In[113]:=
```
dataPath = FileNameJoin[
    {ParentDirectory[NotebookDirectory[]], "data/dataOccupancyPreprocessed.csv"}];
```

In[114]:=
```
data = SemanticImport[dataPath, {"DateTime", "Real",
     "Real", "Real", "Real", "Real", "Boolean"}, "Dataset", HeaderLines → 1];
```

In[115]:=
```
trainData = Values@
    Normal[data[[All, {"Temperature", "Humidity", "Light", "CO2", "HumidityRatio"}]]];
```

In[116]:=
```
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[117]:=
```
cm = cluster["KMedoids", 30, SquaredEuclideanDistance];
```

In[118]:=
```
cm["ClassMeanCrossEntropy"]
```

Out[118]=
```
⟨|False → 0.0325596, True → 0.0921367|⟩
```

In[119]:=
```
cm["Accuracy"]
```

Out[119]=
```
0.98796
```

In[120]:=
```
cm["FScore"]
```

Out[120]=
```
⟨|False → 0.992461, True → 0.97012|⟩
```

In[121]:=
```
cm["ClassMeanCrossEntropy"]
```

Out[121]=
```
⟨|False → 0.0325596, True → 0.0921367|⟩
```

In[122]:=
```
cm["Specificity"]
```

Out[122]=
```
⟨|False → 0.979272, True → 0.990127|⟩
```

In[123]:=
```
cm["Perplexity"]
```

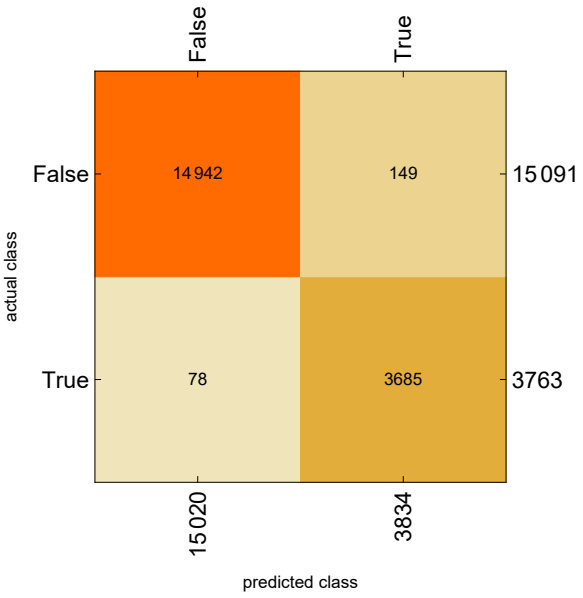
Out[123]=
```
1.04545
```

In[124]:=
```
cm["Precision"]
```

Out[124]=
```
⟨|False → 0.994807, True → 0.961137|⟩
```

In[125]:=
```
cm["ConfusionMatrixPlot"]
```

Out[125]=



In[126]:=
```
cm["ROCCurve"]
```

Out[126]=