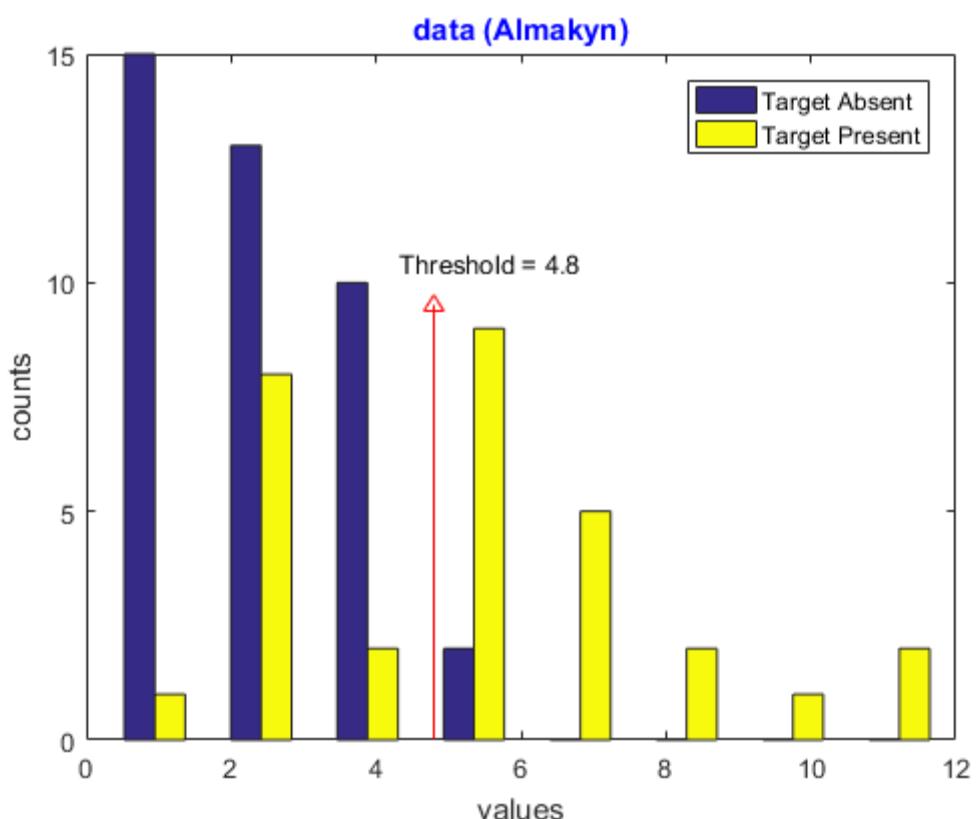


data (Almakyn)

Target Absent					Target Present				
1.142	3.855	0.613	2.336	1.938	4.767	7.211	2.315	5.048	6.4
1.976	2.238	2.881	2.45	1.169	2.308	5.319	8.258	6.433	2.973
3.816	3.828	1.936	0.212	0.925	1.961	4.175	5.097	9.436	3.449
1.143	3.506	2.597	0.303	2.363	5.161	1.709	4.736	6.258	5.107
3.049	1.277	4.642	1.117	0.792	1.779	3.05	5.956	6.722	11.956
0.884	6.018	3.194	1.505	3.391	1.507	7.834	11.942	5.209	2.455
4.548	3.272	1.875	1.439	0.939					
2.711	3.49	0.832	3.259	1.838					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.8

Target Absent					Target Present				
<b>6.018</b>	3.391	2.45	1.838	0.939	<b>11.956</b>	<b>6.722</b>	<b>5.209</b>	4.736	2.315
4.642	3.272	2.363	1.505	0.925	<b>11.942</b>	<b>6.433</b>	<b>5.161</b>	4.175	2.308
4.548	3.259	2.336	1.439	0.884	<b>9.436</b>	<b>6.4</b>	<b>5.107</b>	3.449	1.961
3.855	3.194	2.238	1.277	0.832	<b>8.258</b>	<b>6.258</b>	<b>5.097</b>	3.05	1.779
3.828	3.049	1.976	1.169	0.792	<b>7.834</b>	<b>5.956</b>	<b>5.048</b>	2.973	1.709
3.816	2.881	1.938	1.143	0.613	<b>7.211</b>	<b>5.319</b>	4.767	2.455	1.507
3.506	2.711	1.936	1.142	0.303					
3.49	2.597	1.875	1.117	0.212					

Number of samples above threshold = 1

Number of samples above threshold = 17

False Alarm rate : 1 in 40

Miss rate : 13 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.8

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.8**

Probability of correct TARGET detection (sensitivity) = 0.56667

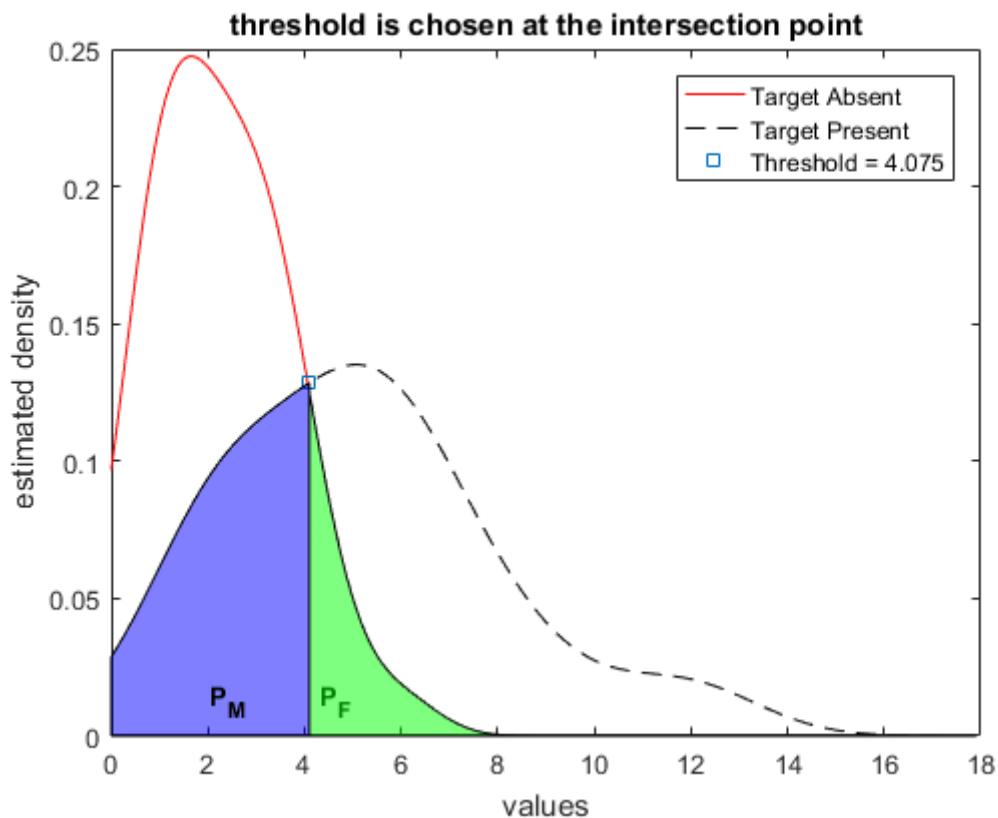
**Probability of Miss = 1 - sensitivity = 0.43333**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.94444**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 4.075**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>6.018</b>	3.391	2.45	1.838	0.939	<b>11.956</b>	<b>6.722</b>	<b>5.209</b>	<b>4.736</b>	2.315
<b>4.642</b>	3.272	2.363	1.505	0.925	<b>11.942</b>	<b>6.433</b>	<b>5.161</b>	<b>4.175</b>	2.308
<b>4.548</b>	3.259	2.336	1.439	0.884	<b>9.436</b>	<b>6.4</b>	<b>5.107</b>	3.449	1.961
3.855	3.194	2.238	1.277	0.832	<b>8.258</b>	<b>6.258</b>	<b>5.097</b>	3.05	1.779
3.828	3.049	1.976	1.169	0.792	<b>7.834</b>	<b>5.956</b>	<b>5.048</b>	2.973	1.709
3.816	2.881	1.938	1.143	0.613	<b>7.211</b>	<b>5.319</b>	<b>4.767</b>	2.455	1.507
3.506	2.711	1.936	1.142	0.303					
3.49	2.597	1.875	1.117	0.212					

Number of samples above threshold = 3

Number of samples above threshold = 20

False Alarm rate : 3 in 40

Miss rate : 10 in 30

(c) P. M. Shankar

## Summary of the analysis

### Almakyn

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.075**

Probability of correct TARGET detection (sensitivity) = 0.66667

**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.86957**

Overall Accuracy = 0.81429

### Confusion Matrix (Threshold Value = 4.075)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	20	10	30
Total Counts	23	47	70

$$P_F = \frac{3}{40} \quad P_M = \frac{1}{3} \quad \text{PPV} = \frac{20}{23} \quad \text{err} = \frac{13}{70} \quad \text{acc} = \frac{57}{70}$$

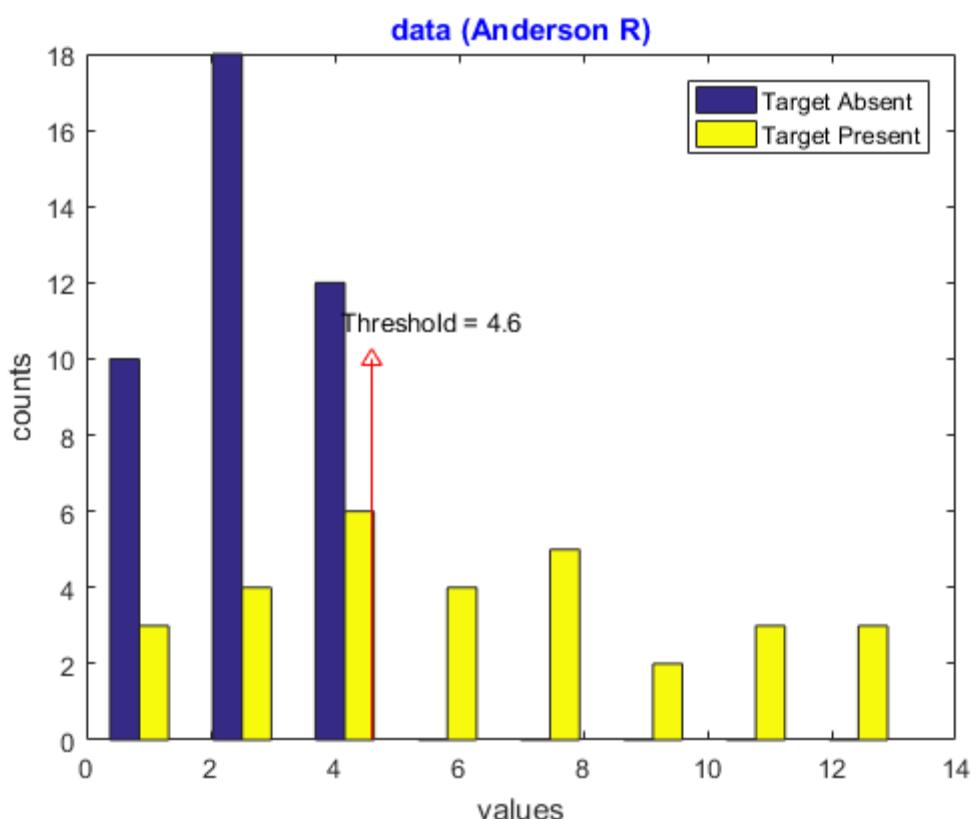
## Summary of the analysis

### Almakyn

data (Anderson R)

Target Absent					Target Present				
2.283	3.555	1.052	1.701	0.59	9.401	7.126	10.388	5.936	1.525
3.843	1.335	3.164	3.392	1.486	2.973	6.753	3.615	8.065	11.687
3.676	3.977	1.334	1.593	3.889	3.917	1.431	6.332	13.258	8.872
2.548	2.161	2.331	1.814	4.009	3.88	4.268	5.4	13.214	2.489
0.685	3.699	2.952	2.753	1.86	2.88	10.194	4.717	7.732	3.331
2.194	2.195	2.019	1.961	3.272	0.979	10.766	4.121	8.02	5.659
3.526	3.019	3.679	3.901	4.623					
2.681	0.027	1.552	0.796	2.648					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.6

	Target Absent					Target Present				
<b>4.623</b>	3.676	2.753	2.161	1.486		<b>13.258</b>	<b>9.401</b>	<b>6.753</b>	4.268	2.973
4.009	3.555	2.681	2.019	1.335		<b>13.214</b>	<b>8.872</b>	<b>6.332</b>	4.121	2.88
3.977	3.526	2.648	1.961	1.334		<b>11.687</b>	<b>8.065</b>	<b>5.936</b>	3.917	2.489
3.901	3.392	2.548	1.86	1.052		<b>10.766</b>	<b>8.02</b>	<b>5.659</b>	3.88	1.525
3.889	3.272	2.331	1.814	0.796		<b>10.388</b>	<b>7.732</b>	<b>5.4</b>	3.615	1.431
3.843	3.164	2.283	1.701	0.685		<b>10.194</b>	<b>7.126</b>	<b>4.717</b>	3.331	0.979
3.699	3.019	2.195	1.593	0.59						
3.679	2.952	2.194	1.552	0.027						

**Number of samples above threshold = 1**

**Number of samples above threshold = 18**

False Alarm rate : 1 in 40

Miss rate : 12 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 4.6

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.6**

Probability of correct TARGET detection (sensitivity) = 0.6

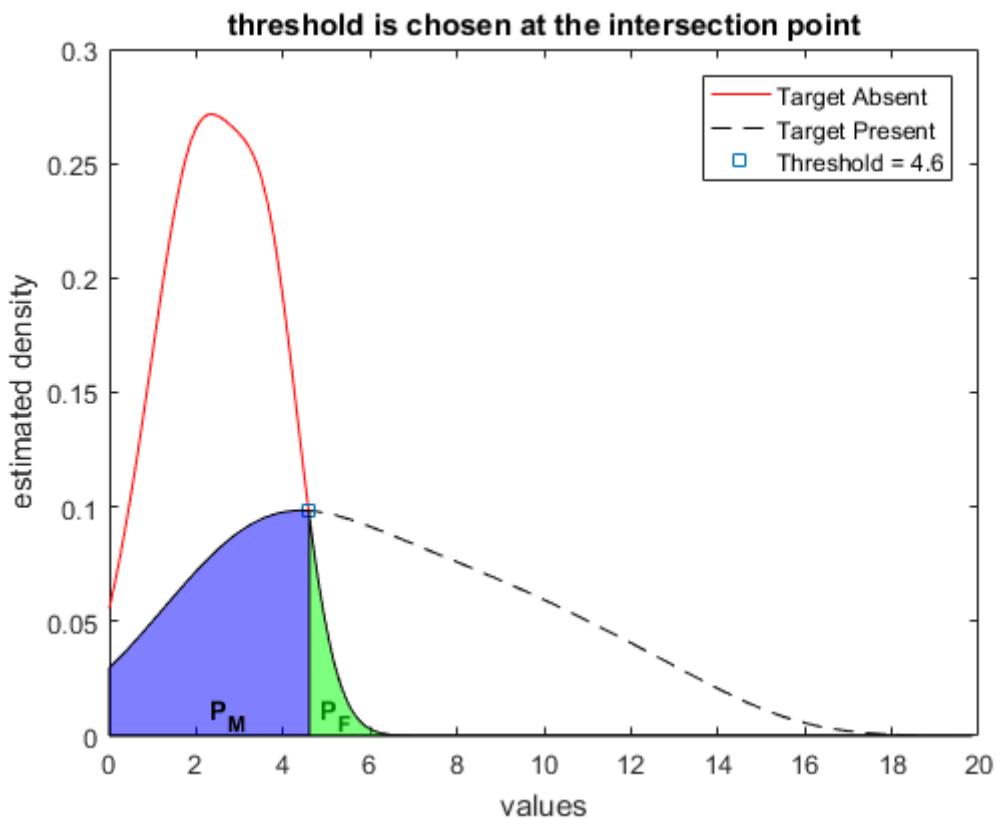
**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.94737**

Overall Accuracy = 0.81429



**Sorted and Partitioned Data : Threshold at 4.6**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>4.623</b>	3.676	2.753	2.161	1.486	<b>13.258</b>	<b>9.401</b>	<b>6.753</b>	4.268	2.973
4.009	3.555	2.681	2.019	1.335	<b>13.214</b>	<b>8.872</b>	<b>6.332</b>	4.121	2.88
3.977	3.526	2.648	1.961	1.334	<b>11.687</b>	<b>8.065</b>	<b>5.936</b>	3.917	2.489
3.901	3.392	2.548	1.86	1.052	<b>10.766</b>	<b>8.02</b>	<b>5.659</b>	3.88	1.525
3.889	3.272	2.331	1.814	0.796	<b>10.388</b>	<b>7.732</b>	<b>5.4</b>	3.615	1.431
3.843	3.164	2.283	1.701	0.685	<b>10.194</b>	<b>7.126</b>	<b>4.717</b>	3.331	0.979
3.699	3.019	2.195	1.593	0.59					
3.679	2.952	2.194	1.552	0.027					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 18**

Miss rate : 12 in 30

(c) P. M. Shankar

## Summary of the analysis Anderson R

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.6**

Probability of correct TARGET detection (sensitivity) = 0.6

**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.94737**

Overall Accuracy = 0.81429

### Confusion Matrix (Threshold Value = 4.6)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	18	12	30
Total Counts	19	51	70

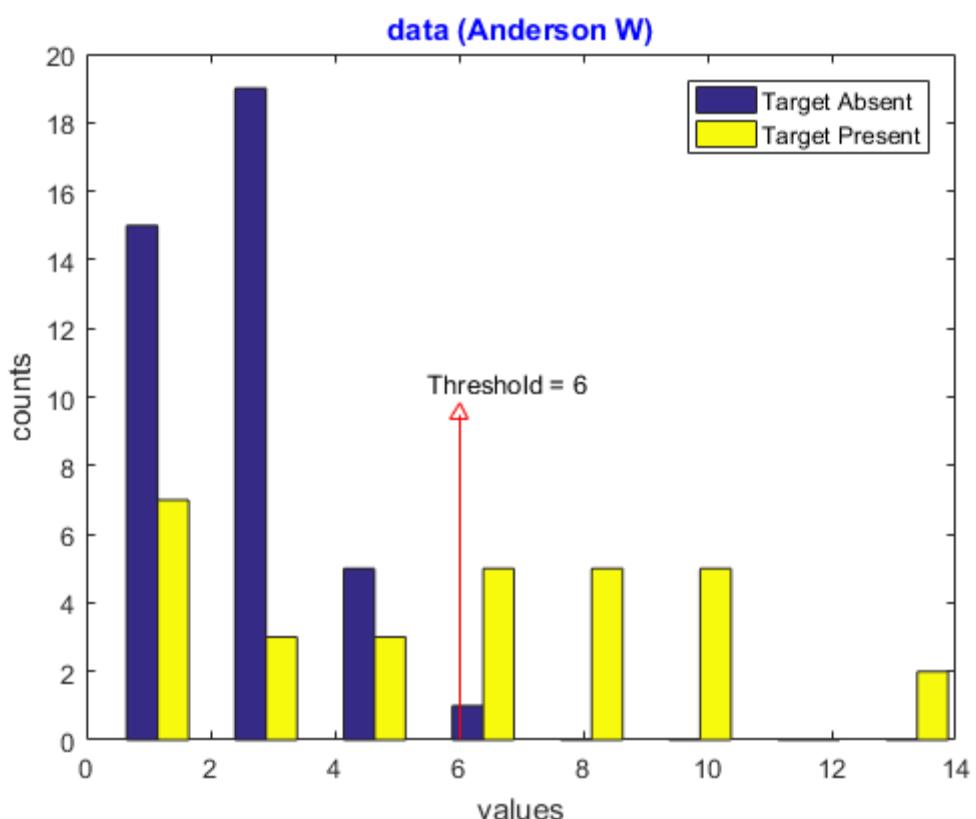
$$P_F = \frac{1}{40} \quad P_M = \frac{2}{5} \quad \text{PPV} = \frac{18}{19} \quad \text{err} = \frac{13}{70} \quad \text{acc} = \frac{57}{70}$$

