In[169]:=
```
dataPath = FileNameJoin[
    {ParentDirectory[NotebookDirectory[]], "data/dataOccupancyPreprocessed.csv"}];
```

In[170]:=
```
data = SemanticImport[dataPath, {"DateTime", "Real",
     "Real", "Real", "Real", "Real", "Boolean"}, "Dataset", HeaderLines → 1];
```

In[171]:=
```
trainData = Values@
    Normal[data[[All, {"Temperature", "Humidity", "Light", "CO2", "HumidityRatio"}]]];
```

In[172]:=
```
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[173]:=
```
cm = cluster["KMeans", 10, SquaredEuclideanDistance];
```

In[174]:=
```
cm["ClassMeanCrossEntropy"]
```

Out[174]=
```
⟨|False → 0.065543, True → 0.289837|⟩
```

In[175]:=
```
cm["Accuracy"]
```

Out[175]=
```
0.95741
```

In[176]:=
```
cm["FScore"]
```

Out[176]=
```
⟨|False → 0.9733, True → 0.894799|⟩
```

In[177]:=
```
cm["ClassMeanCrossEntropy"]
```

Out[177]=
```
⟨|False → 0.065543, True → 0.289837|⟩
```

In[178]:=
```
cm["Specificity"]
```

Out[178]=
```
⟨|False → 0.907521, True → 0.96985|⟩
```

In[179]:=
```
cm["Perplexity"]
```

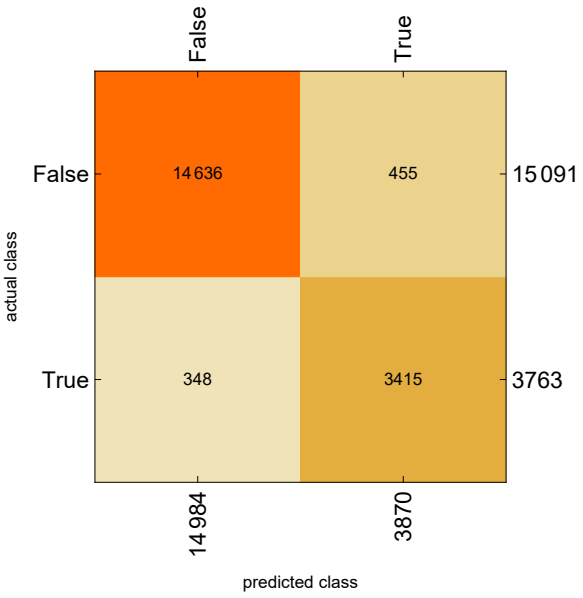
Out[179]=
```
1.11662
```

In[180]:=
```
cm["Precision"]
```

Out[180]=
```
⟨|False → 0.976775, True → 0.882429|⟩
```

In[181]:=
```
cm["ConfusionMatrixPlot"]
```

Out[181]=



In[182]:=
```
cm["ROCCurve"]
```

Out[182]=