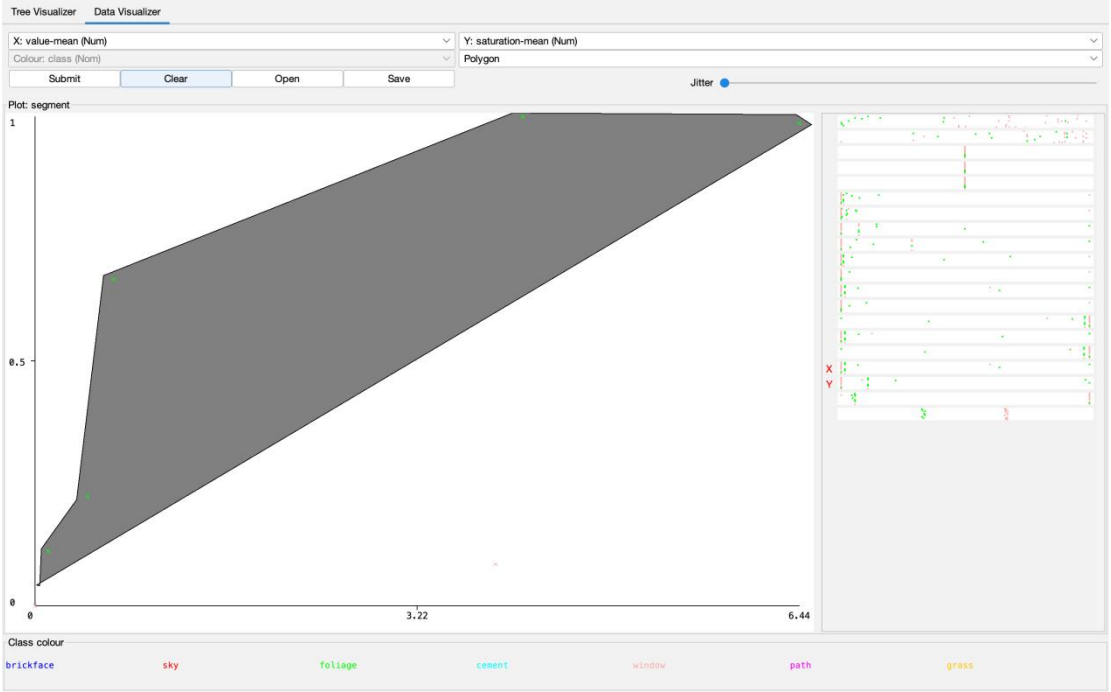
## - Polygon 11



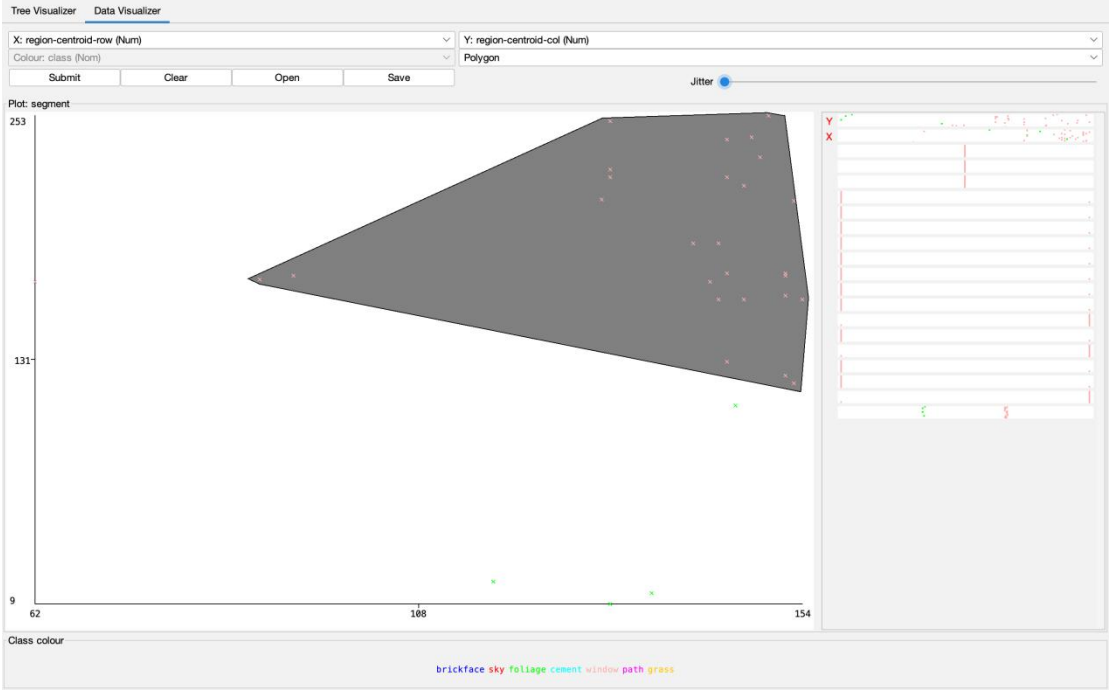
## - Polygon 12



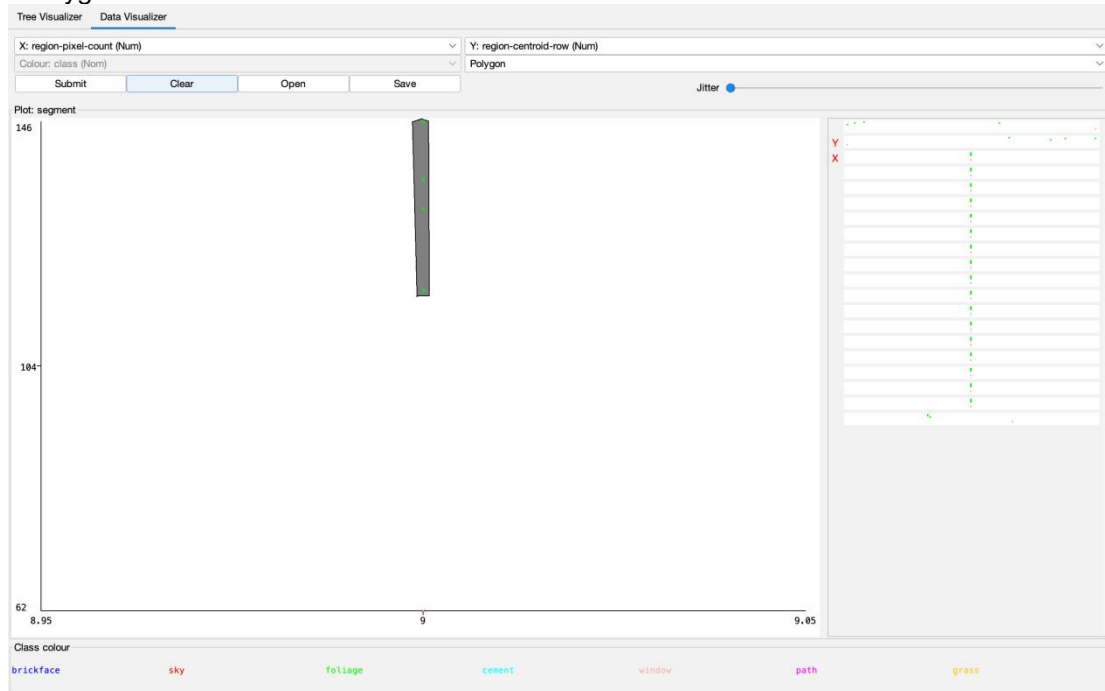
- Polygon 13



- Polygon 14



## - Polygon 15



Step 4 : right click and accept the tree  
- Now we got 94.5679% accuracy

The figure shows the Weka Explorer interface. The 'Classify' tab is selected, and the 'UserClassifier' is chosen. The 'Test options' section shows 'Supplied test set' selected. The 'Classifier output' section displays the following summary:

```

Time taken to test model on supplied test set: 0.01 seconds

=== Summary ===
Correctly Classified Instances      766      94.5679 %
Incorrectly Classified Instances    34        4.1975 %
Kappa statistic                    0.9503
Mean absolute error                 0.0156
Root mean squared error             0.1056
Relative absolute error              6.4501 %
Root relative squared error         30.3303 %
Unclassified Instances              10
Total Number of Instances           810
  
```