## Summary of the analysis Anderson R

data (Anderson W)

Target Absent					Target Present				
2.51	2.347	2.284	3.508	3.623	8.215	9.148	6.003	0.928	4.321
1.42	2.332	5.788	3.713	2.435	6.311	9.331	1.709	1.191	6.372
3.049	0.857	1.549	3.687	1.662	9.792	8.185	5.143	8.769	4.99
4.89	1.638	2.532	1.914	5.377	3.255	1.82	5.641	6.106	14.251
1.282	1.907	1.429	0.954	1.64	1.66	10.606	0.275	1.432	13.37
3.525	2.737	2.633	1.632	1.728	8.856	7.951	2.654	9.485	3.677
2.087	4.975	0.966	3.64	4.349					
2.445	3.511	1.656	3.898	3.713					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 6

Target Absent					Target Present				
5.788	3.687	2.633	2.087	1.632	14.251	9.148	6.372	4.99	1.709
5.377	3.64	2.532	1.914	1.549	13.37	8.856	6.311	4.321	1.66
4.975	3.623	2.51	1.907	1.429	10.606	8.769	6.106	3.677	1.432
4.89	3.525	2.445	1.728	1.42	9.792	8.215	6.003	3.255	1.191
4.349	3.511	2.435	1.662	1.282	9.485	8.185	5.641	2.654	0.928
3.898	3.508	2.347	1.656	0.966	9.331	7.951	5.143	1.82	0.275
3.713	3.049	2.332	1.64	0.954					
3.713	2.737	2.284	1.638	0.857					

Number of samples above threshold = 0

Number of samples above threshold = 16

False Alarm rate : 0 in 40

Miss rate : 14 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 6

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6**

Probability of correct TARGET detection (sensitivity) = 0.53333

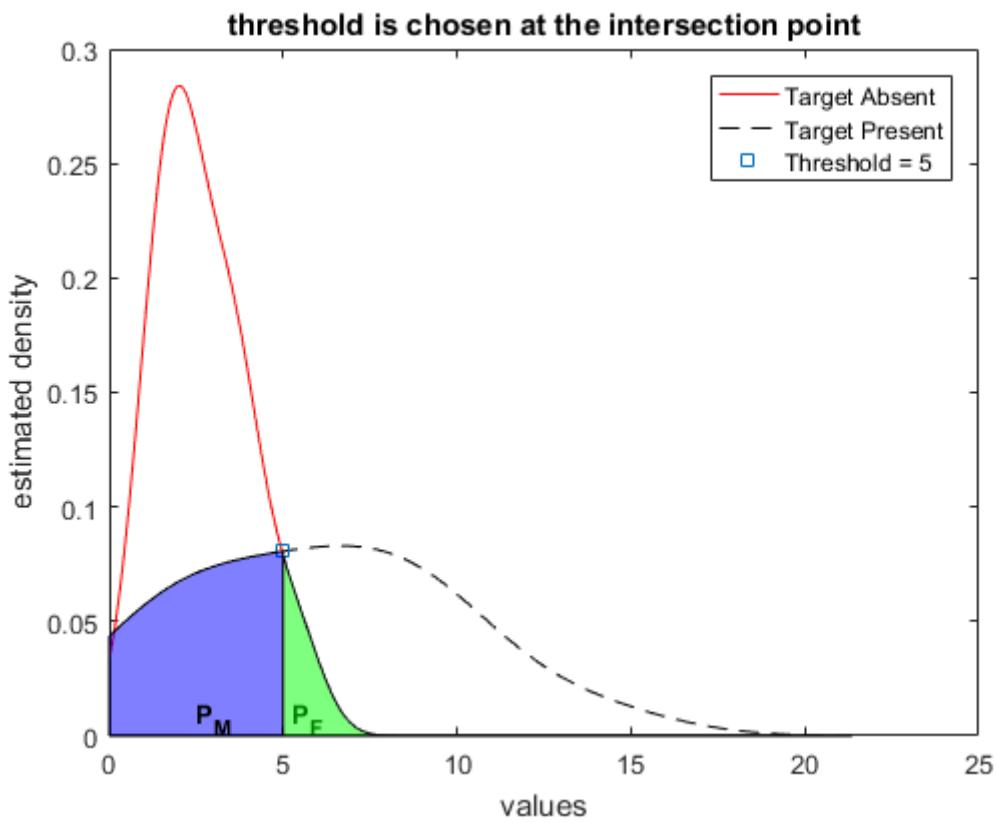
**Probability of Miss = 1 - sensitivity = 0.46667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 5**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.788	3.687	2.633	2.087	1.632	14.251	9.148	6.372	4.99	1.709
5.377	3.64	2.532	1.914	1.549	13.37	8.856	6.311	4.321	1.66
4.975	3.623	2.51	1.907	1.429	10.606	8.769	6.106	3.677	1.432
4.89	3.525	2.445	1.728	1.42	9.792	8.215	6.003	3.255	1.191
4.349	3.511	2.435	1.662	1.282	9.485	8.185	5.641	2.654	0.928
3.898	3.508	2.347	1.656	0.966	9.331	7.951	5.143	1.82	0.275
3.713	3.049	2.332	1.64	0.954					
3.713	2.737	2.284	1.638	0.857					

Number of samples above threshold = 2

Number of samples above threshold = 18

False Alarm rate : 2 in 40

Miss rate : 12 in 30

(c) P. M. Shankar

## Summary of the analysis

Anderson W

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5**

Probability of correct TARGET detection (sensitivity) = 0.6

**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.9**

Overall Accuracy = 0.8

**Confusion Matrix (Threshold Value = 5)**

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	18	12	30
Total Counts	20	50	70

$$P_F = \frac{1}{20} \quad P_M = \frac{2}{5} \quad \text{PPV} = \frac{9}{10} \quad \text{err} = \frac{1}{5} \quad \text{acc} = \frac{4}{5}$$

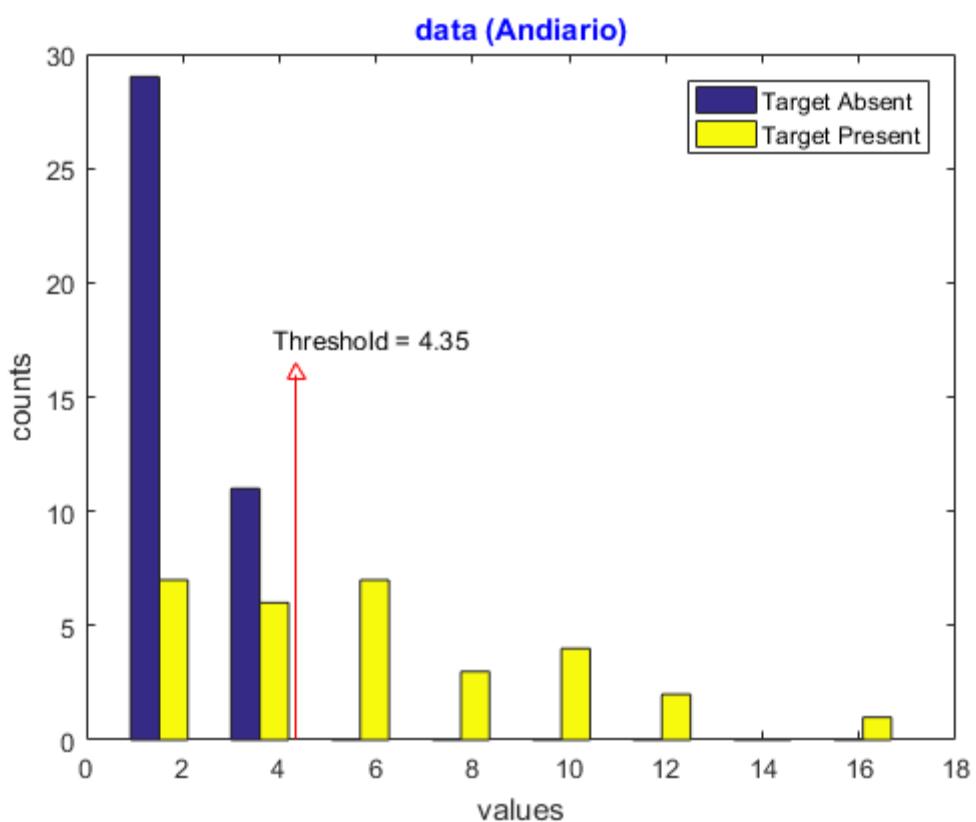
## Summary of the analysis

Anderson W

data (Andiario)

Target Absent					Target Present				
1.719	1.162	3.435	2.323	2.111	3.383	11.306	10.273	2.174	5.984
3.321	1.181	1.324	3.798	3.355	9.547	7.431	1.902	3.624	1.126
2.075	0.91	4.424	1.476	1.269	6.783	2.572	3.877	4.843	17.115
1.132	0.984	2.358	2.431	1.161	5.49	8.124	5.071	4.793	6.705
2.678	1.772	3.986	0.806	1.242	1.947	5.09	9.408	4.387	2.24
1.291	1.472	1.594	1.736	0.869	3.912	1.575	2.303	10.644	12.114
1.54	0.473	0.628	3.133	3.947					
0.796	0.671	2.783	0.488	2.632					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.35

	Target Absent					Target Present				
<b>4.424</b>	2.783	1.772	1.291	0.91		<b>17.115</b>	<b>9.408</b>	<b>5.49</b>	3.912	2.24
3.986	2.678	1.736	1.269	0.869		<b>12.114</b>	<b>8.124</b>	<b>5.09</b>	3.877	2.174
3.947	2.632	1.719	1.242	0.806		<b>11.306</b>	<b>7.431</b>	<b>5.071</b>	3.624	1.947
3.798	2.431	1.594	1.181	0.796		<b>10.644</b>	<b>6.783</b>	<b>4.843</b>	3.383	1.902
3.435	2.358	1.54	1.162	0.671		<b>10.273</b>	<b>6.705</b>	<b>4.793</b>	2.572	1.575
3.355	2.323	1.476	1.161	0.628		<b>9.547</b>	<b>5.984</b>	<b>4.387</b>	2.303	1.126
3.321	2.111	1.472	1.132	0.488						
3.133	2.075	1.324	0.984	0.473						

**Number of samples above threshold = 1**

**Number of samples above threshold = 18**

False Alarm rate : 1 in 40

Miss rate : 12 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 4.35

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.35**

Probability of correct TARGET detection (sensitivity) = 0.6

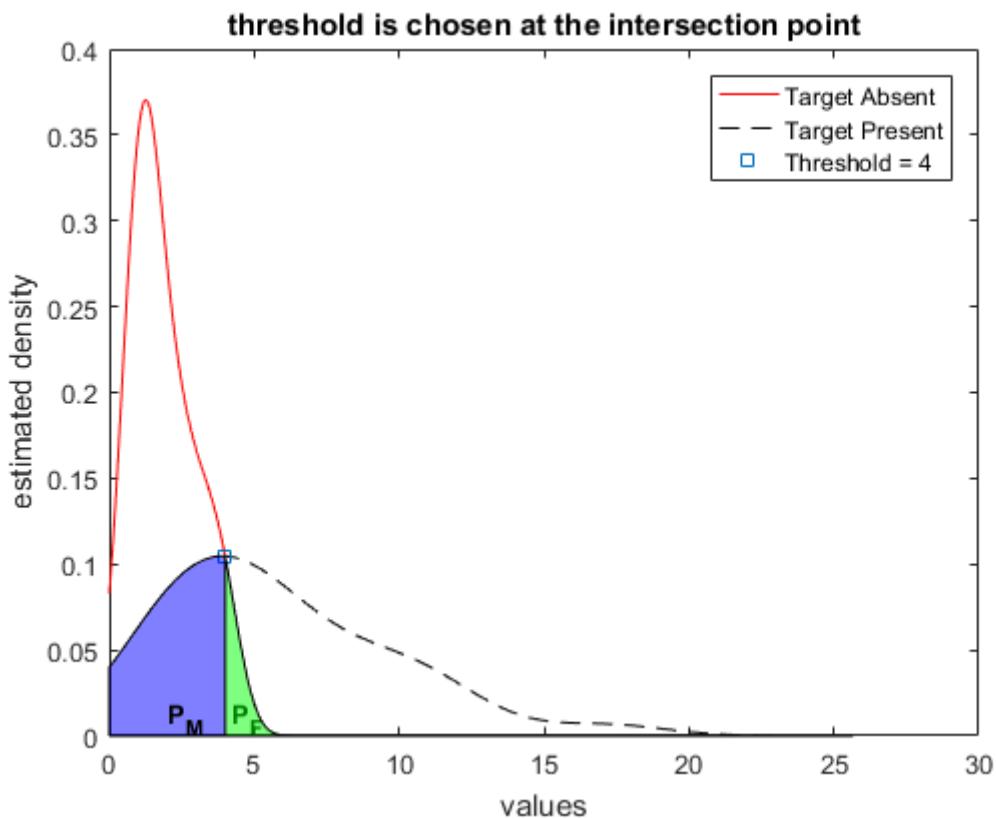
**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.94737**

Overall Accuracy = 0.81429



**Sorted and Partitioned Data : Threshold at 4**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>4.424</b>	2.783	1.772	1.291	0.91	<b>17.115</b>	<b>9.408</b>	<b>5.49</b>	3.912	2.24
3.986	2.678	1.736	1.269	0.869	<b>12.114</b>	<b>8.124</b>	<b>5.09</b>	3.877	2.174
3.947	2.632	1.719	1.242	0.806	<b>11.306</b>	<b>7.431</b>	<b>5.071</b>	3.624	1.947
3.798	2.431	1.594	1.181	0.796	<b>10.644</b>	<b>6.783</b>	<b>4.843</b>	3.383	1.902
3.435	2.358	1.54	1.162	0.671	<b>10.273</b>	<b>6.705</b>	<b>4.793</b>	2.572	1.575
3.355	2.323	1.476	1.161	0.628	<b>9.547</b>	<b>5.984</b>	<b>4.387</b>	2.303	1.126
3.321	2.111	1.472	1.132	0.488					
3.133	2.075	1.324	0.984	0.473					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 18**

Miss rate : 12 in 30

(c) P. M. Shankar

## Summary of the analysis Andiario

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4**

Probability of correct TARGET detection (sensitivity) = 0.6

**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.94737**

Overall Accuracy = 0.81429

### Confusion Matrix (Threshold Value = 4)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	18	12	30
Total Counts	19	51	70

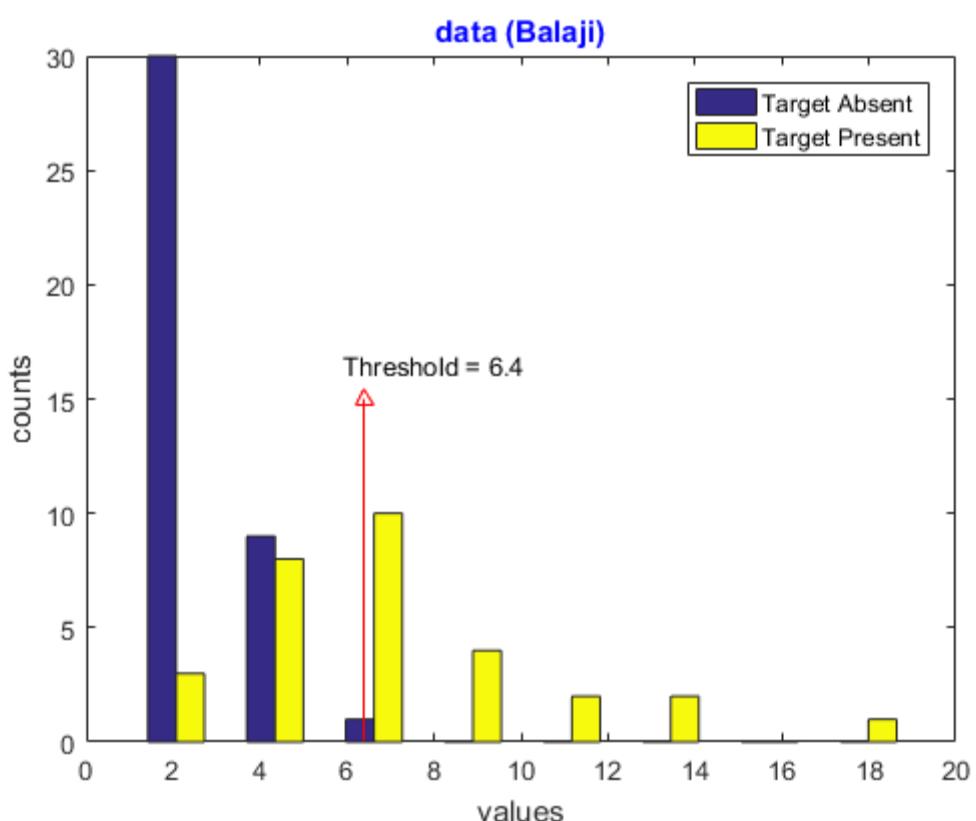
$$P_F = \frac{1}{40} \quad P_M = \frac{2}{5} \quad \text{PPV} = \frac{18}{19} \quad \text{err} = \frac{13}{70} \quad \text{acc} = \frac{57}{70}$$

## Summary of the analysis Andiario

data (Balaji)

Target Absent					Target Present				
2.072	2.737	2.424	2.592	1.651	4.532	9.111	6.79	7.069	2.612
1.332	2.248	1.326	2.703	3.119	3.293	7.354	3.265	7.735	5.366
1.202	2.342	1.33	2.045	4.958	6.052	2.905	11.414	9.623	6.84
2.489	1.944	3.482	5.218	2.418	3.438	6.014	13.792	19.129	8.664
2.228	1.774	3.503	1.384	3.912	10.355	6.835	4.934	5.191	12.418
1.063	3.235	1.678	1.401	3.159	7.573	7.217	3.213	8.487	1.767
2.426	4.916	3.347	2.601	1.679					
1.049	6.069	3.968	0.932	3.011					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 6.4

