In[1]:=
```
dataPath = FileNameJoin[
    {ParentDirectory[NotebookDirectory[]], "data/dataOccupancyPreprocessed.csv"}];
```

In[2]:=
```
data = SemanticImport[dataPath, {"DateTime", "Real", "Real",
     "Real", "Real", "Real", "Boolean"}, "Dataset", HeaderLines → 1];
```

In[3]:=
```
trainData = Values@
    Normal[data[[All, {"Temperature", "Humidity", "Light", "CO2", "HumidityRatio"}]]];
```

In[15]:=
```
cluster[method_: "GaussianMixture", numberClusters_: 2,
  distanceFunction_: EuclideanDistance] := Module[{clusters, rules, classifier},
  clusters = ClusteringComponents[trainData, numberClusters, 1, Method → method,
    DistanceFunction → distanceFunction, PerformanceGoal → "Quality"];
  rules = Map[clusters[[#]] → data[[#, "Occupancy"]] &, Range[Length[data]]];
  classifier = Classify[rules, Method → Automatic];
  Return[ClassifierMeasurements[classifier, rules]];
 ]
```

In[96]:=
```
cm = cluster["KMedoids", 2, ManhattanDistance];
```

In[97]:=
```
cm["ClassMeanCrossEntropy"]
```

Out[97]=
```
⟨|False → 0.110549, True → 0.454477|⟩
```

In[98]:=
```
cm["Accuracy"]
```

Out[98]=
```
0.939748
```

In[99]:=
```
cm["FScore"]
```

Out[99]=
```
⟨|False → 0.961447, True → 0.862169|⟩
```

In[100]:=
```
cm["ClassMeanCrossEntropy"]
```

Out[100]=
```
⟨|False → 0.110549, True → 0.454477|⟩
```

In[101]:=
```
cm["Specificity"]
```

Out[101]=
```
⟨|False → 0.944193, True → 0.938639|⟩
```

In[102]:=
```
cm["Perplexity"]
```

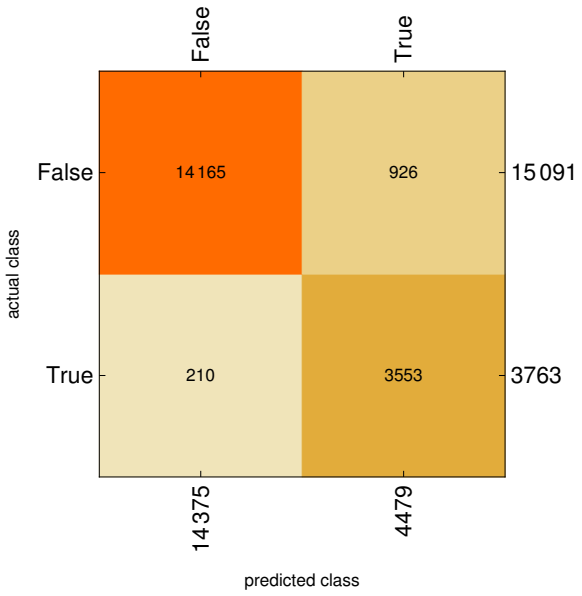
Out[102]=
```
1.19625
```

In[103]:=
```
cm["Precision"]
```

Out[103]=
```
⟨|False → 0.985391, True → 0.793257|⟩
```

In[104]:=
```
cm["ConfusionMatrixPlot"]
```

Out[104]=



In[105]:=
```
cm["ROCCurve"]
```

Out[105]=