The 'Detailed Accuracy By Class' table is as follows:

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	0.984	0.004	0.976	0.984	0.980	0.976	0.979	0.890	brickface
	1.000	0.000	1.000	1.000	1.000	1.000	0.993	0.917	sky
	0.934	0.024	0.876	0.934	0.904	0.887	0.962	0.802	foliage
	0.972	0.007	0.954	0.972	0.963	0.957	0.977	0.899	cement
	0.870	0.015	0.915	0.870	0.892	0.873	0.964	0.780	window
	0.989	0.000	1.000	0.989	0.995	0.994	0.988	0.895	path
	0.967	0.000	1.000	0.967	0.983	0.980	0.978	0.911	grass
Weighted Avg.	0.958	0.007	0.958	0.958	0.958	0.950	0.977	0.868	

The 'Confusion Matrix' is as follows:

```

=== Confusion Matrix ===
 a  b  c  d  e  f  g  <-- classified as
123 0  0  1  1  0  0 | a = brickface
0 110 0  0  0  0  0 | b = sky
2  0 113 0  6  0  0 | c = foliage
1  0  0 103 2  0  0 | d = cement
0  0 14  2 107 0  0 | e = window
0  0  0  1  0 93  0 | f = path
0  0  2  1  1  0 117 | g = grass
  
```

The 'Result list' on the left shows the classifier was run at 10:24:35, 10:28:55, and 11:00:15. The status bar at the bottom shows 'OK' and a 'Log' button.