Khalid

Target Absent (sorted)

0.1335	0.7763	1.0657	1.2963	1.6655	1.989	2.8162
0.2495	0.8085	1.0788	1.3527	1.6942	2.069	2.8323
0.3672	0.8257	1.0908	1.3817	1.8613	2.2271	2.8911
0.4386	0.8473	1.1034	1.4122	1.8712	2.2434	2.9679
0.4494	0.857	1.1428	1.4478	1.8731	2.4502	3.0139
0.4594	0.8722	1.1842	1.4842	1.8734	2.4831	3.068
0.5305	0.9357	1.1949	1.4885	1.8819	2.4979	3.1619
0.586	0.9464	1.2261	1.5186	1.9357	2.5204	3.2561
0.6185	1.0277	1.2879	1.5234	1.9589	2.5416	3.6511
0.7665	1.028	1.2911	1.533	1.9848	2.7888	3.7759

0.8668	2.0796	2.545	2.9985	3.289	3.7276	
0.9226	2.1027	2.5961	3.0119	3.3247	3.7418	
1.1348	2.2165	2.6094	3.0576	3.3575	3.815	
1.5792	2.2346	2.6128	3.0743	3.3838	3.8993	
1.7976	2.2485	2.6258	3.0987	3.3897	3.9902	
1.8454	2.2781	2.6519	3.1498	3.3986	4.0671	
1.8586	2.2883	2.6524	3.1785	3.4239	4.1458	
1.999	2.3398	2.6743	3.2181	3.5086	4.1791	
2.0194	2.4144	2.7008	3.2391	3.6119	4.3699	
2.0335	2.4247	2.7622	3.271	3.707	5.958	