Target Absent					Target Present			
6.069	3.347	2.592	2.072	1.384	19.129	9.111	7.217	6.014
5.218	3.235	2.489	2.045	1.332	13.792	8.664	7.069	5.366
4.958	3.159	2.426	1.944	1.33	12.418	8.487	6.84	5.191
4.916	3.119	2.424	1.774	1.326	11.414	7.735	6.835	4.934
3.968	3.011	2.418	1.679	1.202	10.355	7.573	6.79	4.532
3.912	2.737	2.342	1.678	1.063	9.623	7.354	6.052	3.438
3.503	2.703	2.248	1.651	1.049				
3.482	2.601	2.228	1.401	0.932				

Number of samples above threshold = 0

Number of samples above threshold = 17

False Alarm rate : 0 in 40

Miss rate : 13 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 6.4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6.4**

Probability of correct TARGET detection (sensitivity) = 0.56667

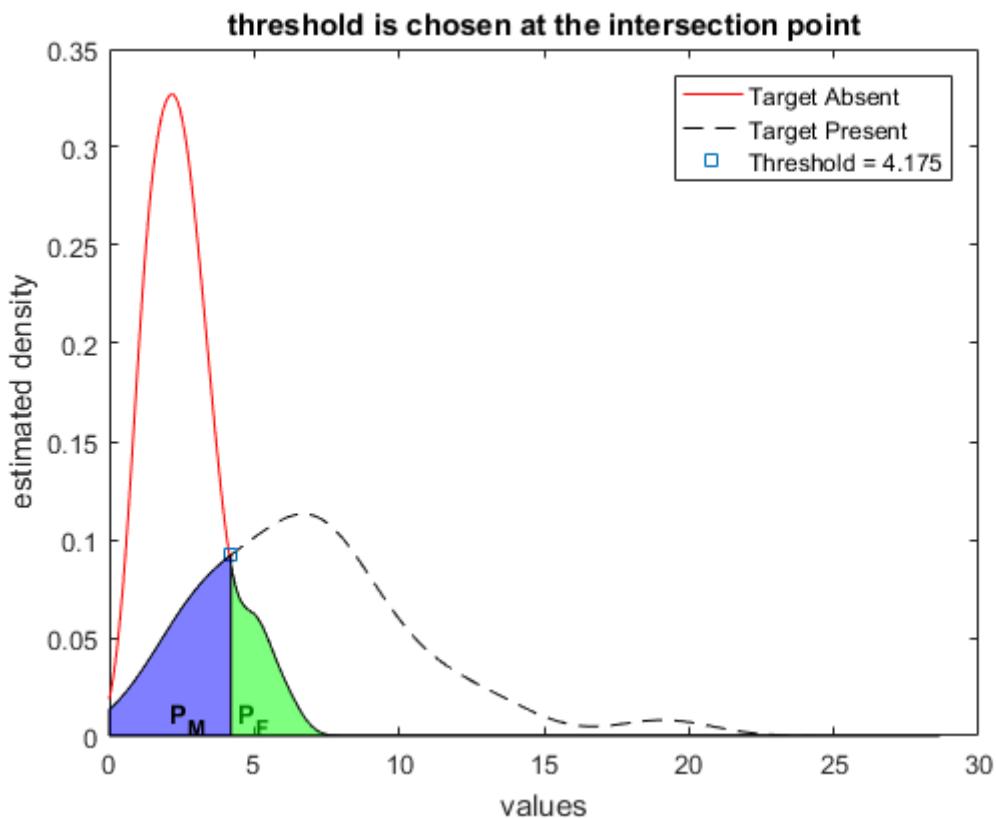
**Probability of Miss = 1 - sensitivity = 0.43333**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.81429



**Sorted and Partitioned Data : Threshold at 4.175**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>6.069</b>	3.347	2.592	2.072	1.384	<b>19.129</b>	<b>9.111</b>	<b>7.217</b>	<b>6.014</b>	3.293
<b>5.218</b>	3.235	2.489	2.045	1.332	<b>13.792</b>	<b>8.664</b>	<b>7.069</b>	<b>5.366</b>	3.265
<b>4.958</b>	3.159	2.426	1.944	1.33	<b>12.418</b>	<b>8.487</b>	<b>6.84</b>	<b>5.191</b>	3.213
<b>4.916</b>	3.119	2.424	1.774	1.326	<b>11.414</b>	<b>7.735</b>	<b>6.835</b>	<b>4.934</b>	2.905
3.968	3.011	2.418	1.679	1.202	<b>10.355</b>	<b>7.573</b>	<b>6.79</b>	<b>4.532</b>	2.612
3.912	2.737	2.342	1.678	1.063	<b>9.623</b>	<b>7.354</b>	<b>6.052</b>	3.438	1.767
3.503	2.703	2.248	1.651	1.049					
3.482	2.601	2.228	1.401	0.932					

**Number of samples above threshold = 4**

False Alarm rate : 4 in 40

**Number of samples above threshold = 23**

Miss rate : 7 in 30

(c) P. M. Shankar

## Summary of the analysis Balaji

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.175**

Probability of correct TARGET detection (sensitivity) = 0.76667

**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.85185**

Overall Accuracy = 0.84286

### Confusion Matrix (Threshold Value = 4.175)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	23	7	30
Total Counts	27	43	70

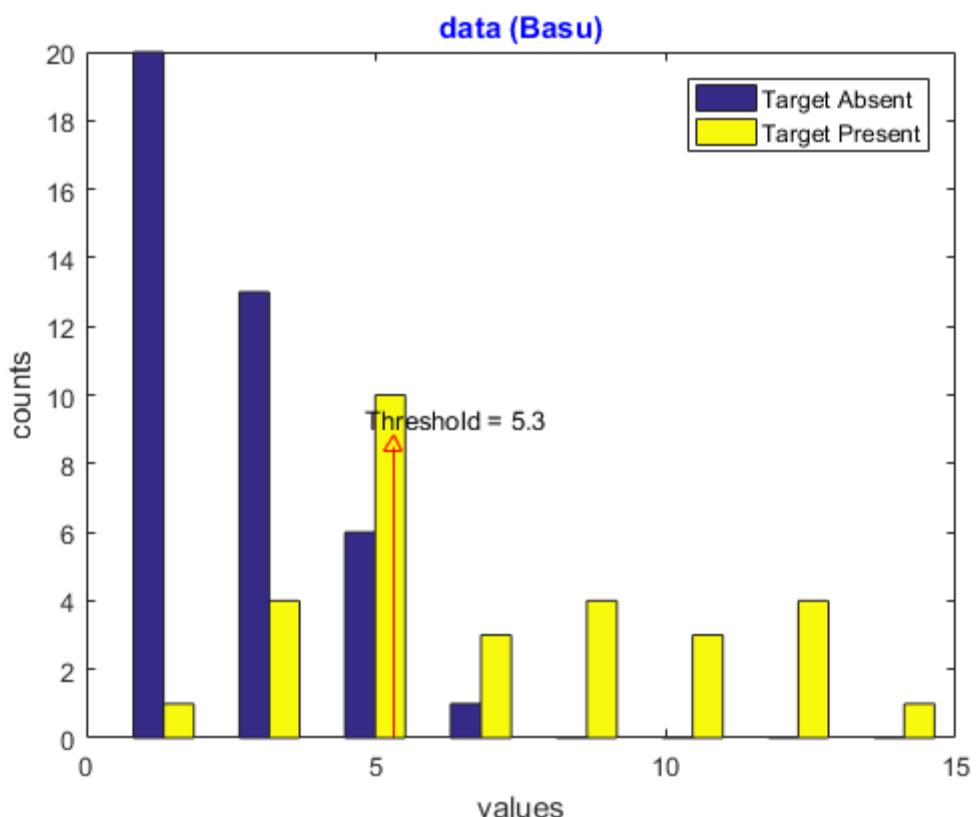
$$P_F = \frac{1}{10} \quad P_M = \frac{7}{30} \quad PPV = \frac{23}{27} \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

## Summary of the analysis Balaji

data (Basu)

Target Absent					Target Present				
2.835	2.594	2.209	1.808	2.413	12.193	4.676	5.509	2.609	12.651
2.815	1.135	7.178	1.099	3.097	9.876	4.038	15.022	13.122	2.088
2.169	2.052	2.131	1.295	1.461	8.835	4.099	8.483	5.743	5.451
4.259	2.655	2.648	1.652	1.619	4.833	11.098	7.374	10.514	5.016
4.747	1.579	2.976	4.225	3.225	11.774	5.966	2.381	8.536	4.677
1.619	0.963	4.445	5.045	2.422	5.676	3.688	4.403	8.243	6.572
1.174	1.031	0.422	0.57	4.819					
3.073	1.418	2.752	3.562	1.46					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.3

Target Absent					Target Present				
<b>7.178</b>	3.225	2.648	1.808	1.295	<b>15.022</b>	<b>10.514</b>	<b>7.374</b>	<b>5.451</b>	4.099
5.045	3.097	2.594	1.652	1.174	<b>13.122</b>	<b>9.876</b>	<b>6.572</b>	5.016	4.038
4.819	3.073	2.422	1.619	1.135	<b>12.651</b>	<b>8.835</b>	<b>5.966</b>	4.833	3.688
4.747	2.976	2.413	1.619	1.099	<b>12.193</b>	<b>8.536</b>	<b>5.743</b>	4.677	2.609
4.445	2.835	2.209	1.579	1.031	<b>11.774</b>	<b>8.483</b>	<b>5.676</b>	4.676	2.381
4.259	2.815	2.169	1.461	0.963	<b>11.098</b>	<b>8.243</b>	<b>5.509</b>	4.403	2.088
4.225	2.752	2.131	1.46	0.57					
3.562	2.655	2.052	1.418	0.422					

Number of samples above threshold = 1

Number of samples above threshold = 19

False Alarm rate : 1 in 40

Miss rate : 11 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.3

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.3**

Probability of correct TARGET detection (sensitivity) = 0.63333

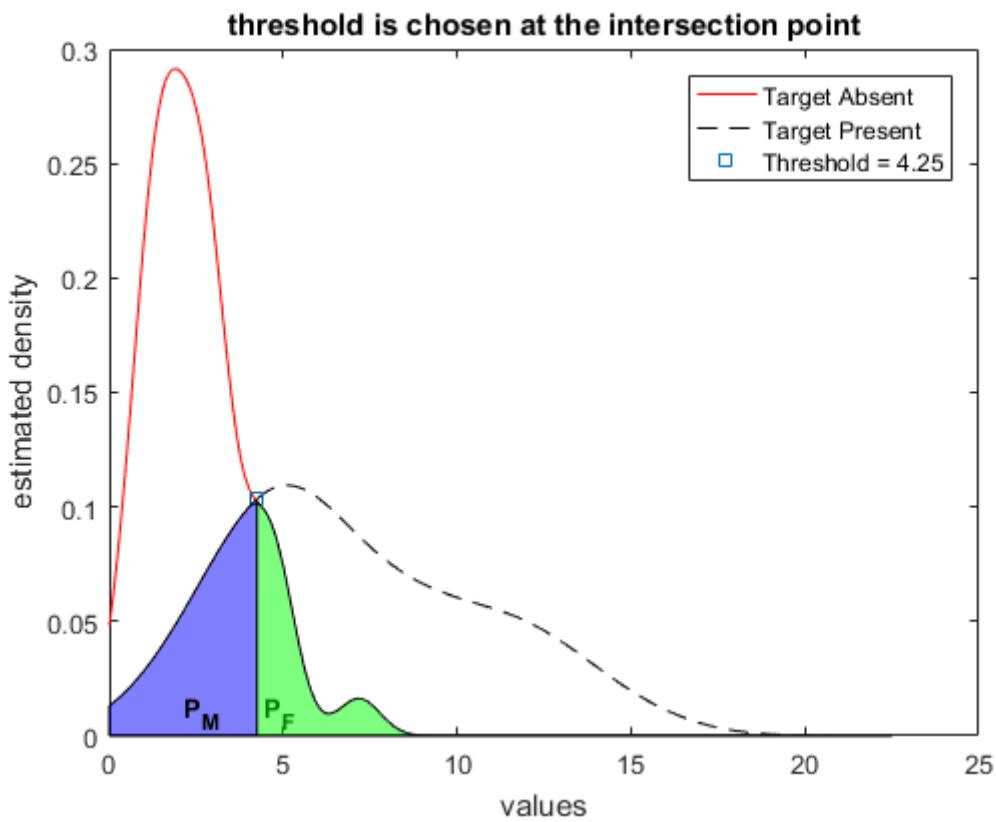
**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 4.25**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
7.178	3.225	2.648	1.808	1.295	15.022	10.514	7.374	5.451	4.099
5.045	3.097	2.594	1.652	1.174	13.122	9.876	6.572	5.016	4.038
4.819	3.073	2.422	1.619	1.135	12.651	8.835	5.966	4.833	3.688
4.747	2.976	2.413	1.619	1.099	12.193	8.536	5.743	4.677	2.609
4.445	2.835	2.209	1.579	1.031	11.774	8.483	5.676	4.676	2.381
4.259	2.815	2.169	1.461	0.963	11.098	8.243	5.509	4.403	2.088
4.225	2.752	2.131	1.46	0.57					
3.562	2.655	2.052	1.418	0.422					

**Number of samples above threshold = 6**

False Alarm rate : 6 in 40

**Number of samples above threshold = 24**

Miss rate : 6 in 30

(c) P. M. Shankar

## Summary of the analysis Basu

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.25**

Probability of correct TARGET detection (sensitivity) = 0.8

**Probability of Miss = 1 - sensitivity = 0.2**

Probability of correct NO TARGET detection (specificity) = 0.85

**Probability of False Alarm = 1 - specificity = 0.15**

**Positive Predictive Value (PPV) = a posteriori probability = 0.8**

Overall Accuracy = 0.82857

### Confusion Matrix (Threshold Value = 4.25)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	6	34	40
Target Present	24	6	30
Total Counts	30	40	70

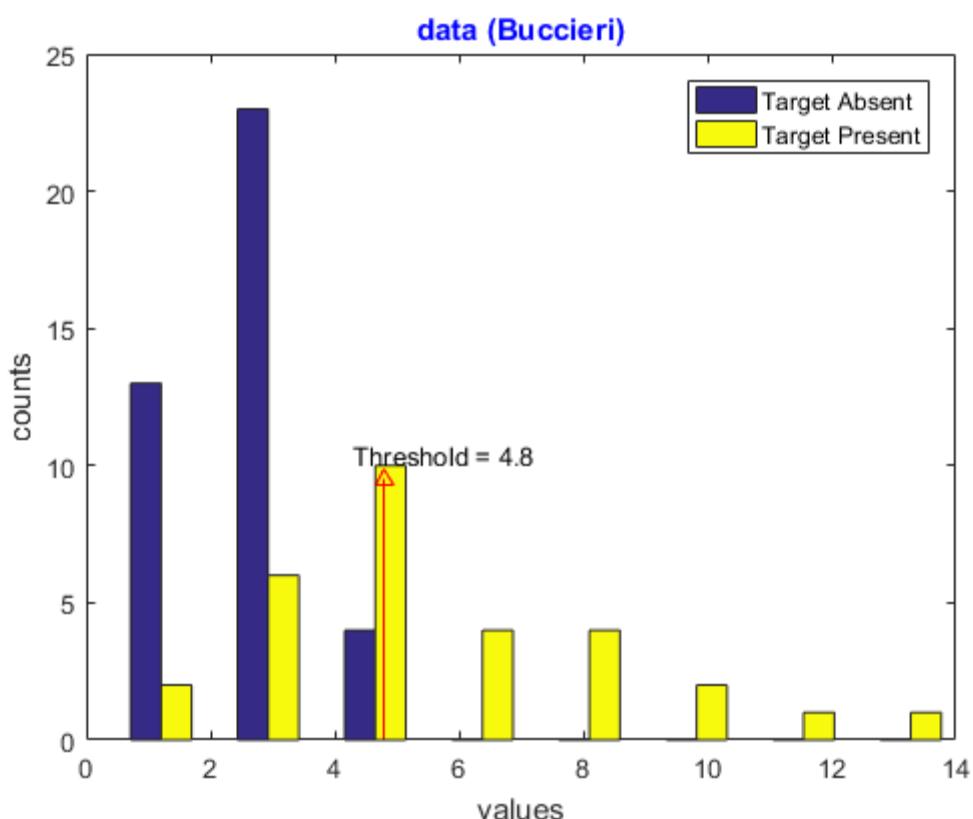
$$P_F = \frac{3}{20} \quad P_M = \frac{1}{5} \quad \text{PPV} = \frac{4}{5} \quad \text{err} = \frac{6}{35} \quad \text{acc} = \frac{29}{35}$$

## Summary of the analysis Basu

data (Buccieri)

Target Absent					Target Present				
2.404	2.989	0.517	3.72	0.343	4.599	4.208	7.294	7.275	4.817
1.956	1.99	1.259	3.18	2.495	2.374	2.852	6.07	9.514	6.264
3.503	2.526	2.195	4.365	1.05	3.364	5.645	4.011	3.683	6.068
2.969	1.814	2.759	2.245	2.291	0.359	0.609	3.047	5.496	4.52
1.726	4.934	3.445	2.398	3.312	14.136	4.968	8.519	10.889	4.804
2.491	3.391	0.417	4.533	1.886	4.124	10.467	4.463	3.712	8.77
2.439	1.517	3.296	5.389	3.061					
2.048	2.06	2.114	2.209	2.577					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.8

Target Absent					Target Present				
<b>5.389</b>	3.312	2.526	2.209	1.814	<b>14.136</b>	<b>7.294</b>	<b>5.496</b>	4.463	3.364
<b>4.934</b>	3.296	2.495	2.195	1.726	<b>10.889</b>	<b>7.275</b>	<b>4.968</b>	4.208	3.047
4.533	3.18	2.491	2.114	1.517	<b>10.467</b>	<b>6.264</b>	<b>4.817</b>	4.124	2.852
4.365	3.061	2.439	2.06	1.259	<b>9.514</b>	<b>6.07</b>	<b>4.804</b>	4.011	2.374
3.72	2.989	2.404	2.048	1.05	<b>8.77</b>	<b>6.068</b>	4.599	3.712	0.609
3.503	2.969	2.398	1.99	0.517	<b>8.519</b>	<b>5.645</b>	4.52	3.683	0.359
3.445	2.759	2.291	1.956	0.417					
3.391	2.577	2.245	1.886	0.343					

