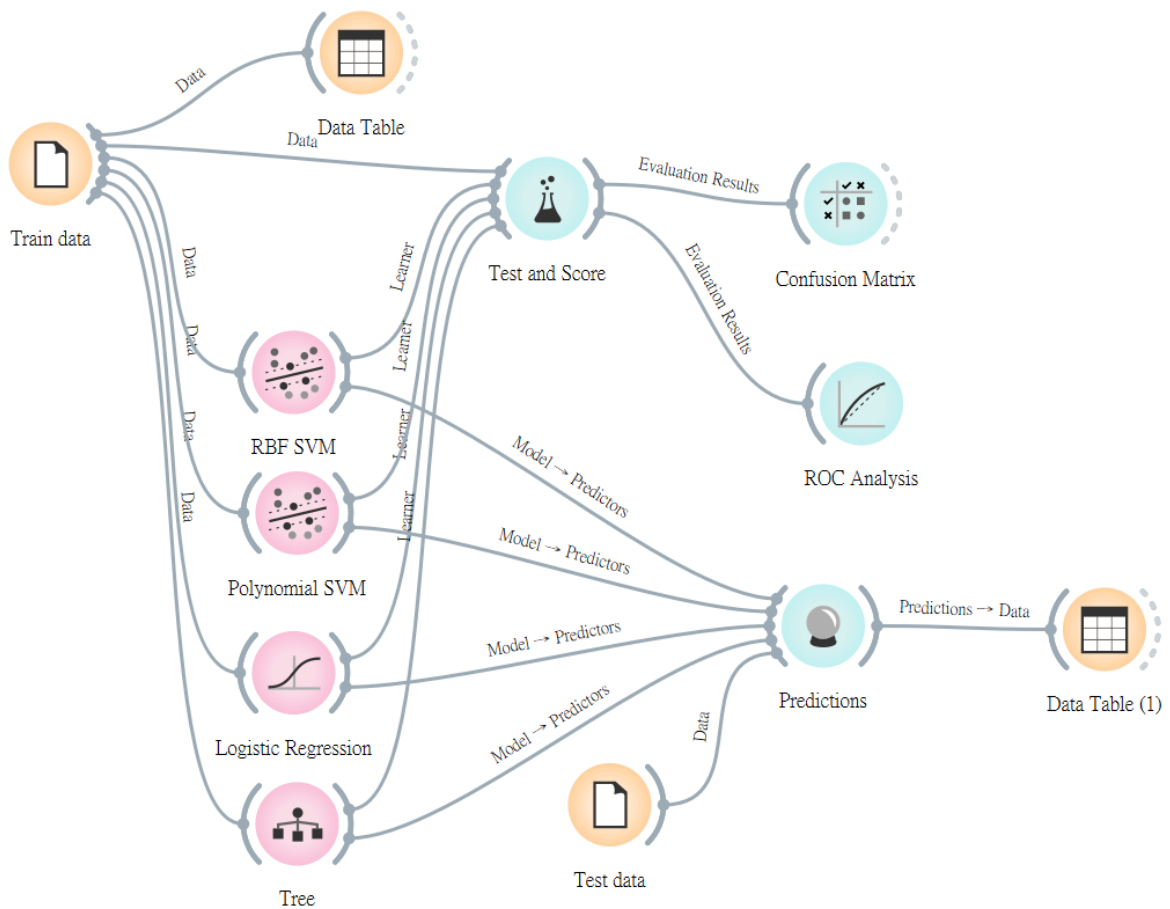


109306011 資管四甲 朱茂榛 NID

Workflow:



Parameters:

## 1. Logistic Regression

Logistic Regr... ? ×

File View Window Help

Name  
Logistic Regression

Regularization type: Ridge (L2) ▾

Strength:  
Weak  Strong  
C=1

☐ Balance class distribution

☒ Apply Automatically

≡ ? | 25.2k | 123 |

## 2. RBF SVM

🚩 RBF SVM - Orange ? ✕

File View Window Help

Name  
RBF SVM

SVM Type

☒ SVM Cost (C): 1.00

Regression loss epsilon ( $\epsilon$ ): 0.10

☐  $\nu$ -SVM Regression cost (C): 1.00

Complexity bound ( $\nu$ ): 0.50

Kernel

☐ Linear Kernel:  $\exp(-g\|x-y\|^2)$

☐ Polynomial g: auto

☒ RBF

☐ Sigmoid

Optimization Parameters

Numerical tolerance: 0.0010

☒ Iteration limit: 100

☒ Apply Automatically

≡ ? 📄 | ↶ 25.2k | - ↷ 🖨️ | 200

## 3. Polynomial SVM

🚩 Polynomial SVM - Orange ? ✕

File View Window Help

Name  
Polynomial SVM

SVM Type

☒ SVM Cost (C): 1.00

Regression loss epsilon ( $\epsilon$ ): 0.10

☐  $\nu$ -SVM Regression cost (C): 1.00

Complexity bound ( $\nu$ ): 0.50

Kernel

☐ Linear Kernel:  $(g \cdot x \cdot y + c)^d$

☒ Polynomial g: auto

☐ RBF c: 1.00

☐ Sigmoid d: 3.0

Optimization Parameters

Numerical tolerance: 0.0010

☒ Iteration limit: 100

☒ Apply Automatically

≡ ? 📄 | ↶ 25.2k | - ↷ 🖨️ | 193

## 4. Tree

Tree - Orange ? ×

File View Window Help

Name

Tree

Parameters

☐ Induce binary tree

☒ Min. number of instances in leaves: 2

☒ Do not split subsets smaller than: 5

☒ Limit the maximal tree depth to: 100

Classification

☒ Stop when majority reaches [%]: 95

☒ Apply Automatically

≡ ? | 25.2k | - | □ | M

## 5. Number of Folds:

☒ Cross validation

Number of folds: 10

☐ Stratified

☐ Cross validation by feature

☐ Random sampling

Repeat train/test: 10

Training set size: 66 %

☒ Stratified

☐ Leave one out

☐ Test on train data

☐ Test on test data

## Evaluation:

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

Model	AUC	CA	F1	Prec	Recall	MCC	▼
RBF SVM	0.929	0.767	0.757	0.797	0.767	0.555	
Logistic Regression	0.950	0.884	0.884	0.885	0.884	0.768	
Polynomial SVM	0.605	0.566	0.448	0.702	0.566	0.174	
Tree	0.985	0.978	0.978	0.978	0.978	0.955	

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

	RBF SVM	Logistic Regres...	Polynomial SVM	Tree
RBF SVM		0.010	0.000	0.000
Logistic Regression	0.990		0.000	0.000
Polynomial SVM	1.000	1.000		0.000
Tree	1.000	1.000	1.000	

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.