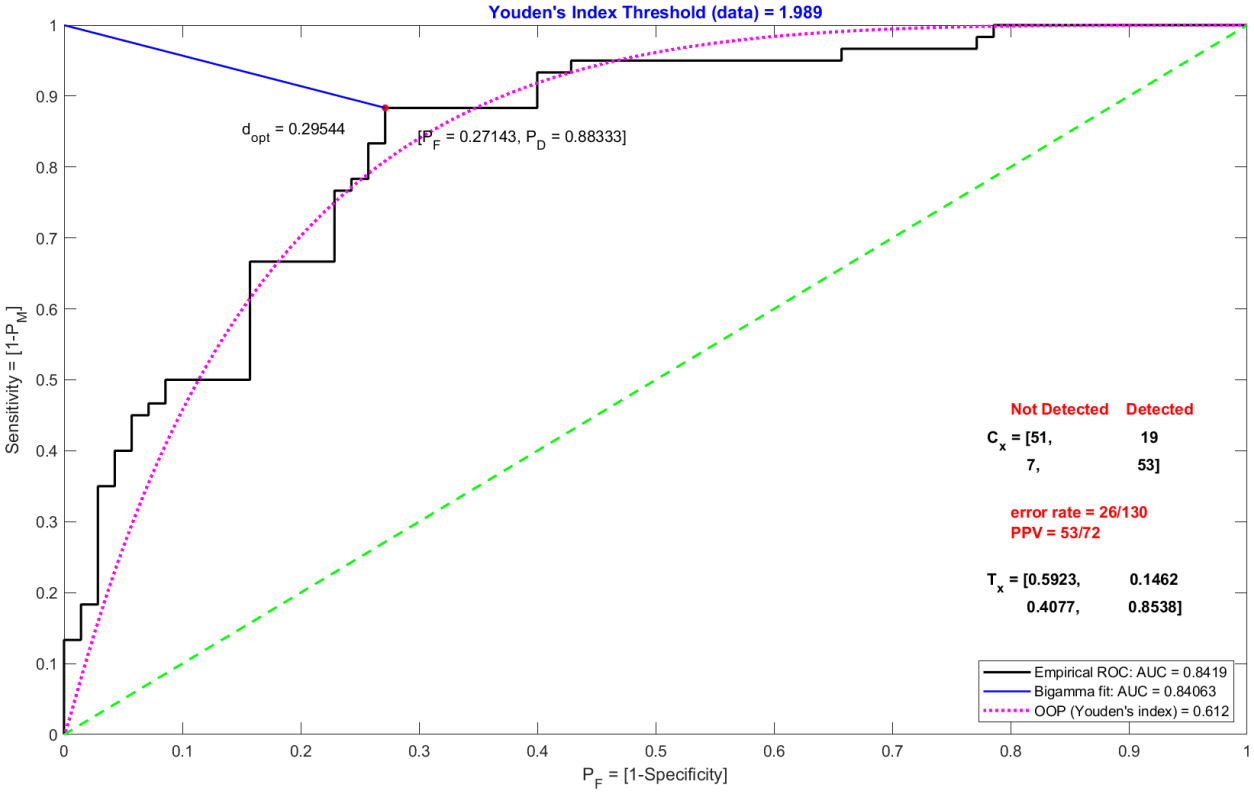
mean μ_1 = 1.621

var σ_1^2 = 0.76534

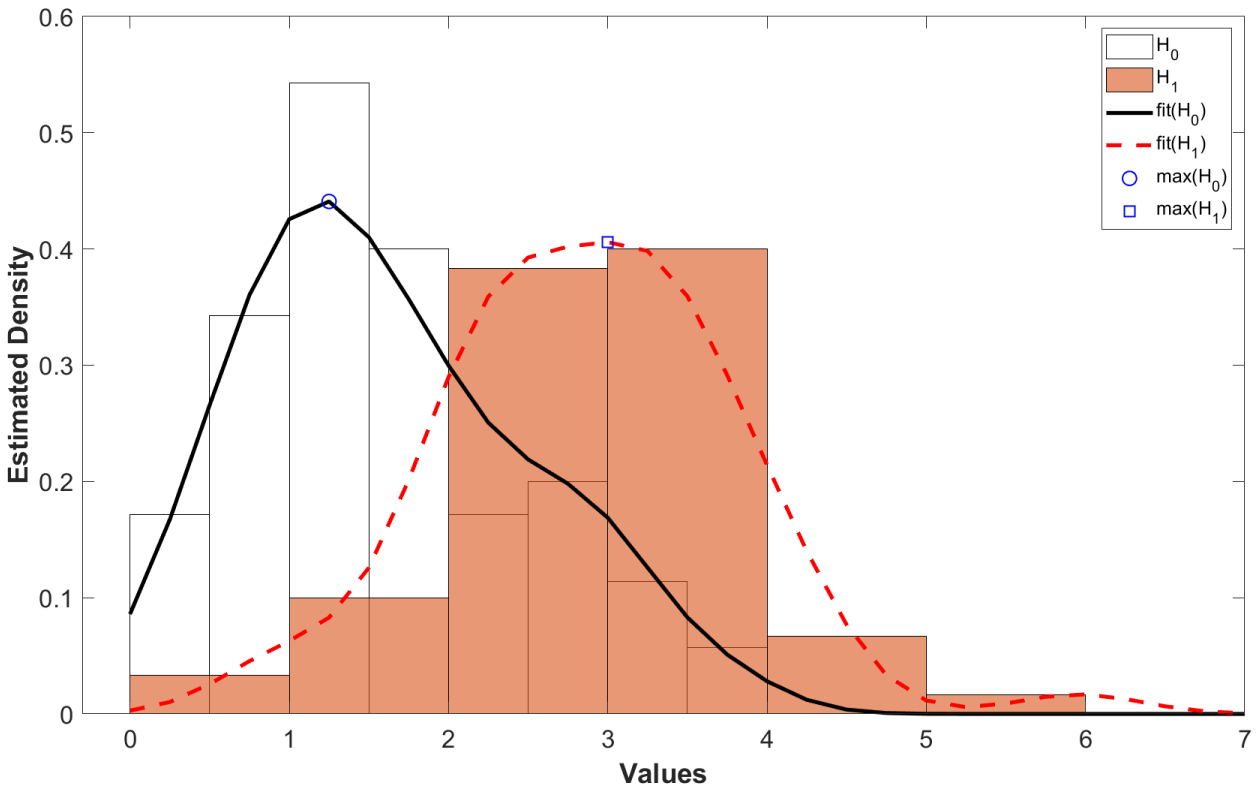
mean μ_2 = 2.8783

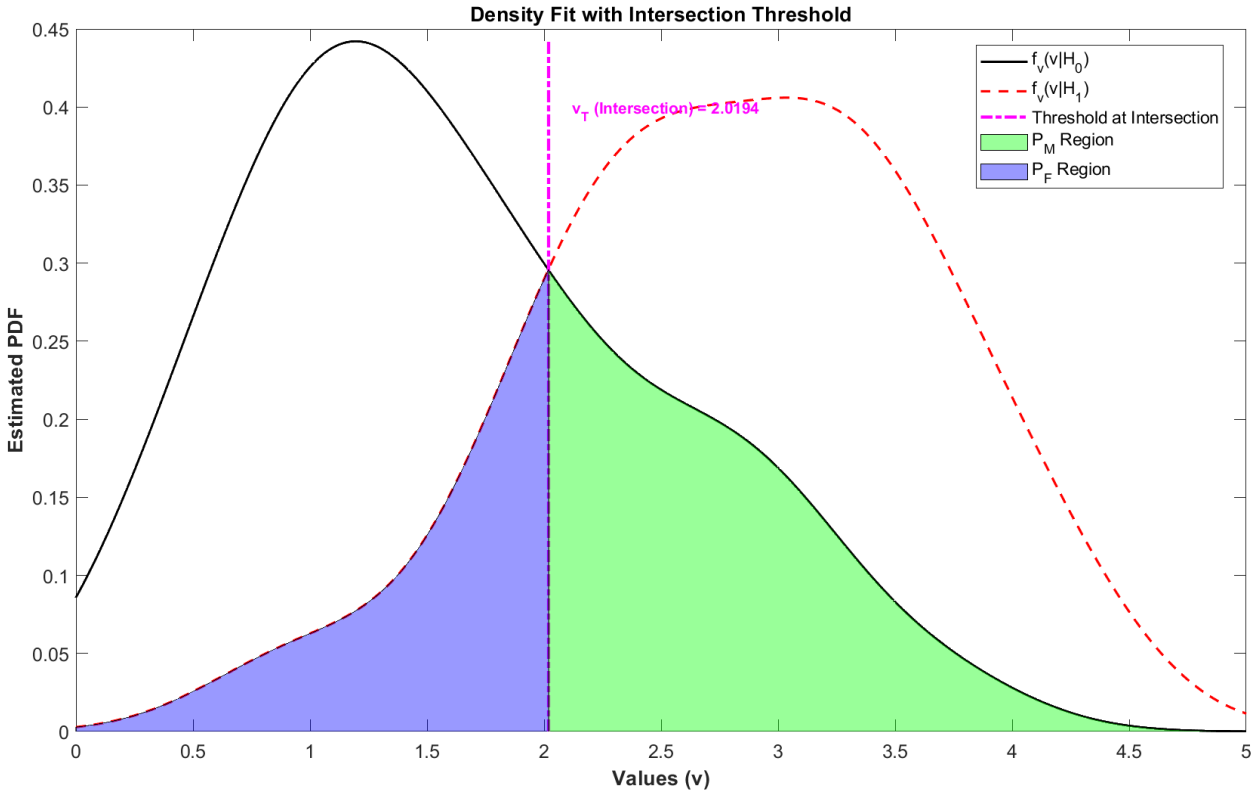
var σ_2^2 = 0.80773

Performance Index PI = 1.0025



```
intersectionPoints =

    2.0211

Threshold (vt1) = 2.0194 (intersection point)
       Cx                Tx
    _______    ____________________

    51    19    0.60769    0.14615
     9    51    0.39231    0.85385

Error rate = 0.21538, PPV = 0.72857
Threshold (vt) = 2.1027 (midpoint)
       Cx                Tx
    _______    ____________________

    52    18    0.63077    0.13846
    12    48    0.36923    0.86154

error rate = 0.23077, PPV = 0.72727

       Cx                Tx
    _______    ____________________

    51    19    0.60769    0.14615
     9    51    0.39231    0.85385

error rate = 0.21538, PPV = 0.72857
```





Based on the data, the optimal threshold values calculated from both the intersection point and Youden's index demonstrate effective separation between the "Target Absent" and "Target Present" classes, as shown by the ROC curves and the confusion matrices. The performance metrics, including error rates and PPV, indicate that both methods achieve comparable accuracy, though Youden's index provides slightly better sensitivity. Overall, the calculated performance index of approximately 1.0025 reflects a balanced and reliable classification outcome.