**Number of samples above threshold = 2**

**Number of samples above threshold = 16**

False Alarm rate : 2 in 40

Miss rate : 14 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 4.8

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.8**

Probability of correct TARGET detection (sensitivity) = 0.53333

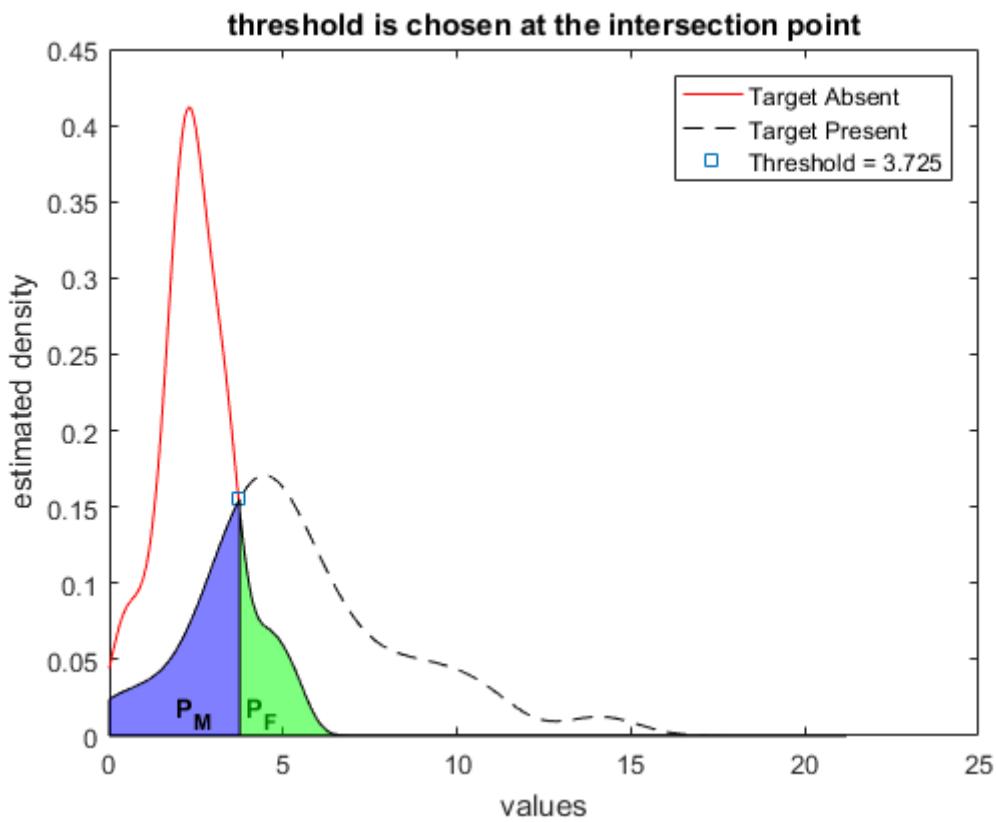
**Probability of Miss = 1 - sensitivity = 0.46667**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.88889**

Overall Accuracy = 0.77143



**Sorted and Partitioned Data : Threshold at 3.725**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.389	3.312	2.526	2.209	1.814	14.136	7.294	5.496	4.463	3.364
4.934	3.296	2.495	2.195	1.726	10.889	7.275	4.968	4.208	3.047
4.533	3.18	2.491	2.114	1.517	10.467	6.264	4.817	4.124	2.852
4.365	3.061	2.439	2.06	1.259	9.514	6.07	4.804	4.011	2.374
3.72	2.989	2.404	2.048	1.05	8.77	6.068	4.599	3.712	0.609
3.503	2.969	2.398	1.99	0.517	8.519	5.645	4.52	3.683	0.359
3.445	2.759	2.291	1.956	0.417					
3.391	2.577	2.245	1.886	0.343					

**Number of samples above threshold = 4**

False Alarm rate : 4 in 40

**Number of samples above threshold = 22**

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis Buccieri

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.725**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.84615**

Overall Accuracy = 0.82857

### Confusion Matrix (Threshold Value = 3.725)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	22	8	30
Total Counts	26	44	70

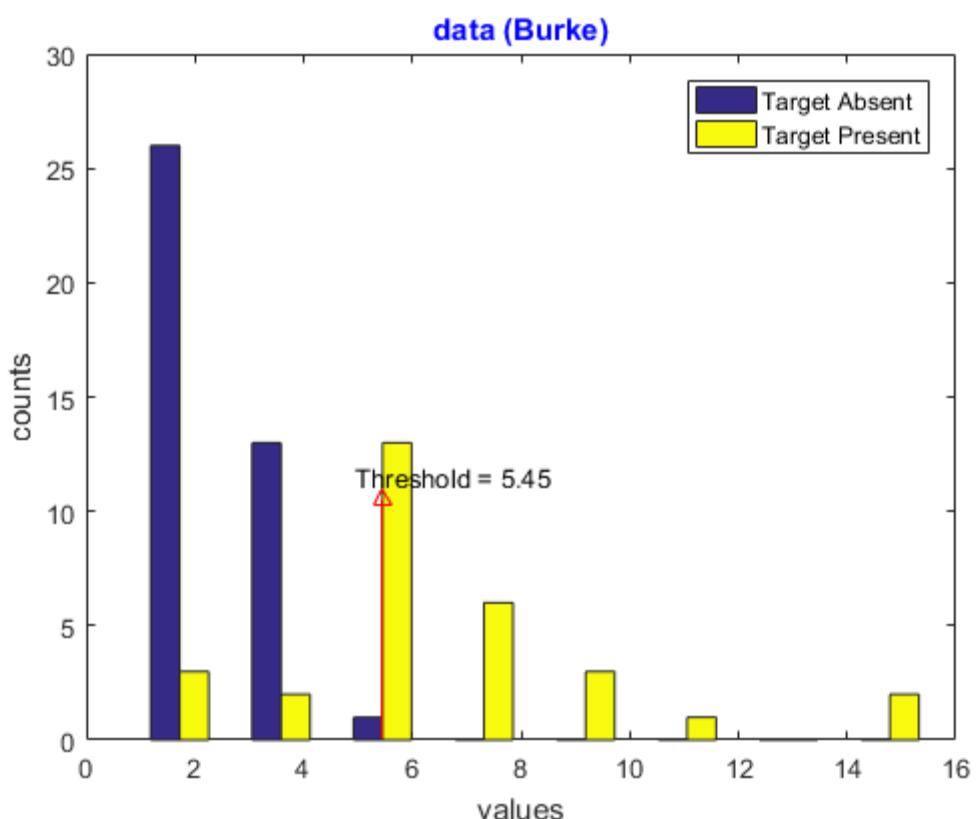
$$P_F = \frac{1}{10} \quad P_M = \frac{4}{15} \quad PPV = \frac{11}{13} \quad \text{err} = \frac{6}{35} \quad \text{acc} = \frac{29}{35}$$

## Summary of the analysis Buccieri

data (Burke)

Target Absent					Target Present				
2.723	1.516	0.834	2.265	3.348	7.788	2.112	4.581	11.624	2.295
0.83	0.902	0.784	2.996	1.406	14.023	9.669	5.595	5.372	15.724
1.369	3.152	2.938	2.303	1.583	5.293	8.12	4.295	8.625	5.246
4.506	2.118	1.687	3.736	4.814	5.754	6.544	6.477	7.439	5.142
1.041	1.422	0.803	1.595	3.933	5.13	5.748	6.02	5.497	2.502
2.812	2.77	2.623	2.686	2.525	6.666	9.378	5.478	3.627	4.915
1.022	3.407	2.36	0.962	4.113					
1.716	2.639	1.862	2.299	2.078					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.45

Target Absent					Target Present				
4.814	2.996	2.525	1.716	1.041	<b>15.724</b>	<b>8.12</b>	<b>6.02</b>	5.372	4.581
4.506	2.938	2.36	1.687	1.022	<b>14.023</b>	<b>7.788</b>	<b>5.754</b>	5.293	4.295
4.113	2.812	2.303	1.595	0.962	<b>11.624</b>	<b>7.439</b>	<b>5.748</b>	5.246	3.627
3.933	2.77	2.299	1.583	0.902	<b>9.669</b>	<b>6.666</b>	<b>5.595</b>	5.142	2.502
3.736	2.723	2.265	1.516	0.834	<b>9.378</b>	<b>6.544</b>	<b>5.497</b>	5.13	2.295
3.407	2.686	2.118	1.422	0.83	<b>8.625</b>	<b>6.477</b>	<b>5.478</b>	4.915	2.112
3.348	2.639	2.078	1.406	0.803					
3.152	2.623	1.862	1.369	0.784					

**Number of samples above threshold = 0**

**Number of samples above threshold = 18**

False Alarm rate : 0 in 40

Miss rate : 12 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 5.45

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.45**

Probability of correct TARGET detection (sensitivity) = 0.6

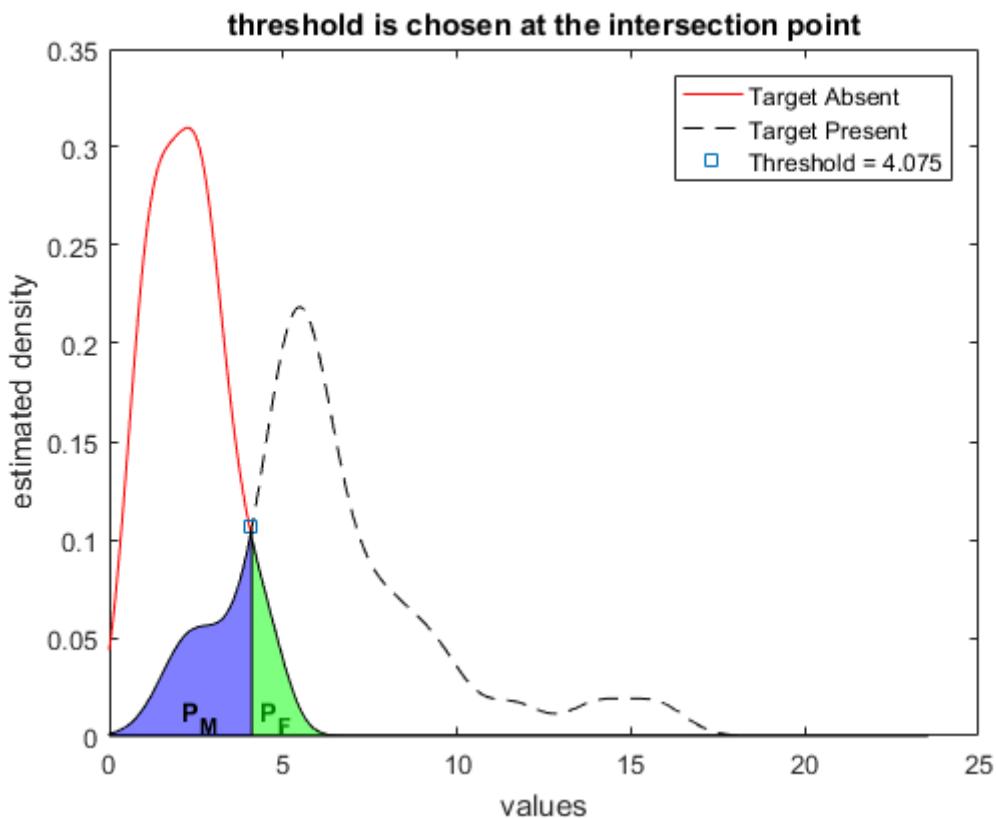
**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 4.075**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.814	2.996	2.525	1.716	1.041	15.724	8.12	6.02	5.372	4.581
4.506	2.938	2.36	1.687	1.022	14.023	7.788	5.754	5.293	4.295
4.113	2.812	2.303	1.595	0.962	11.624	7.439	5.748	5.246	3.627
3.933	2.77	2.299	1.583	0.902	9.669	6.666	5.595	5.142	2.502
3.736	2.723	2.265	1.516	0.834	9.378	6.544	5.497	5.13	2.295
3.407	2.686	2.118	1.422	0.83	8.625	6.477	5.478	4.915	2.112
3.348	2.639	2.078	1.406	0.803					
3.152	2.623	1.862	1.369	0.784					

**Number of samples above threshold = 3**

False Alarm rate : 3 in 40

**Number of samples above threshold = 26**

Miss rate : 4 in 30

(c) P. M. Shankar

## Summary of the analysis Burke

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.075**

Probability of correct TARGET detection (sensitivity) = 0.86667

**Probability of Miss = 1 - sensitivity = 0.13333**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.89655**

Overall Accuracy = 0.9

### Confusion Matrix (Threshold Value = 4.075)

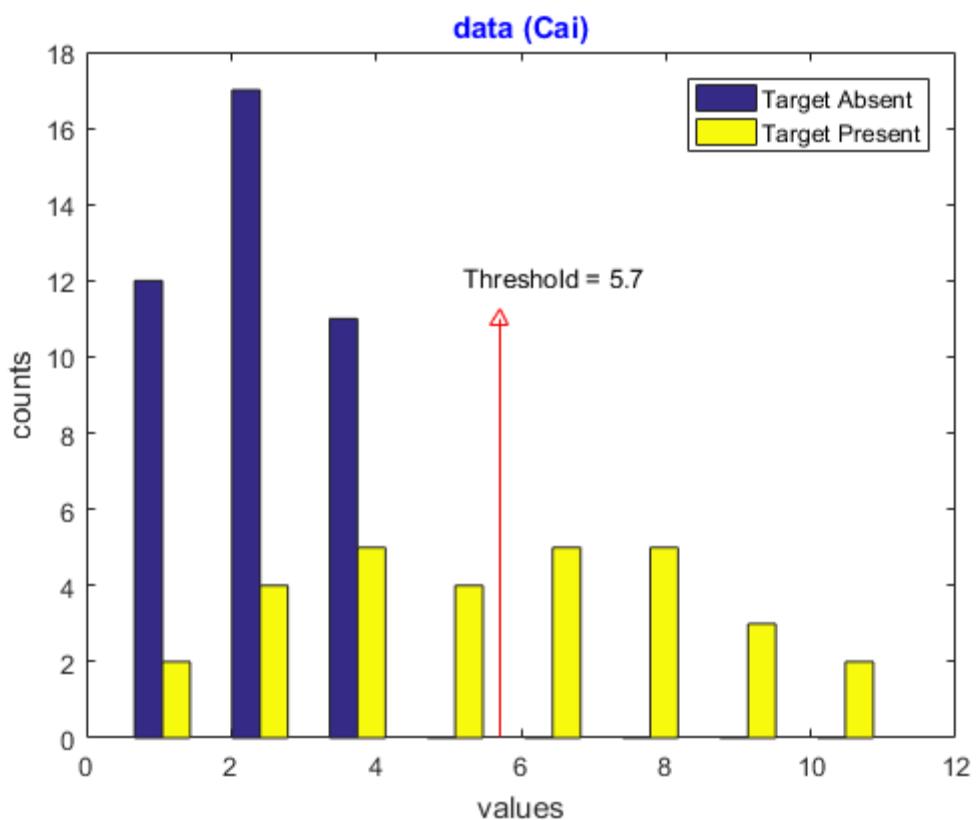
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	26	4	30
Total Counts	29	41	70

$$P_F = \frac{3}{40} \quad P_M = \frac{2}{15} \quad PPV = \frac{26}{29} \quad \text{err} = \frac{1}{10} \quad \text{acc} = \frac{9}{10}$$

## Summary of the analysis Burke

data (Cai)									
Target Absent					Target Present				
1.615	1.994	1.159	3.023	2.558	2.674	1.282	7.247	3.716	4.879
4.051	1.723	3.052	1.485	4.034	6.962	9.24	9.232	2.199	4.021
2.147	2.575	2.103	3.827	2.774	10.068	4.489	7.647	3.571	7.824
0.776	1.908	0.597	3.672	3.067	4.083	6.216	4.495	3.253	4.821
3.602	0.514	3.173	0.86	4.058	6.281	11.15	6.859	3.031	7.135
1.965	2.93	0.526	2.177	0.639	0.378	6.379	8.046	2.8	8.874
3.452	1.863	3.365	3.839	0.473					
2.468	2.263	3.295	1.193	2.593					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.7

Target Absent					Target Present				
4.058	3.365	2.593	1.994	1.159	<b>11.15</b>	<b>7.824</b>	<b>6.379</b>	4.489	3.031
4.051	3.295	2.575	1.965	0.86	<b>10.068</b>	<b>7.647</b>	<b>6.281</b>	4.083	2.8
4.034	3.173	2.558	1.908	0.776	<b>9.24</b>	<b>7.247</b>	<b>6.216</b>	4.021	2.674
3.839	3.067	2.468	1.863	0.639	<b>9.232</b>	<b>7.135</b>	4.879	3.716	2.199
3.827	3.052	2.263	1.723	0.597	<b>8.874</b>	<b>6.962</b>	4.821	3.571	1.282
3.672	3.023	2.177	1.615	0.526	<b>8.046</b>	<b>6.859</b>	4.495	3.253	0.378
3.602	2.93	2.147	1.485	0.514					
3.452	2.774	2.103	1.193	0.473					

**Number of samples above threshold = 0**

**Number of samples above threshold = 15**

False Alarm rate : 0 in 40

Miss rate : 15 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 5.7

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.7**

Probability of correct TARGET detection (sensitivity) = 0.5

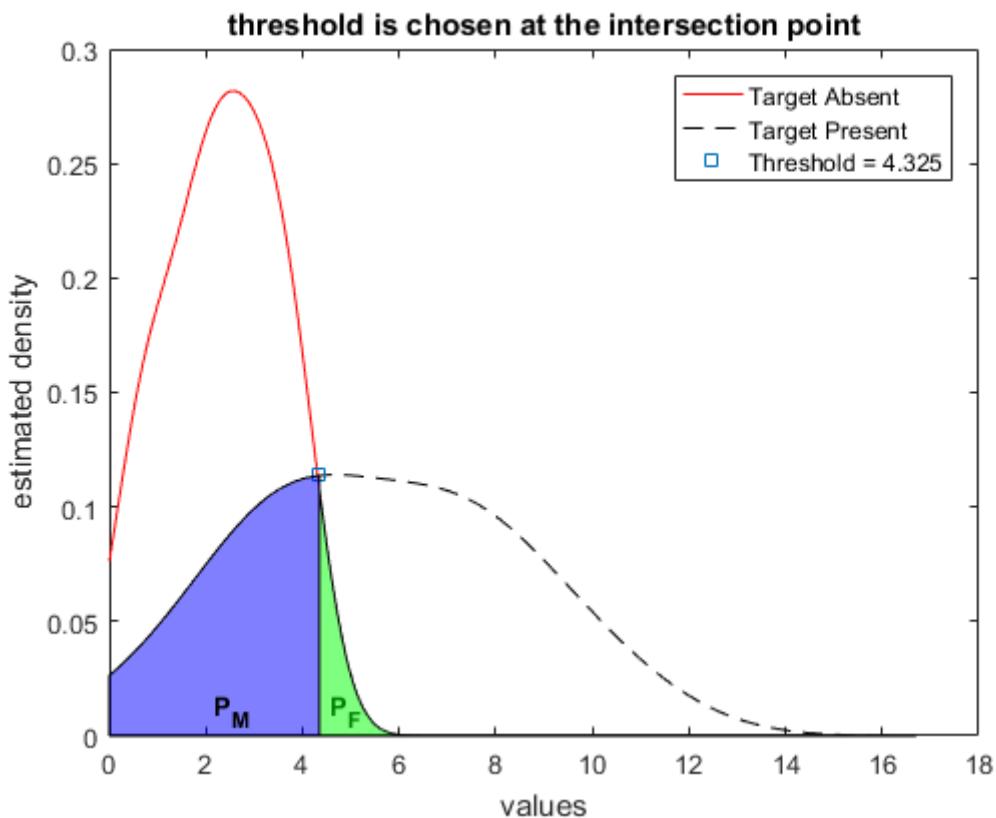
**Probability of Miss = 1 - sensitivity = 0.5**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.78571



**Sorted and Partitioned Data : Threshold at 4.325**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.058	3.365	2.593	1.994	1.159	<b>11.15</b>	<b>7.824</b>	<b>6.379</b>	<b>4.489</b>	3.031
4.051	3.295	2.575	1.965	0.86	<b>10.068</b>	<b>7.647</b>	<b>6.281</b>	4.083	2.8
4.034	3.173	2.558	1.908	0.776	<b>9.24</b>	<b>7.247</b>	<b>6.216</b>	4.021	2.674
3.839	3.067	2.468	1.863	0.639	<b>9.232</b>	<b>7.135</b>	<b>4.879</b>	3.716	2.199
3.827	3.052	2.263	1.723	0.597	<b>8.874</b>	<b>6.962</b>	<b>4.821</b>	3.571	1.282
3.672	3.023	2.177	1.615	0.526	<b>8.046</b>	<b>6.859</b>	<b>4.495</b>	3.253	0.378
3.602	2.93	2.147	1.485	0.514					
3.452	2.774	2.103	1.193	0.473					

**Number of samples above threshold = 0**

**Number of samples above threshold = 19**

False Alarm rate : 0 in 40

Miss rate : 11 in 30

**(c) P. M. Shankar**

## Summary of the analysis Cai

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.325**

Probability of correct TARGET detection (sensitivity) = 0.63333

**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.84286

### Confusion Matrix (Threshold Value = 4.325)

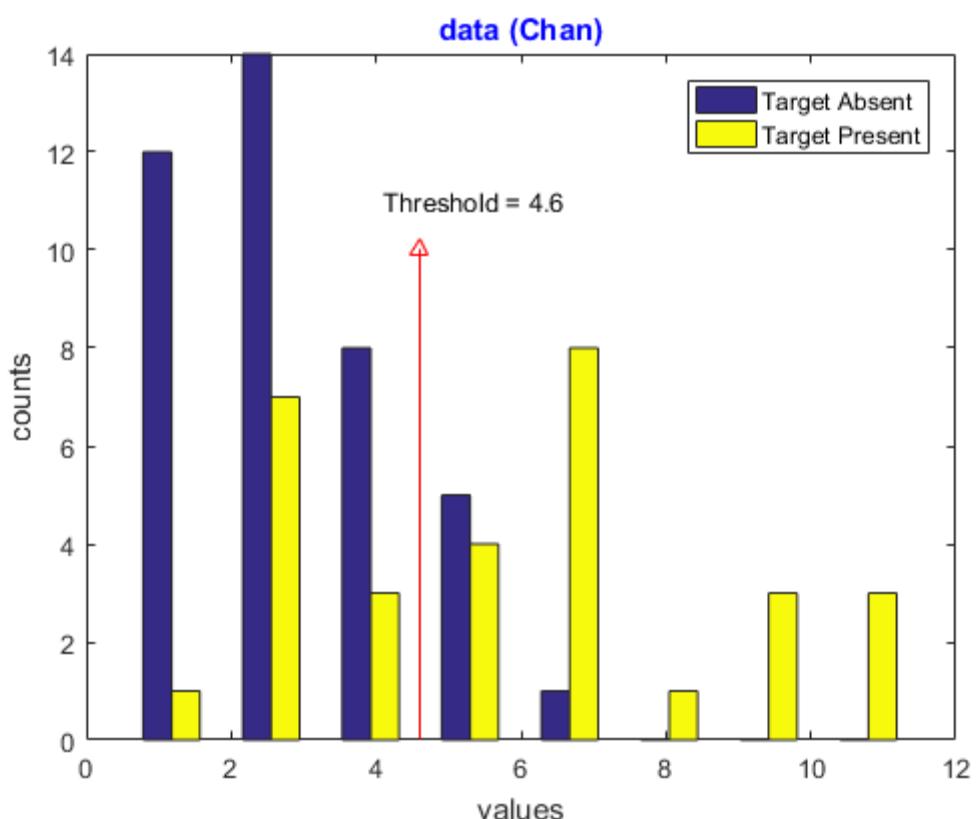
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	0	40	40
Target Present	19	11	30
Total Counts	19	51	70

$$P_F = 0 \quad P_M = \frac{11}{30} \quad \text{PPV} = 1 \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

## Summary of the analysis Cai

data (Chan)									
Target Absent					Target Present				
4.069	1.392	6.061	0.491	4.033	6.996	5.478	8.359	3.128	6.498
1.89	1.703	3.581	2.334	3.522	6.327	2.369	1.121	7.041	3.748
1.6	2.993	4.644	2.889	4.085	2.172	8.798	6.732	5.133	3.095
1.704	3.296	1.155	0.662	1.379	6.179	3.749	3.914	2.941	2.321
4.695	2.387	2.549	1.724	1.157	2.673	6.031	10.332	11.34	8.803
1.468	3.884	4.333	2.811	3.043	9.14	4.998	6.653	11.479	5.701
2.018	2.711	2.306	1.92	2.037					
5.428	1.681	5.125	5.03	2.272					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.6

Target Absent					Target Present				
<b>6.061</b>	4.069	2.889	2.037	1.6	<b>11.479</b>	<b>8.359</b>	<b>6.327</b>	<b>4.998</b>	2.941
<b>5.428</b>	4.033	2.811	2.018	1.468	<b>11.34</b>	<b>7.041</b>	<b>6.179</b>	3.914	2.673
<b>5.125</b>	3.884	2.711	1.92	1.392	<b>10.332</b>	<b>6.996</b>	<b>6.031</b>	3.749	2.369
<b>5.03</b>	3.581	2.549	1.89	1.379	<b>9.14</b>	<b>6.732</b>	<b>5.701</b>	3.748	2.321
<b>4.695</b>	3.522	2.387	1.724	1.157	<b>8.803</b>	<b>6.653</b>	<b>5.478</b>	3.128	2.172
<b>4.644</b>	3.296	2.334	1.704	1.155	<b>8.798</b>	<b>6.498</b>	<b>5.133</b>	3.095	1.121
4.333	3.043	2.306	1.703	0.662					
4.085	2.993	2.272	1.681	0.491					

Number of samples above threshold = 6

Number of samples above threshold = 19

False Alarm rate : 6 in 40

Miss rate : 11 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.6

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.6**

Probability of correct TARGET detection (sensitivity) = 0.63333

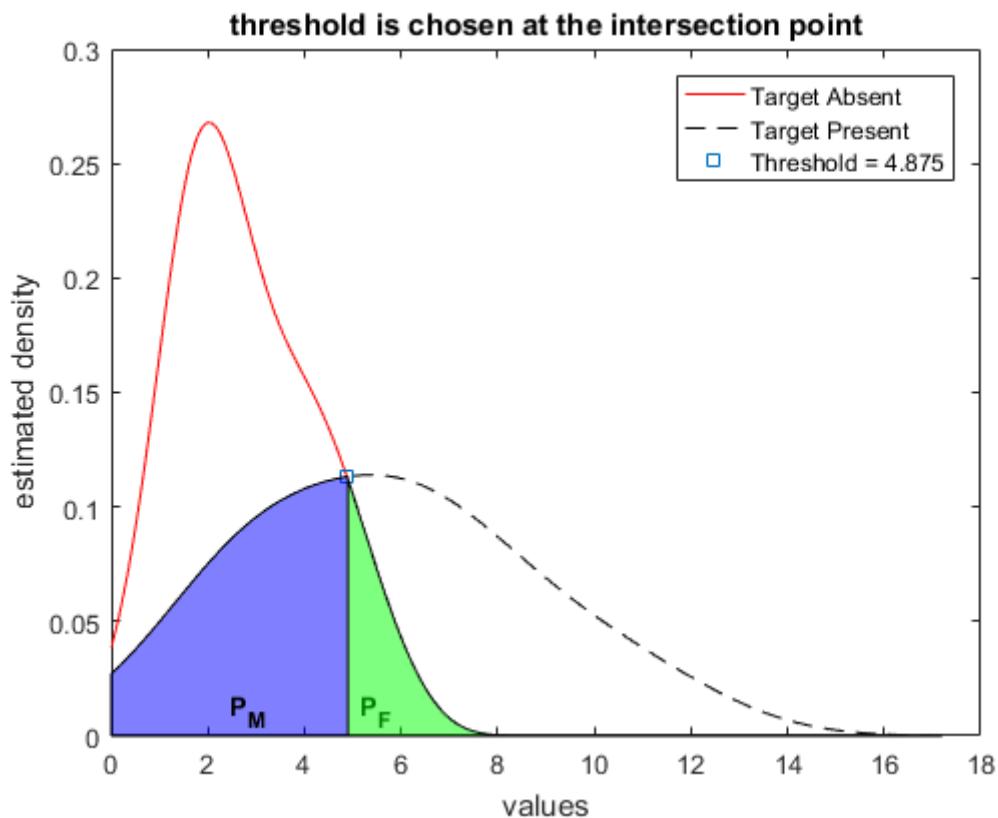
**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.85

**Probability of False Alarm = 1 - specificity = 0.15**

**Positive Predictive Value (PPV) = a posteriori probability = 0.76**

Overall Accuracy = 0.75714



**Sorted and Partitioned Data : Threshold at 4.875**  
**Threshold is chosen at the intersection point**

Target Absent						Target Present				
<b>6.061</b>	4.069	2.889	2.037	1.6		<b>11.479</b>	<b>8.359</b>	<b>6.327</b>	<b>4.998</b>	2.941
<b>5.428</b>	4.033	2.811	2.018	1.468		<b>11.34</b>	<b>7.041</b>	<b>6.179</b>	3.914	2.673
<b>5.125</b>	3.884	2.711	1.92	1.392		<b>10.332</b>	<b>6.996</b>	<b>6.031</b>	3.749	2.369
<b>5.03</b>	3.581	2.549	1.89	1.379		<b>9.14</b>	<b>6.732</b>	<b>5.701</b>	3.748	2.321
4.695	3.522	2.387	1.724	1.157		<b>8.803</b>	<b>6.653</b>	<b>5.478</b>	3.128	2.172
4.644	3.296	2.334	1.704	1.155		<b>8.798</b>	<b>6.498</b>	<b>5.133</b>	3.095	1.121
4.333	3.043	2.306	1.703	0.662						
4.085	2.993	2.272	1.681	0.491						

Number of samples above threshold = 4

False Alarm rate : 4 in 40

Number of samples above threshold = 19

Miss rate : 11 in 30

(c) P. M. Shankar

## Summary of the analysis Chan

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.875**

Probability of correct TARGET detection (sensitivity) = 0.63333

**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.82609**

Overall Accuracy = 0.78571

### Confusion Matrix (Threshold Value = 4.875)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	19	11	30
Total Counts	23	47	70

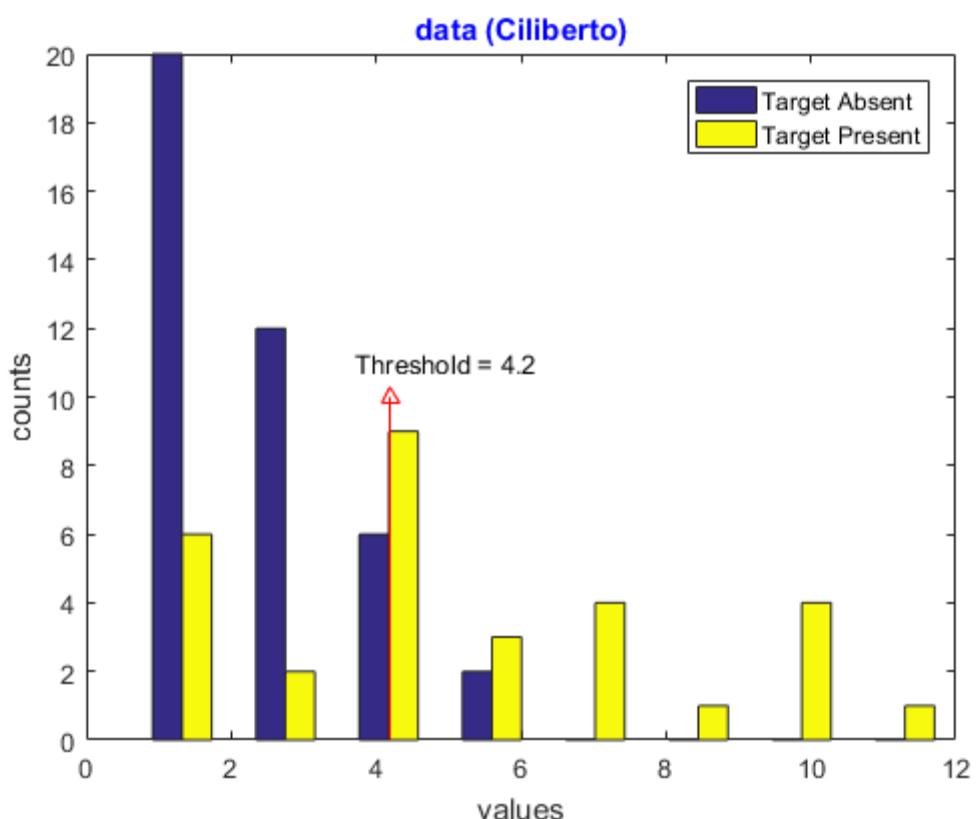
$$P_F = \frac{1}{10} \quad P_M = \frac{11}{30} \quad PPV = \frac{19}{23} \quad \text{err} = \frac{3}{14} \quad \text{acc} = \frac{11}{14}$$

## Summary of the analysis Chan

data (Ciliberto)

Target Absent					Target Present				
2.776	1.489	2.85	1.27	3.801	12.01	3.838	8.389	5.576	4.69
1.052	3.429	2.646	1.713	5.013	1.705	4.45	6.932	5.235	1.49
1.189	1.88	0.612	4.217	3.119	7.389	4.264	10.324	4.371	7.579
0.923	1.096	5.246	1.568	4.193	4.609	1.818	9.814	9.581	9.889
3.821	4.316	2.185	1.589	2.227	4.501	1.781	3.641	4.54	6.874
1.998	1.164	2.941	2.867	1.433	2.797	0.74	5.083	1.438	2.966
1.427	1.871	2.214	1.19	2.693					
3.832	1.208	1.195	1.317	2.374					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.2

Target Absent					Target Present				
<b>5.246</b>	3.429	2.374	1.589	1.195	<b>12.01</b>	<b>7.579</b>	<b>5.083</b>	<b>4.371</b>	1.818
<b>5.013</b>	3.119	2.227	1.568	1.19	<b>10.324</b>	<b>7.389</b>	<b>4.69</b>	<b>4.264</b>	1.781
<b>4.316</b>	2.941	2.214	1.489	1.189	<b>9.889</b>	<b>6.932</b>	<b>4.609</b>	3.838	1.705
<b>4.217</b>	2.867	2.185	1.433	1.164	<b>9.814</b>	<b>6.874</b>	<b>4.54</b>	3.641	1.49
4.193	2.85	1.998	1.427	1.096	<b>9.581</b>	<b>5.576</b>	<b>4.501</b>	2.966	1.438
3.832	2.776	1.88	1.317	1.052	<b>8.389</b>	<b>5.235</b>	<b>4.45</b>	2.797	0.74
3.821	2.693	1.871	1.27	0.923					
3.801	2.646	1.713	1.208	0.612					

Number of samples above threshold = 4

Number of samples above threshold = 20

False Alarm rate : 4 in 40

Miss rate : 10 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.2

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.2**

Probability of correct TARGET detection (sensitivity) = 0.66667

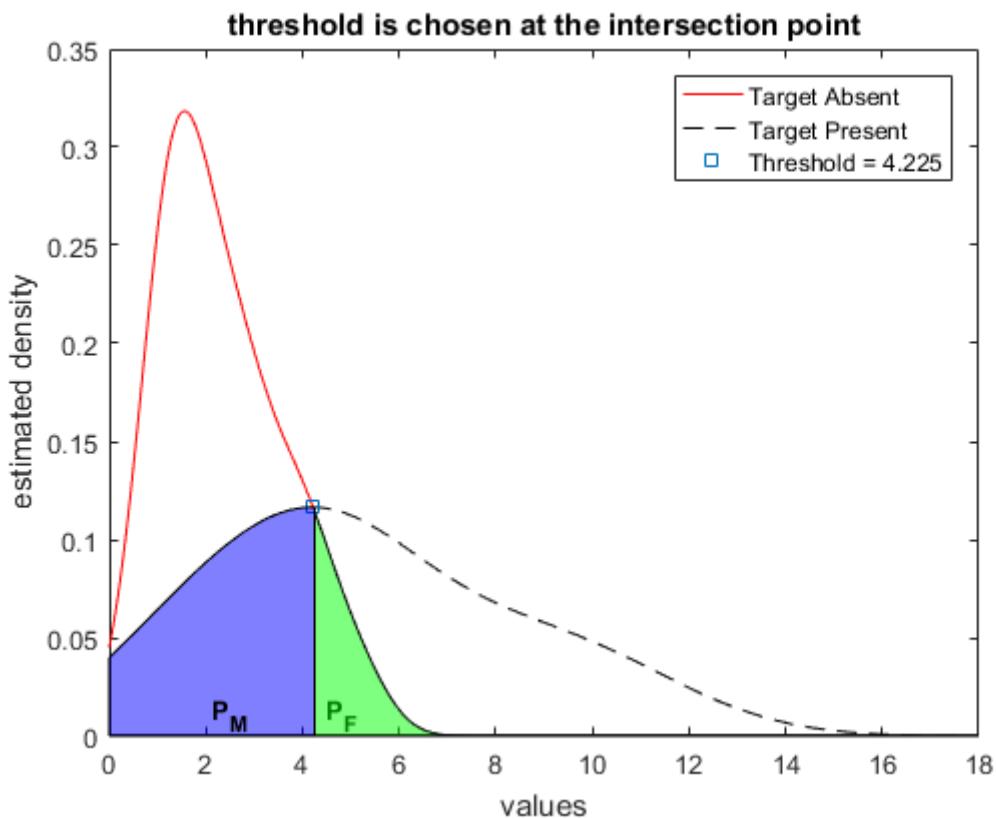
**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.83333**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 4.225**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.246	3.429	2.374	1.589	1.195	12.01	7.579	5.083	4.371	1.818
5.013	3.119	2.227	1.568	1.19	10.324	7.389	4.69	4.264	1.781
4.316	2.941	2.214	1.489	1.189	9.889	6.932	4.609	3.838	1.705
4.217	2.867	2.185	1.433	1.164	9.814	6.874	4.54	3.641	1.49
4.193	2.85	1.998	1.427	1.096	9.581	5.576	4.501	2.966	1.438
3.832	2.776	1.88	1.317	1.052	8.389	5.235	4.45	2.797	0.74
3.821	2.693	1.871	1.27	0.923					
3.801	2.646	1.713	1.208	0.612					