## Confusion Matrix:

### 1. Logistic Regression:

Learners

- RBF SVM
- Logistic Regression
- Polynomial SVM
- Tree

Output

☒ Predictions

☐ Probabilities

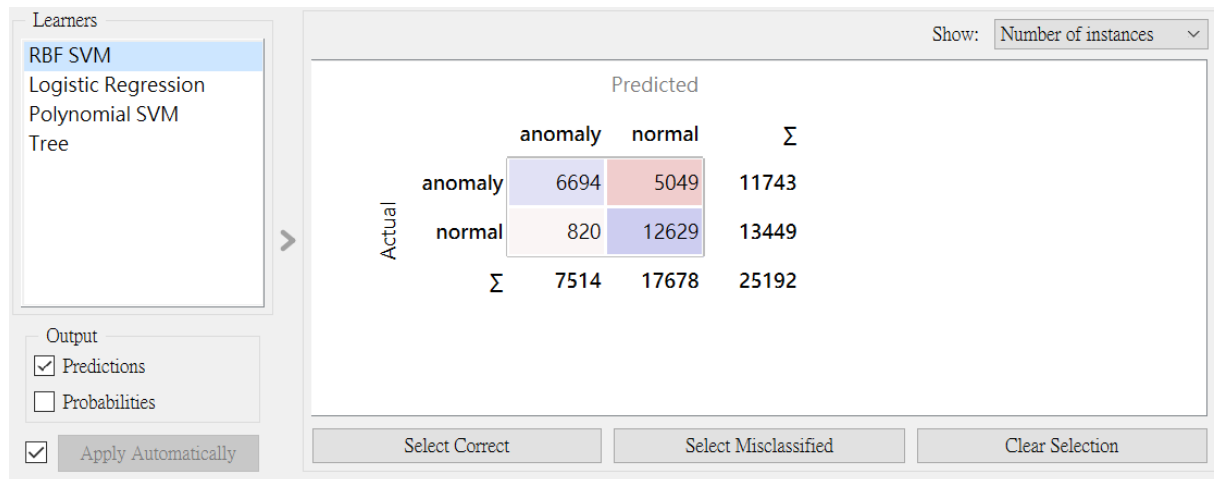
☒ Apply Automatically

Show: Number of instances ▼

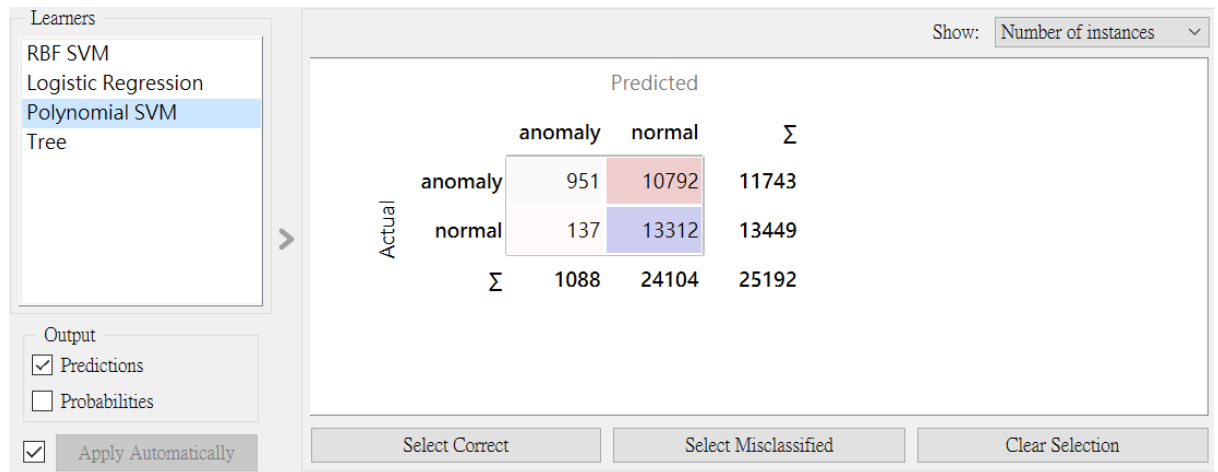
		Predicted		
		anomaly	normal	Σ
Actual	anomaly	9897	1846	11743
	normal	1068	12381	13449
Σ		10965	14227	25192

Select Correct Select Misclassified Clear Selection

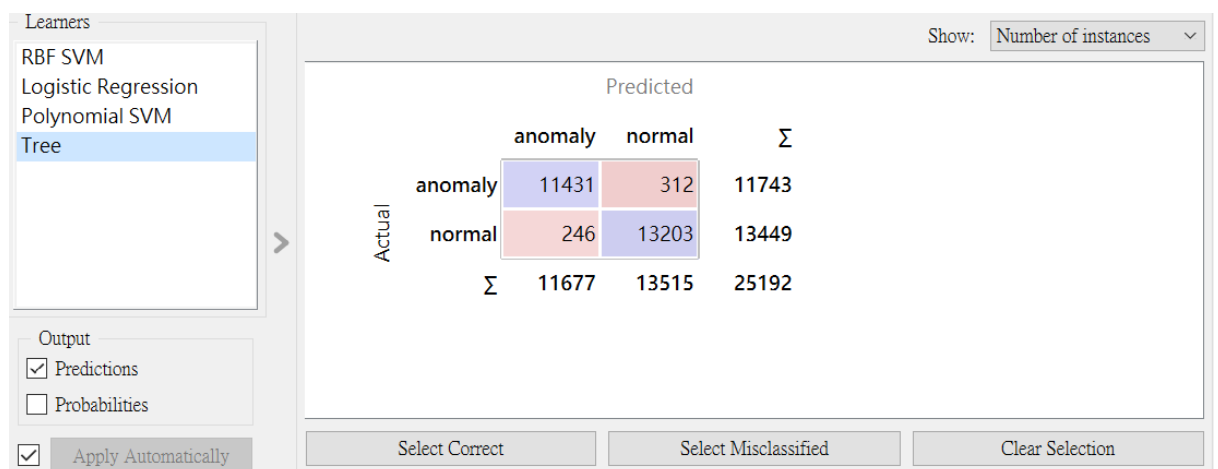
## 2. RBF SVM:



### 3. Polynomial SVM:



#### 4. Tree:



### ROC Analysis:

