In[155]:=
```
dataPath = FileNameJoin[
    {ParentDirectory[NotebookDirectory[]], "data/dataOccupancyPreprocessed.csv"}];
```

In[156]:=
```
data = SemanticImport[dataPath, {"DateTime", "Real",
     "Real", "Real", "Real", "Real", "Boolean"}, "Dataset", HeaderLines → 1];
```

In[157]:=
```
trainData = Values@
    Normal[data[[All, {"Temperature", "Humidity", "Light", "CO2", "HumidityRatio"}]]];
```

In[158]:=
```
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[159]:=
```
cm = cluster["KMeans", 2, SquaredEuclideanDistance];
```

In[160]:=
```
cm["ClassMeanCrossEntropy"]
```

Out[160]=
```
⟨|False → 0.142283, True → 1.02039|⟩
```

In[161]:=
```
cm["Accuracy"]
```

Out[161]=
```
0.901347
```

In[162]:=
```
cm["FScore"]
```

Out[162]=
```
⟨|False → 0.940085, True → 0.720888|⟩
```

In[163]:=
```
cm["ClassMeanCrossEntropy"]
```

Out[163]=
```
⟨|False → 0.142283, True → 1.02039|⟩
```

In[164]:=
```
cm["Specificity"]
```

Out[164]=
```
⟨|False → 0.63832, True → 0.966934|⟩
```

In[165]:=
```
cm["Perplexity"]
```

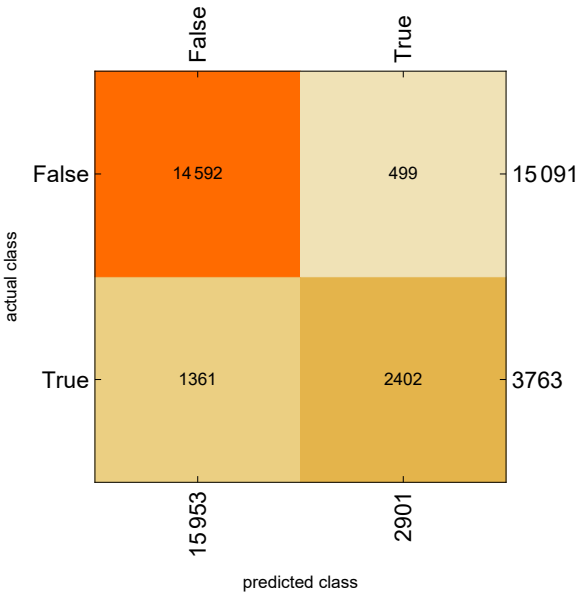
Out[165]=
```
1.37374
```

In[166]:=
```
cm["Precision"]
```

Out[166]=
```
⟨|False → 0.914687, True → 0.82799|⟩
```

In[167]:=
```
cm["ConfusionMatrixPlot"]
```

Out[167]=



In[168]:=
```
cm["ROCCurve"]
```

Out[168]=