**Number of samples above threshold = 3**

**Number of samples above threshold = 20**

False Alarm rate : 3 in 40

Miss rate : 10 in 30

**(c) P. M. Shankar**

## Summary of the analysis Ciliberto

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.225**

Probability of correct TARGET detection (sensitivity) = 0.66667

**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.86957**

Overall Accuracy = 0.81429

### Confusion Matrix (Threshold Value = 4.225)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	20	10	30
Total Counts	23	47	70

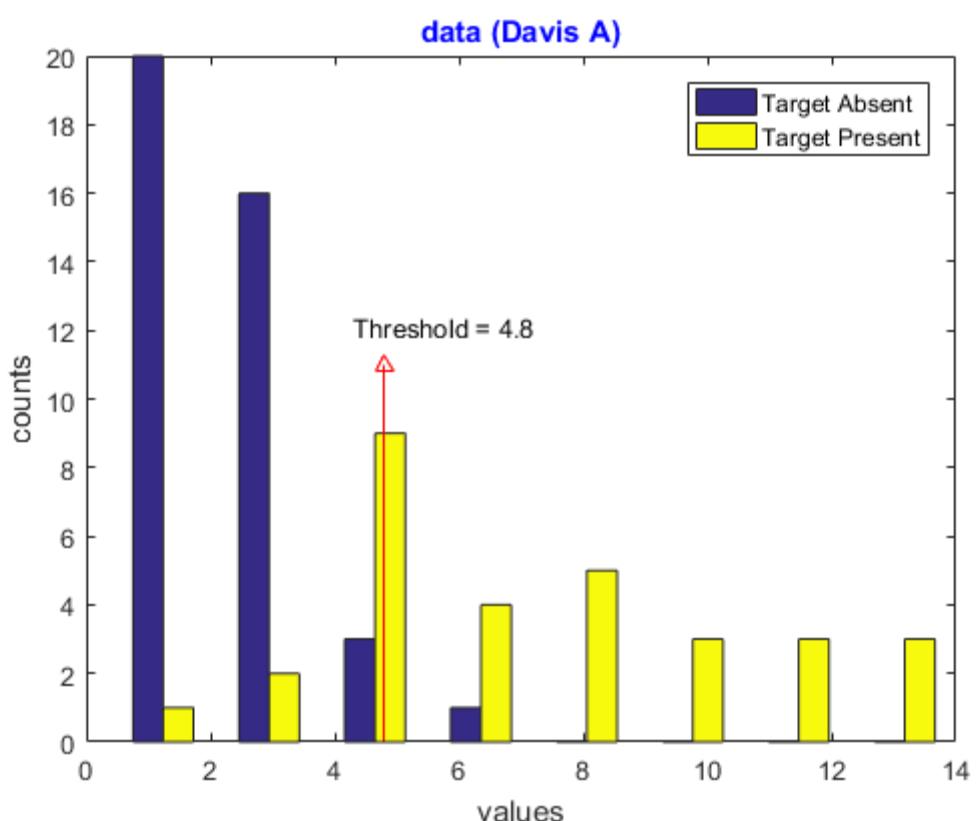
$$P_F = \frac{3}{40} \quad P_M = \frac{1}{3} \quad \text{PPV} = \frac{20}{23} \quad \text{err} = \frac{13}{70} \quad \text{acc} = \frac{57}{70}$$

## Summary of the analysis Ciliberto

data (Davis A)

Target Absent					Target Present				
2.589	1.988	3.572	2.609	2.851	4.98	5.419	13.903	5.563	7.124
1.198	2.913	5.118	2	1.893	5.606	3.294	3.538	11.56	7.253
1.701	1.609	0.774	2.743	2.87	3.86	12.124	7.452	9.738	5.371
2.208	2.043	3.495	3.079	2.784	0.757	14.03	7.467	5.488	5.119
1.666	2.074	5.859	0.387	1.402	6.354	9.806	4.773	11.68	4.147
2.504	2.072	0.487	1.377	4.58	7.437	10.394	3.93	12.695	8.537
2.135	1.075	1.091	0.712	2.436					
1.628	4.986	3.792	2.527	1.912					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.8

Target Absent					Target Present				
<b>5.859</b>	2.913	2.504	1.988	1.377	<b>14.03</b>	<b>10.394</b>	<b>7.437</b>	<b>5.488</b>	4.147
<b>5.118</b>	2.87	2.436	1.912	1.198	<b>13.903</b>	<b>9.806</b>	<b>7.253</b>	<b>5.419</b>	3.93
<b>4.986</b>	2.851	2.208	1.893	1.091	<b>12.695</b>	<b>9.738</b>	<b>7.124</b>	<b>5.371</b>	3.86
4.58	2.784	2.135	1.701	1.075	<b>12.124</b>	<b>8.537</b>	<b>6.354</b>	<b>5.119</b>	3.538
3.792	2.743	2.074	1.666	0.774	<b>11.68</b>	<b>7.467</b>	<b>5.606</b>	<b>4.98</b>	3.294
3.572	2.609	2.072	1.628	0.712	<b>11.56</b>	<b>7.452</b>	<b>5.563</b>	4.773	0.757
3.495	2.589	2.043	1.609	0.487					
3.079	2.527	2	1.402	0.387					

Number of samples above threshold = 3

Number of samples above threshold = 23

False Alarm rate : 3 in 40

Miss rate : 7 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.8

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.8**

Probability of correct TARGET detection (sensitivity) = 0.76667

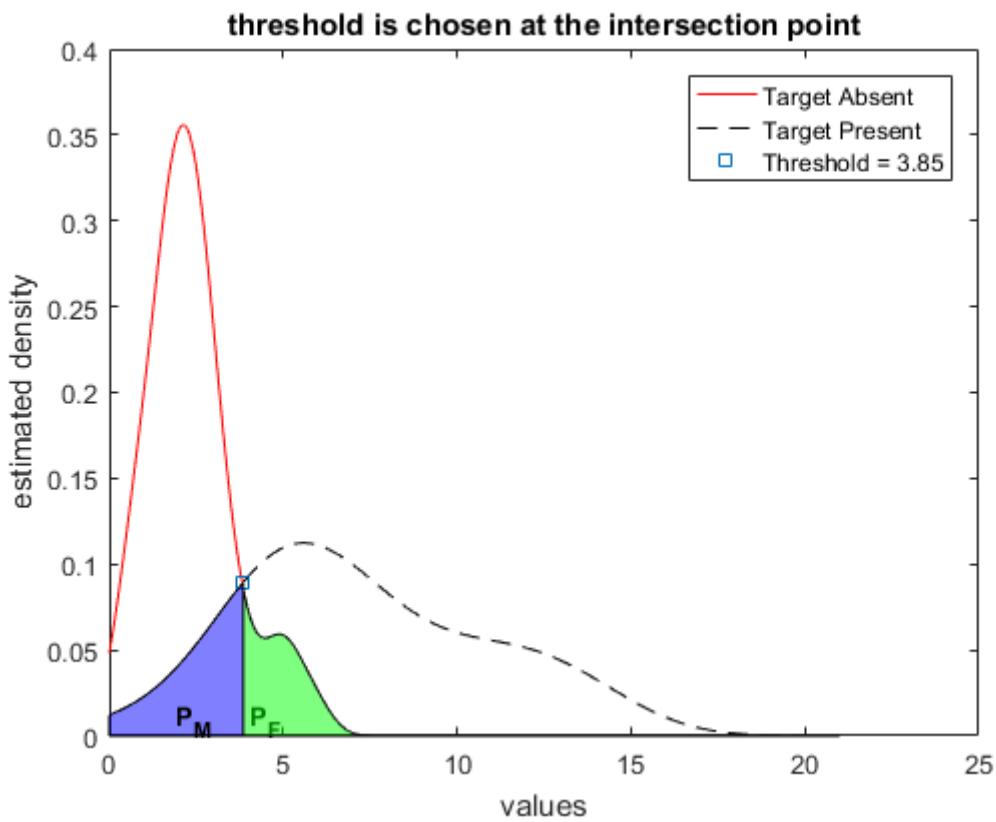
**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.88462**

Overall Accuracy = 0.85714



**Sorted and Partitioned Data : Threshold at 3.85**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.859	2.913	2.504	1.988	1.377	14.03	10.394	7.437	5.488	4.147
5.118	2.87	2.436	1.912	1.198	13.903	9.806	7.253	5.419	3.93
4.986	2.851	2.208	1.893	1.091	12.695	9.738	7.124	5.371	3.86
4.58	2.784	2.135	1.701	1.075	12.124	8.537	6.354	5.119	3.538
3.792	2.743	2.074	1.666	0.774	11.68	7.467	5.606	4.98	3.294
3.572	2.609	2.072	1.628	0.712	11.56	7.452	5.563	4.773	0.757
3.495	2.589	2.043	1.609	0.487					
3.079	2.527	2	1.402	0.387					

**Number of samples above threshold = 4**

False Alarm rate : 4 in 40

**Number of samples above threshold = 27**

Miss rate : 3 in 30

**(c) P. M. Shankar**

## Summary of the analysis Davis A

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.85**

Probability of correct TARGET detection (sensitivity) = 0.9

**Probability of Miss = 1 - sensitivity = 0.1**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.87097**

Overall Accuracy = 0.9

**Confusion Matrix (Threshold Value = 3.85)**

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	27	3	30
Total Counts	31	39	70

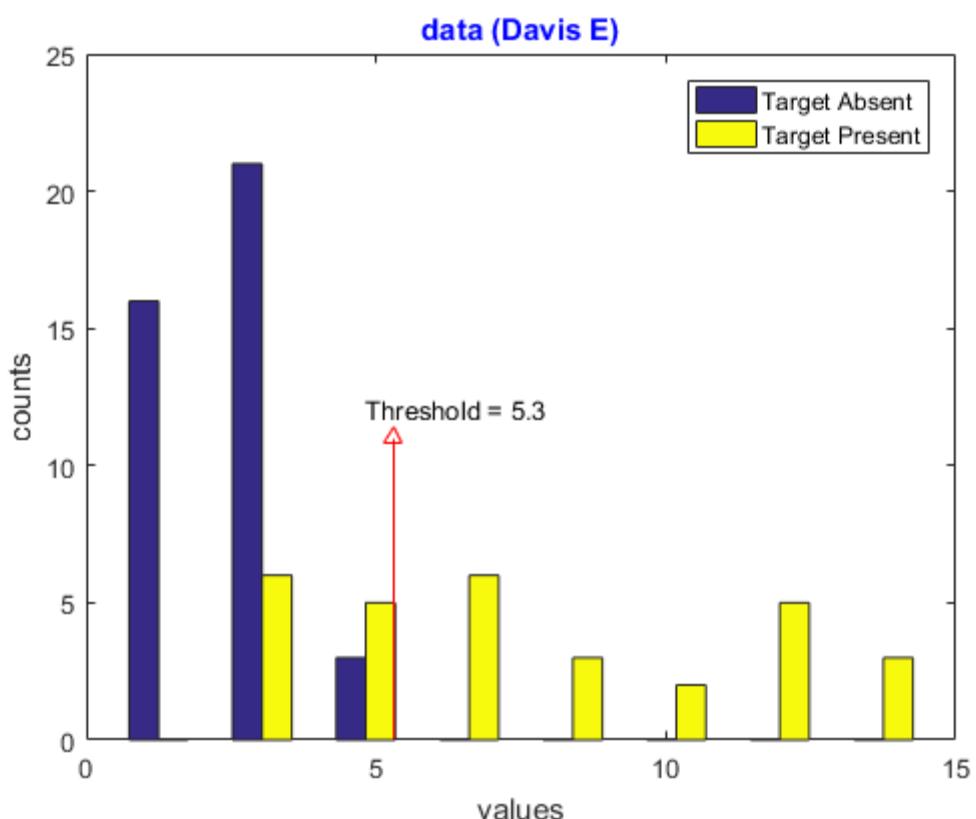
$$P_F = \frac{1}{10} \quad P_M = \frac{1}{10} \quad PPV = \frac{27}{31} \quad \text{err} = \frac{1}{10} \quad \text{acc} = \frac{9}{10}$$

## Summary of the analysis Davis A

data (Davis E)

Target Absent					Target Present				
2.525	1.854	3.056	2.33	2.227	7.121	5.971	3.491	4.276	4.64
3.342	0.84	3.298	2.226	2.385	2.613	12.698	8.706	7.346	11.584
3.806	1.866	2.718	2.182	1.357	13.149	3.688	5.837	8.158	14.389
3.593	1.954	4.532	2.074	3.612	3.135	2.967	10.75	9.62	5.854
0.838	1.708	2.79	1.574	4.347	14.643	11.964	5.183	5.545	12.338
0.375	2.615	0.759	3.602	1.446	12.81	3.308	8.487	6.584	4.667
2.223	1.622	2.646	1.06	4.335					
0.356	0.584	2.852	2.521	2.477					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.3

Target Absent					Target Present				
4.532	3.298	2.521	2.074	1.357	14.643	11.964	8.158	5.837	3.688
4.347	3.056	2.477	1.954	1.06	14.389	11.584	7.346	5.545	3.491
4.335	2.852	2.385	1.866	0.84	13.149	10.75	7.121	5.183	3.308
3.806	2.79	2.33	1.854	0.838	12.81	9.62	6.584	4.667	3.135
3.612	2.718	2.227	1.708	0.759	12.698	8.706	5.971	4.64	2.967
3.602	2.646	2.226	1.622	0.584	12.338	8.487	5.854	4.276	2.613
3.593	2.615	2.223	1.574	0.375					
3.342	2.525	2.182	1.446	0.356					

Number of samples above threshold = 0

Number of samples above threshold = 20

False Alarm rate : 0 in 40

Miss rate : 10 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.3

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.3**

Probability of correct TARGET detection (sensitivity) = 0.66667

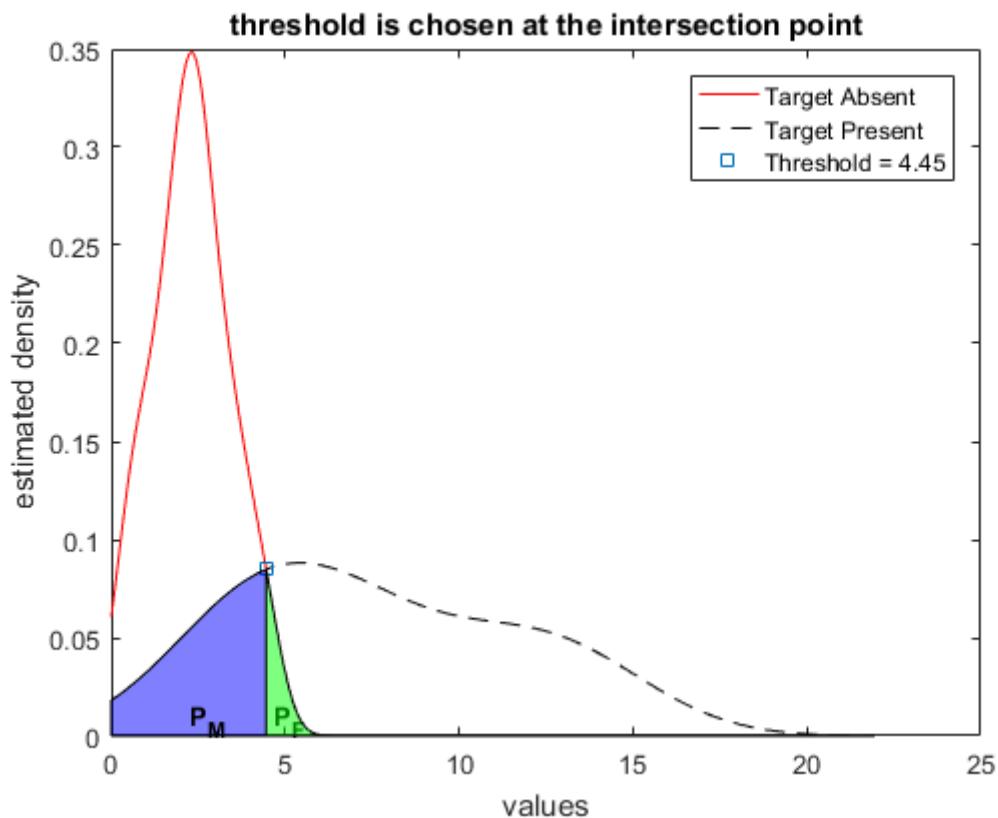
**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.85714



**Sorted and Partitioned Data : Threshold at 4.45**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>4.532</b>	3.298	2.521	2.074	1.357	<b>14.643</b>	<b>11.964</b>	<b>8.158</b>	<b>5.837</b>	3.688
4.347	3.056	2.477	1.954	1.06	<b>14.389</b>	<b>11.584</b>	<b>7.346</b>	<b>5.545</b>	3.491
4.335	2.852	2.385	1.866	0.84	<b>13.149</b>	<b>10.75</b>	<b>7.121</b>	<b>5.183</b>	3.308
3.806	2.79	2.33	1.854	0.838	<b>12.81</b>	<b>9.62</b>	<b>6.584</b>	<b>4.667</b>	3.135
3.612	2.718	2.227	1.708	0.759	<b>12.698</b>	<b>8.706</b>	<b>5.971</b>	<b>4.64</b>	2.967
3.602	2.646	2.226	1.622	0.584	<b>12.338</b>	<b>8.487</b>	<b>5.854</b>	4.276	2.613
3.593	2.615	2.223	1.574	0.375					
3.342	2.525	2.182	1.446	0.356					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 23**

Miss rate : 7 in 30

(c) P. M. Shankar

## Summary of the analysis

### Davis E

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.45**

Probability of correct TARGET detection (sensitivity) = 0.76667

**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95833**

Overall Accuracy = 0.88571

### Confusion Matrix (Threshold Value = 4.45)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	23	7	30
Total Counts	24	46	70

$$P_F = \frac{1}{40} \quad P_M = \frac{7}{30} \quad PPV = \frac{23}{24} \quad \text{err} = \frac{4}{35} \quad \text{acc} = \frac{31}{35}$$

