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[86]:=
```
cm = cluster["KMedoids", 10, ManhattanDistance];
```

In[87]:=
```
cm["ClassMeanCrossEntropy"]
```

Out[87]=
```
⟨|False → 0.0864381, True → 0.327657|⟩
```

In[88]:=
```
cm["Accuracy"]
```

Out[88]=
```
0.960751
```

In[89]:=
```
cm["FScore"]
```

Out[89]=
```
⟨|False → 0.975108, True → 0.907268|⟩
```

In[90]:=
```
cm["ClassMeanCrossEntropy"]
```

Out[90]=
```
⟨|False → 0.0864381, True → 0.327657|⟩
```

In[91]:=
```
cm["Specificity"]
```

Out[91]=
```
⟨|False → 0.961998, True → 0.96044|⟩
```

In[92]:=
```
cm["Perplexity"]
```

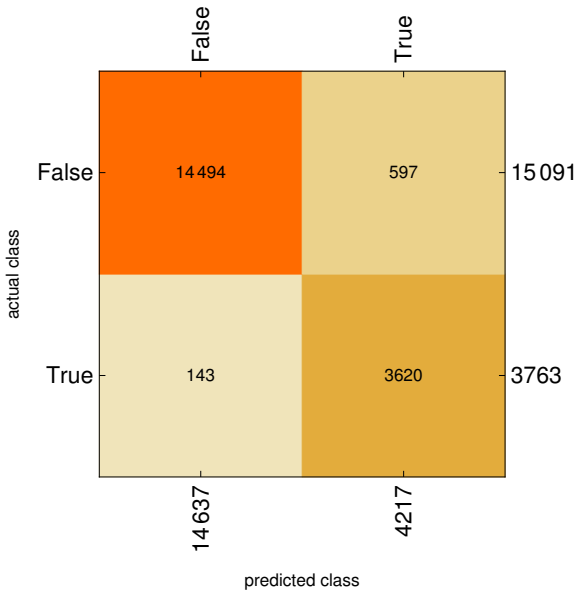
Out[92]=
```
1.14406
```

In[93]:=
```
cm["Precision"]
```

Out[93]=
```
⟨|False → 0.99023, True → 0.85843|⟩
```

In[94]:=
```
cm["ConfusionMatrixPlot"]
```

Out[94]=



In[95]:=
```
cm["ROCCurve"]
```

Out[95]=