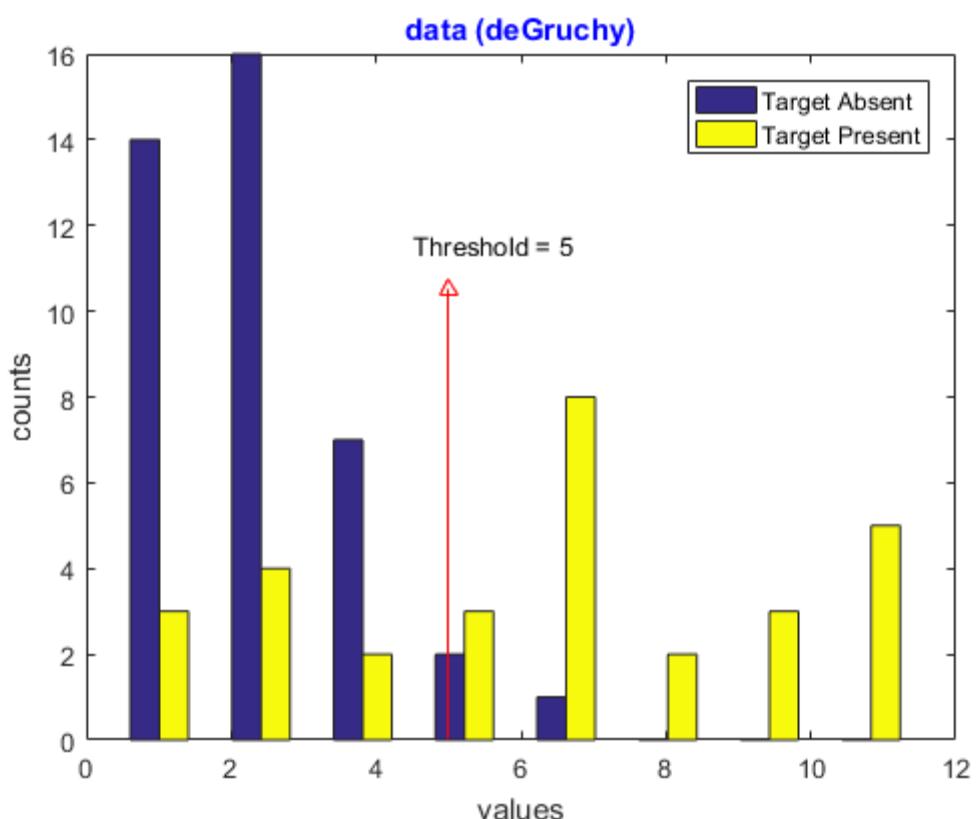
## Summary of the analysis

### Davis E

**data (deGruchy)**

Target Absent					Target Present				
1.501	3.03	1.04	0.835	0.886	4.765	1.461	6.025	9.035	7.888
3.497	0.965	1.722	0.577	3.411	0.569	6.485	8.898	3.326	10.355
1.766	2.669	2.461	1.955	1.74	4.829	10.57	10.359	8.227	5.783
6.372	1.1	1.532	2.698	1.146	9.307	1.935	4.438	11.535	0.307
3.646	2.178	5.577	1.202	1.921	1.873	7.286	6.68	10.404	6.662
4.062	1.117	2.599	2.056	1.56	6.618	6.317	7.153	2.057	2.419
4.321	3.19	1.881	2.789	1.84					
1.08	2.332	5.059	3.443	1.55					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5

Target Absent					Target Present				
<b>6.372</b>	3.411	2.332	1.74	1.117	<b>11.535</b>	<b>9.035</b>	<b>6.68</b>	<b>5.783</b>	2.057
<b>5.577</b>	3.19	2.178	1.722	1.1	<b>10.57</b>	<b>8.898</b>	<b>6.662</b>	4.829	1.935
<b>5.059</b>	3.03	2.056	1.56	1.08	<b>10.404</b>	<b>8.227</b>	<b>6.618</b>	4.765	1.873
4.321	2.789	1.955	1.55	1.04	<b>10.359</b>	<b>7.888</b>	<b>6.485</b>	4.438	1.461
4.062	2.698	1.921	1.532	0.965	<b>10.355</b>	<b>7.286</b>	<b>6.317</b>	3.326	0.569
3.646	2.669	1.881	1.501	0.886	<b>9.307</b>	<b>7.153</b>	<b>6.025</b>	2.419	0.307
3.497	2.599	1.84	1.202	0.835					
3.443	2.461	1.766	1.146	0.577					

Number of samples above threshold = 3

Number of samples above threshold = 19

False Alarm rate : 3 in 40

Miss rate : 11 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5**

Probability of correct TARGET detection (sensitivity) = 0.63333

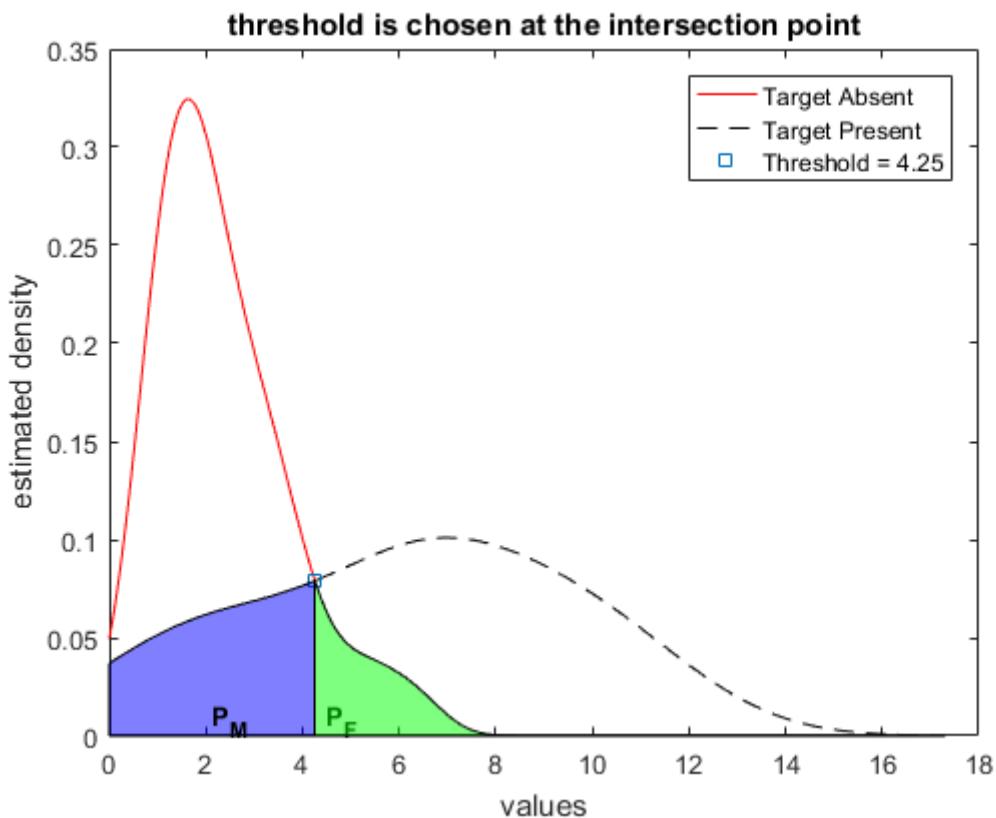
**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.86364**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 4.25**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
6.372	3.411	2.332	1.74	1.117	11.535	9.035	6.68	5.783	2.057
5.577	3.19	2.178	1.722	1.1	10.57	8.898	6.662	4.829	1.935
5.059	3.03	2.056	1.56	1.08	10.404	8.227	6.618	4.765	1.873
4.321	2.789	1.955	1.55	1.04	10.359	7.888	6.485	4.438	1.461
4.062	2.698	1.921	1.532	0.965	10.355	7.286	6.317	3.326	0.569
3.646	2.669	1.881	1.501	0.886	9.307	7.153	6.025	2.419	0.307
3.497	2.599	1.84	1.202	0.835					
3.443	2.461	1.766	1.146	0.577					

Number of samples above threshold = 4

Number of samples above threshold = 22

False Alarm rate : 4 in 40

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis deGruchy

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.25**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.84615**

Overall Accuracy = 0.82857

### Confusion Matrix (Threshold Value = 4.25)

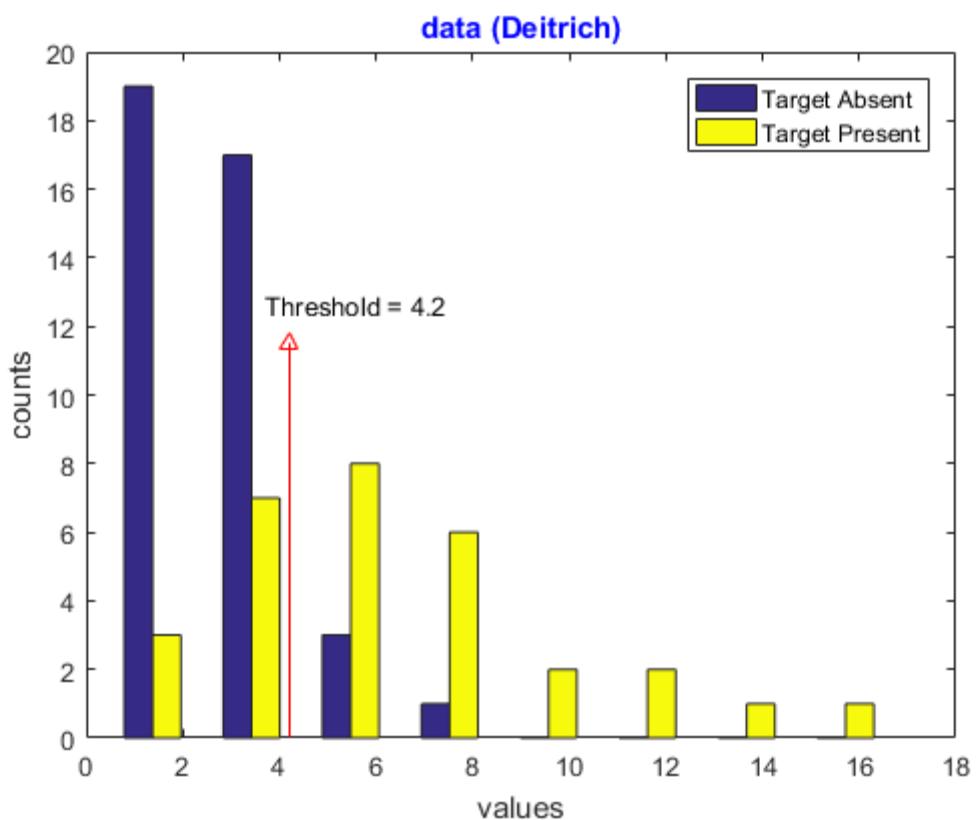
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	22	8	30
Total Counts	26	44	70

$$P_F = \frac{1}{10} \quad P_M = \frac{4}{15} \quad PPV = \frac{11}{13} \quad \text{err} = \frac{6}{35} \quad \text{acc} = \frac{29}{35}$$

## Summary of the analysis deGruchy

data (Deitrich)									
Target Absent					Target Present				
2.103	4.421	1.139	1.471	2.051	7.659	6.967	6.891	5.131	3.929
1.59	1.007	6.515	0.723	2.937	4.437	2.221	4.983	3.826	10.414
2.122	3.088	0.35	2.971	3.443	5.465	8.067	11.548	2.984	11.709
4.082	1.194	3.763	3.109	4.502	16.743	6.362	7.557	4.6	3.211
2.268	2.478	4.973	1.736	3.997	2.435	2.397	10.257	14.394	1.735
0.939	0.877	1.265	2.27	3.336	5.595	5.274	6.363	2.437	8.018
2.55	2.217	3.931	3.863	4.564					
1.172	1.403	2.778	3.607	2.476					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.2

Target Absent					Target Present				
<b>6.515</b>	3.863	2.937	2.122	1.194	<b>16.743</b>	<b>8.067</b>	<b>6.363</b>	<b>4.983</b>	2.984
<b>4.973</b>	3.763	2.778	2.103	1.172	<b>14.394</b>	<b>8.018</b>	<b>6.362</b>	<b>4.6</b>	2.437
<b>4.564</b>	3.607	2.55	2.051	1.139	<b>11.709</b>	<b>7.659</b>	<b>5.595</b>	<b>4.437</b>	2.435
<b>4.502</b>	3.443	2.478	1.736	1.007	<b>11.548</b>	<b>7.557</b>	<b>5.465</b>	3.929	2.397
<b>4.421</b>	3.336	2.476	1.59	0.939	<b>10.414</b>	<b>6.967</b>	<b>5.274</b>	3.826	2.221
4.082	3.109	2.27	1.471	0.877	<b>10.257</b>	<b>6.891</b>	<b>5.131</b>	3.211	1.735
3.997	3.088	2.268	1.403	0.723					
3.931	2.971	2.217	1.265	0.35					

Number of samples above threshold = 5

Number of samples above threshold = 21

False Alarm rate : 5 in 40

Miss rate : 9 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.2

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.2**

Probability of correct TARGET detection (sensitivity) = 0.7

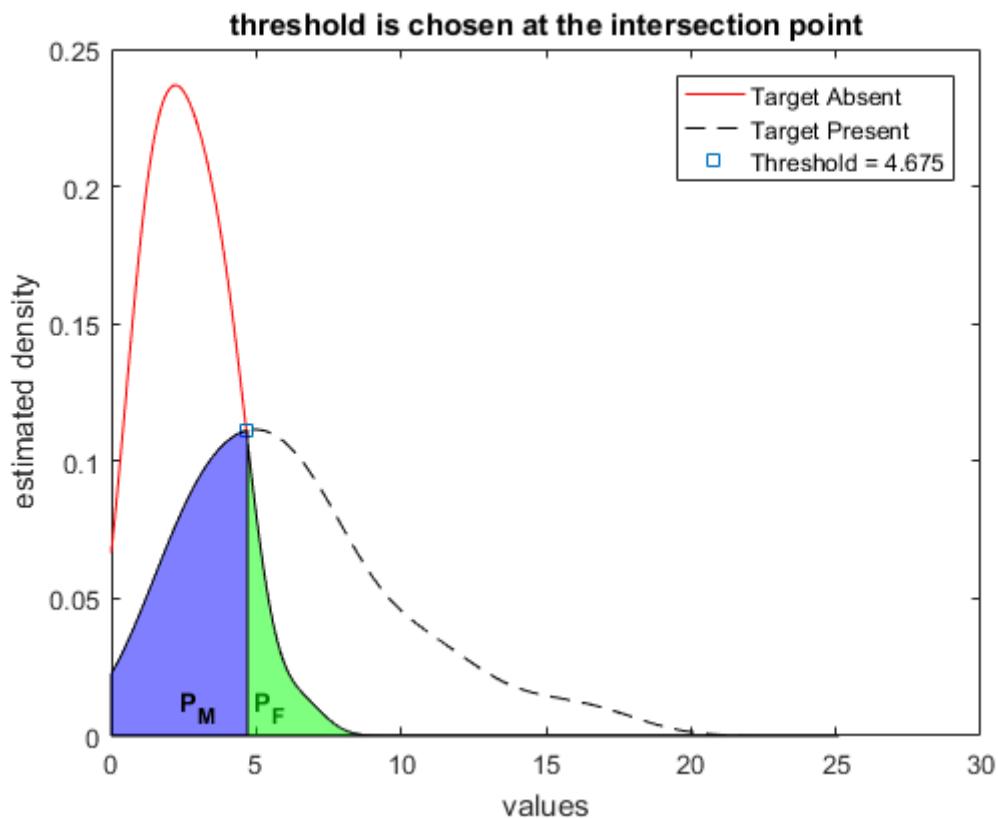
**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.875

**Probability of False Alarm = 1 - specificity = 0.125**

**Positive Predictive Value (PPV) = a posteriori probability = 0.80769**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 4.675**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
6.515	3.863	2.937	2.122	1.194	16.743	8.067	6.363	4.983	2.984
4.973	3.763	2.778	2.103	1.172	14.394	8.018	6.362	4.6	2.437
4.564	3.607	2.55	2.051	1.139	11.709	7.659	5.595	4.437	2.435
4.502	3.443	2.478	1.736	1.007	11.548	7.557	5.465	3.929	2.397
4.421	3.336	2.476	1.59	0.939	10.414	6.967	5.274	3.826	2.221
4.082	3.109	2.27	1.471	0.877	10.257	6.891	5.131	3.211	1.735
3.997	3.088	2.268	1.403	0.723					
3.931	2.971	2.217	1.265	0.35					

**Number of samples above threshold = 2**

False Alarm rate : 2 in 40

**Number of samples above threshold = 19**

Miss rate : 11 in 30

(c) P. M. Shankar

## Summary of the analysis Deitrich

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.675**

Probability of correct TARGET detection (sensitivity) = 0.63333

**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.90476**

Overall Accuracy = 0.81429

### Confusion Matrix (Threshold Value = 4.675)

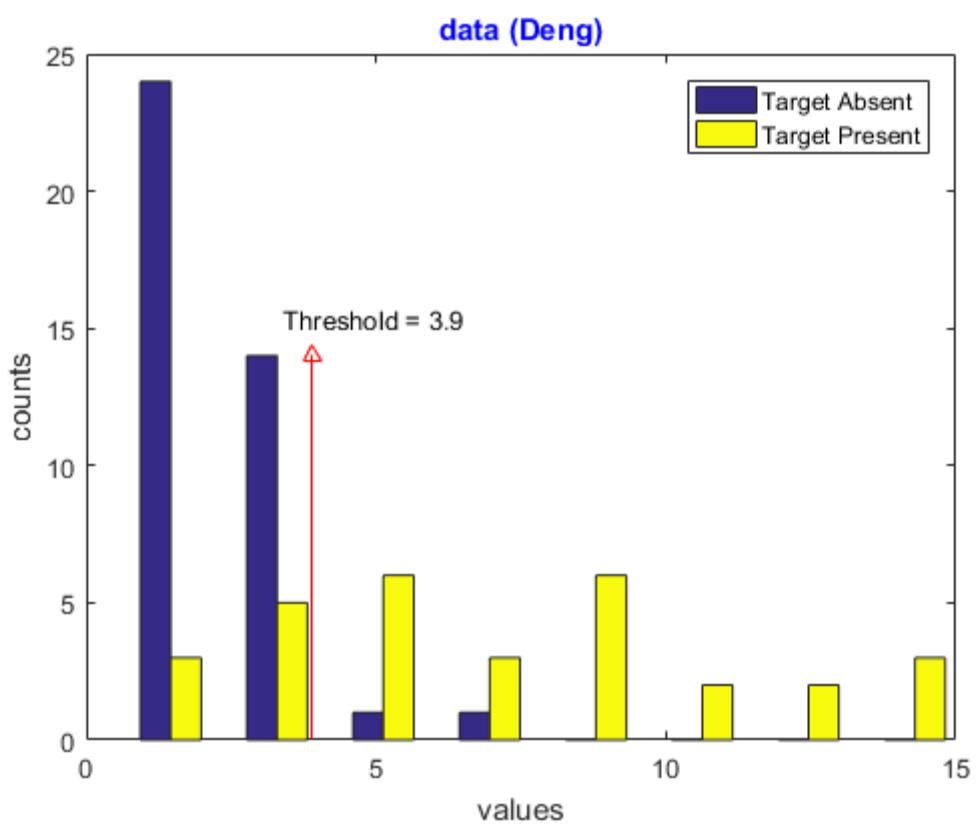
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	19	11	30
Total Counts	21	49	70

$$P_F = \frac{1}{20} \quad P_M = \frac{11}{30} \quad PPV = \frac{19}{21} \quad \text{err} = \frac{13}{70} \quad \text{acc} = \frac{57}{70}$$

## Summary of the analysis Deitrich

data (Deng)									
Target Absent					Target Present				
2.393	2.153	2.942	1.501	2.531	4.766	9.605	1.084	8.884	8.888
1.443	0.95	2.34	3.946	2.517	11.871	3.72	1.881	4.381	2.4
3.595	0.654	2.139	2.311	3.418	15.211	13.869	8.722	1.786	8.238
3.122	3.058	1.253	5.001	2.076	2.88	11.167	12.021	7.075	13.787
1.94	7.056	1.71	1.771	1.505	5.775	3.856	9.372	6.03	3.958
2.699	2.761	1.791	3.278	1.212	4.705	6.207	10.727	4.317	7.157
1.265	2.073	0.973	0.926	0.541					
1.628	2.468	2.249	3.596	1.332					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 3.9

Target Absent					Target Present				
<b>7.056</b>	3.058	2.34	1.791	1.265	<b>15.211</b>	<b>10.727</b>	<b>8.238</b>	<b>4.766</b>	3.72
<b>5.001</b>	2.942	2.311	1.771	1.253	<b>13.869</b>	<b>9.605</b>	<b>7.157</b>	<b>4.705</b>	2.88
<b>3.946</b>	2.761	2.249	1.71	1.212	<b>13.787</b>	<b>9.372</b>	<b>7.075</b>	<b>4.381</b>	2.4
3.596	2.699	2.153	1.628	0.973	<b>12.021</b>	<b>8.888</b>	<b>6.207</b>	<b>4.317</b>	1.881
3.595	2.531	2.139	1.505	0.95	<b>11.871</b>	<b>8.884</b>	<b>6.03</b>	<b>3.958</b>	1.786
3.418	2.517	2.076	1.501	0.926	<b>11.167</b>	<b>8.722</b>	<b>5.775</b>	3.856	1.084
3.278	2.468	2.073	1.443	0.654					
3.122	2.393	1.94	1.332	0.541					

Number of samples above threshold = 3

Number of samples above threshold = 23

False Alarm rate : 3 in 40

Miss rate : 7 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 3.9

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.9**

Probability of correct TARGET detection (sensitivity) = 0.76667

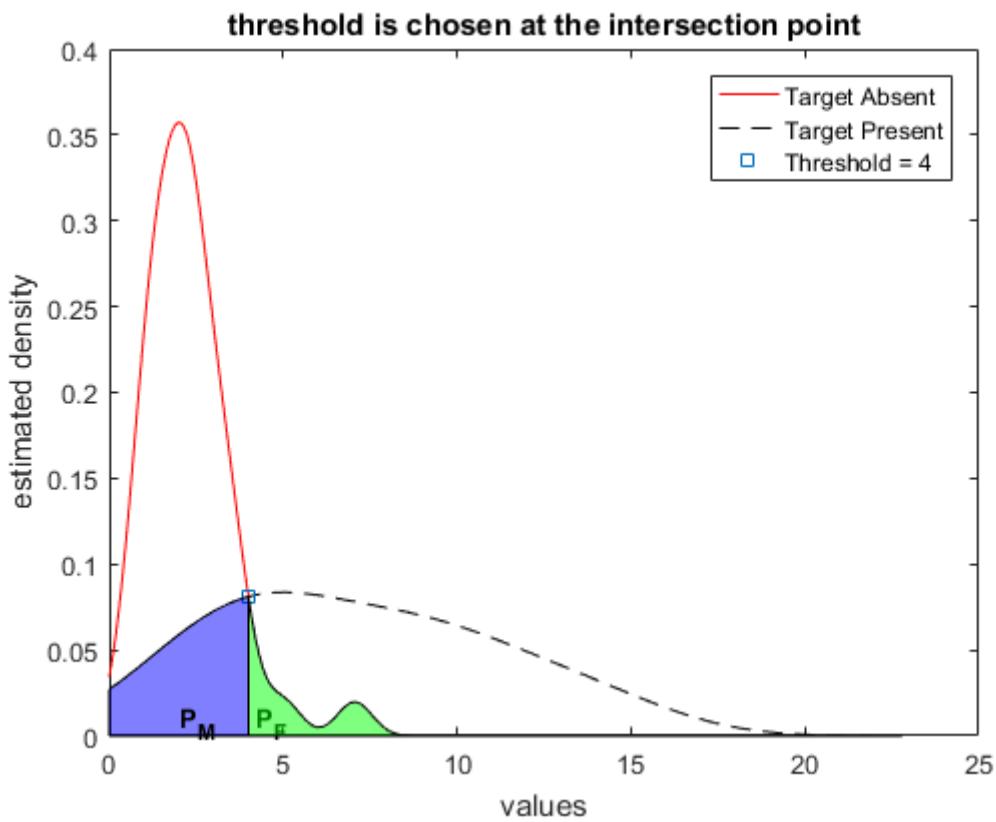
**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.88462**

Overall Accuracy = 0.85714



**Sorted and Partitioned Data : Threshold at 4  
Threshold is chosen at the intersection point**

Target Absent					Target Present				
7.056	3.058	2.34	1.791	1.265	15.211	10.727	8.238	4.766	3.72
5.001	2.942	2.311	1.771	1.253	13.869	9.605	7.157	4.705	2.88
3.946	2.761	2.249	1.71	1.212	13.787	9.372	7.075	4.381	2.4
3.596	2.699	2.153	1.628	0.973	12.021	8.888	6.207	4.317	1.881
3.595	2.531	2.139	1.505	0.95	11.871	8.884	6.03	3.958	1.786
3.418	2.517	2.076	1.501	0.926	11.167	8.722	5.775	3.856	1.084
3.278	2.468	2.073	1.443	0.654					
3.122	2.393	1.94	1.332	0.541					

**Number of samples above threshold = 2**

False Alarm rate : 2 in 40

**Number of samples above threshold = 22**

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis

Deng

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.91667**

Overall Accuracy = 0.85714

### Confusion Matrix (Threshold Value = 4)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	22	8	30
Total Counts	24	46	70

$$P_F = \frac{1}{20} \quad P_M = \frac{4}{15} \quad PPV = \frac{11}{12} \quad \text{err} = \frac{1}{7} \quad \text{acc} = \frac{6}{7}$$

## Summary of the analysis

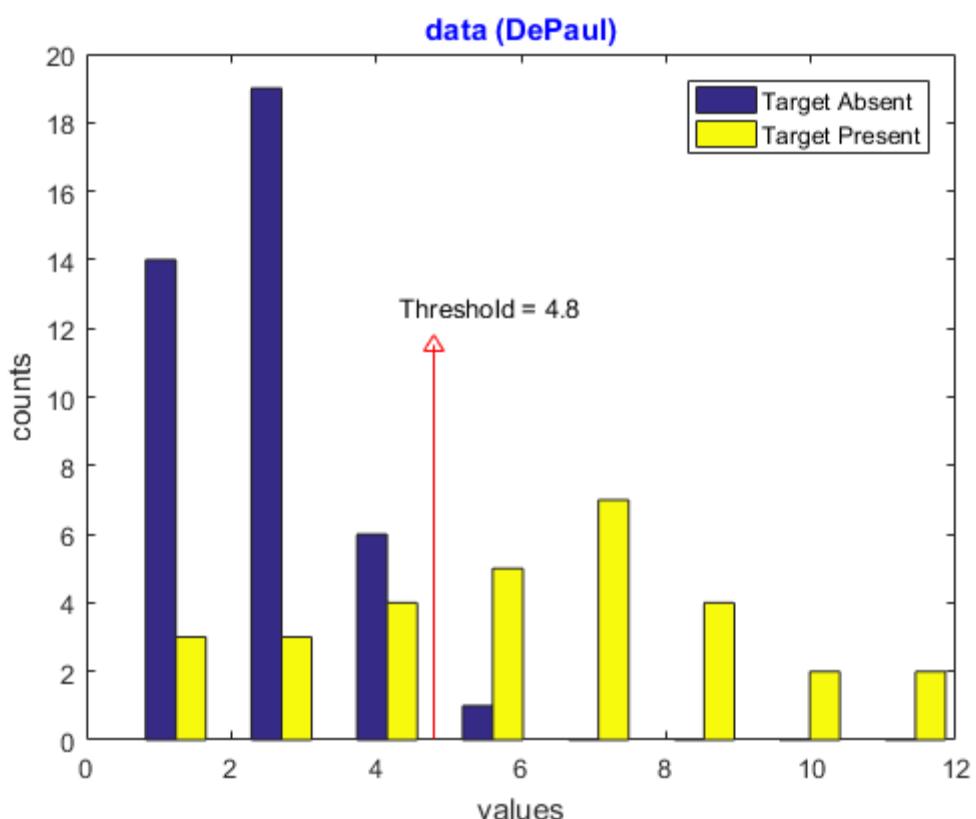
Deng

p m shankar

data (DePaul)

Target Absent					Target Present				
3.625	1.814	2.043	3.654	0.787	2.555	3.566	5.231	9.213	1.644
2.132	3.013	1.969	0.507	2.337	7.042	8.57	6.981	6.011	10.194
1.592	1.355	2.646	2.976	2.784	6.332	9.134	5.841	2.434	7.167
1.237	0.957	2.489	2.67	1.132	7.147	1.172	9.839	2.082	5.195
2.436	2.159	2.641	0.979	3.048	7.5	3.48	9.108	4.657	6.376
1.66	3.165	4.399	2.381	3.176	12.172	6.624	10.955	1.837	3.714
3.492	2.82	0.783	2.169	3.652					
1.833	3.568	5.084	1.3	1.618					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.8

Target Absent					Target Present				
<b>5.084</b>	3.165	2.641	2.043	1.3	<b>12.172</b>	<b>9.108</b>	<b>6.981</b>	<b>5.231</b>	2.555
4.399	3.048	2.489	1.969	1.237	<b>10.955</b>	<b>8.57</b>	<b>6.624</b>	<b>5.195</b>	2.434
3.654	3.013	2.436	1.833	1.132	<b>10.194</b>	<b>7.5</b>	<b>6.376</b>	4.657	2.082
3.652	2.976	2.381	1.814	0.979	<b>9.839</b>	<b>7.167</b>	<b>6.332</b>	3.714	1.837
3.625	2.82	2.337	1.66	0.957	<b>9.213</b>	<b>7.147</b>	<b>6.011</b>	3.566	1.644
3.568	2.784	2.169	1.618	0.787	<b>9.134</b>	<b>7.042</b>	<b>5.841</b>	3.48	1.172
3.492	2.67	2.159	1.592	0.783					
3.176	2.646	2.132	1.355	0.507					

**Number of samples above threshold = 1**

**Number of samples above threshold = 20**

False Alarm rate : 1 in 40

Miss rate : 10 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 4.8

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.8**

Probability of correct TARGET detection (sensitivity) = 0.66667

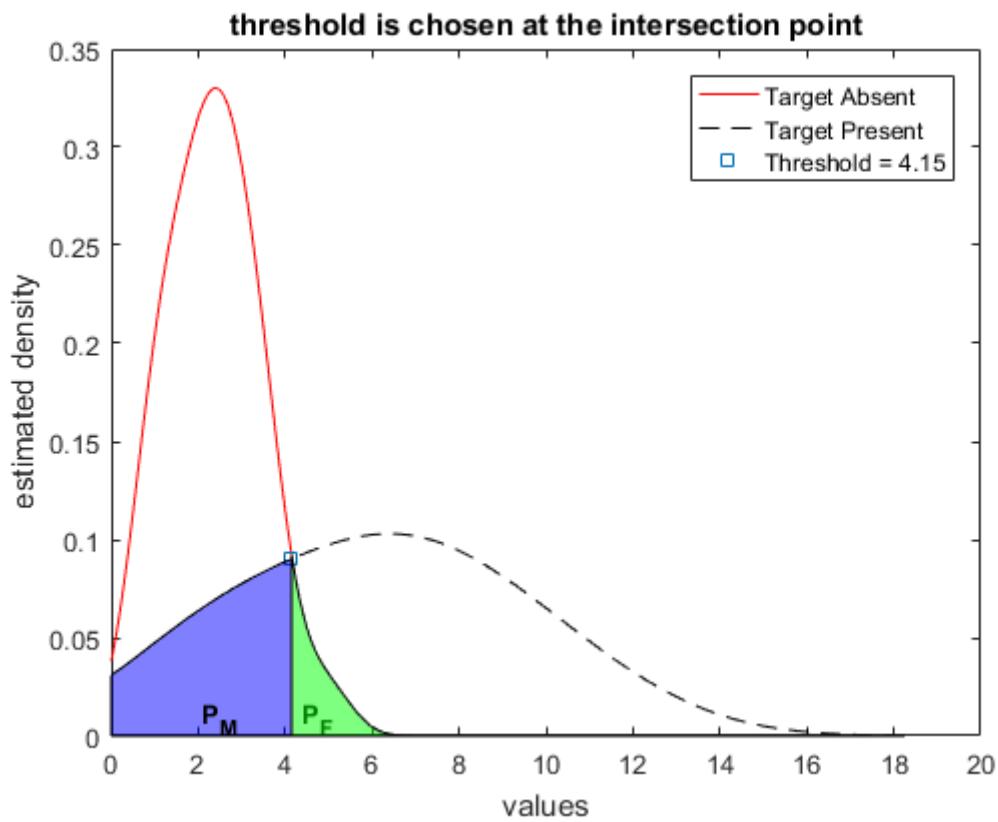
**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95238**

Overall Accuracy = 0.84286



**Sorted and Partitioned Data : Threshold at 4.15**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.084	3.165	2.641	2.043	1.3	12.172	9.108	6.981	5.231	2.555
4.399	3.048	2.489	1.969	1.237	10.955	8.57	6.624	5.195	2.434
3.654	3.013	2.436	1.833	1.132	10.194	7.5	6.376	4.657	2.082
3.652	2.976	2.381	1.814	0.979	9.839	7.167	6.332	3.714	1.837
3.625	2.82	2.337	1.66	0.957	9.213	7.147	6.011	3.566	1.644
3.568	2.784	2.169	1.618	0.787	9.134	7.042	5.841	3.48	1.172
3.492	2.67	2.159	1.592	0.783					
3.176	2.646	2.132	1.355	0.507					

Number of samples above threshold = 2

Number of samples above threshold = 21

False Alarm rate : 2 in 40

Miss rate : 9 in 30

(c) P. M. Shankar

## Summary of the analysis DePaul

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.15**

Probability of correct TARGET detection (sensitivity) = 0.7

**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.91304**

Overall Accuracy = 0.84286

### Confusion Matrix (Threshold Value = 4.15)

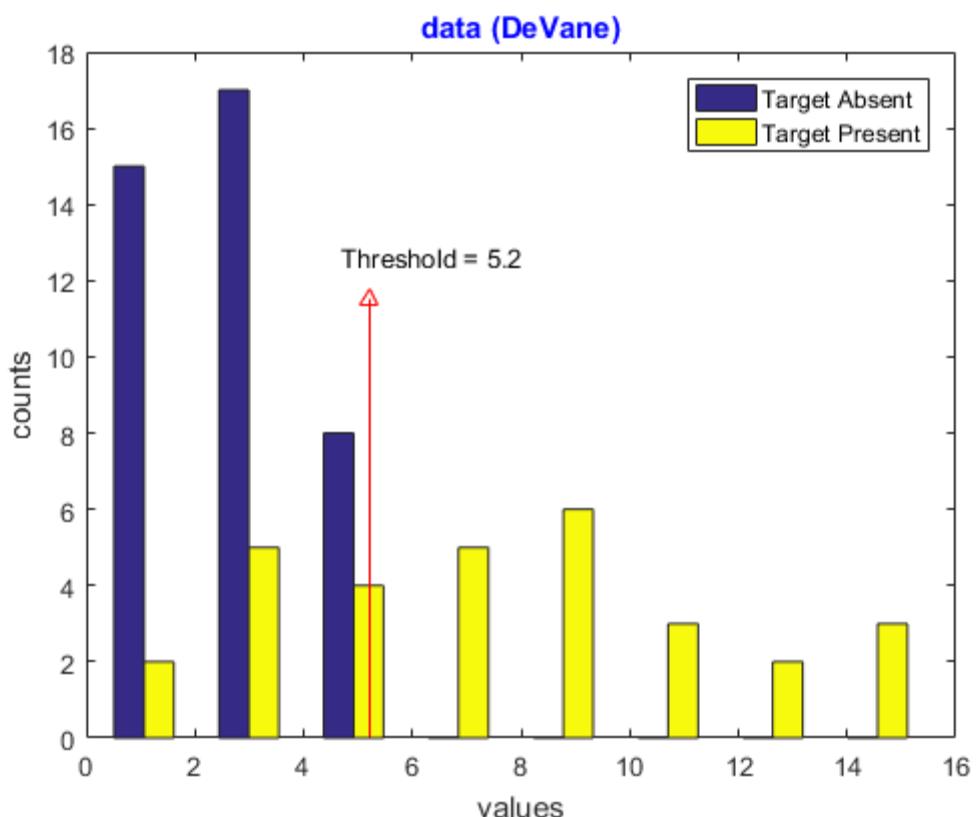
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	21	9	30
Total Counts	23	47	70

$$P_F = \frac{1}{20} \quad P_M = \frac{3}{10} \quad PPV = \frac{21}{23} \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

## Summary of the analysis DePaul

data (DeVane)									
Target Absent					Target Present				
1.333	4.596	1.137	2.142	3.342	9.691	15.056	8.034	11.854	7.465
4.381	3.44	3.181	1.26	1.918	5.674	15.526	6.26	9.628	10.609
1.259	2.247	4.072	5.596	0.881	0.337	13.072	3.505	4.039	14.804
0.883	4.044	0.676	1.324	2.963	10.148	6.796	8.339	5.215	7.334
3.14	1.75	1.076	2.266	2.357	8.332	0.99	10.989	5.83	2.412
0.099	1.115	1.499	2.11	0.823	3.823	6.622	2.329	8.157	3.628
4.298	2.728	2.486	2.498	3.98					
3.357	2.778	4.074	2.136	2.82					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.2

Target Absent					Target Present				
<b>5.596</b>	3.44	2.728	2.11	1.137	<b>15.526</b>	<b>10.609</b>	<b>8.157</b>	<b>6.26</b>	3.628
4.596	3.357	2.498	1.918	1.115	<b>15.056</b>	<b>10.148</b>	<b>8.034</b>	<b>5.83</b>	3.505
4.381	3.342	2.486	1.75	1.076	<b>14.804</b>	<b>9.691</b>	<b>7.465</b>	<b>5.674</b>	2.412
4.298	3.181	2.357	1.499	0.883	<b>13.072</b>	<b>9.628</b>	<b>7.334</b>	<b>5.215</b>	2.329
4.074	3.14	2.266	1.333	0.881	<b>11.854</b>	<b>8.339</b>	<b>6.796</b>	4.039	0.99
4.072	2.963	2.247	1.324	0.823	<b>10.989</b>	<b>8.332</b>	<b>6.622</b>	3.823	0.337
4.044	2.82	2.142	1.26	0.676					
3.98	2.778	2.136	1.259	0.099					

Number of samples above threshold = 1

Number of samples above threshold = 22

False Alarm rate : 1 in 40

Miss rate : 8 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.2

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.2**

Probability of correct TARGET detection (sensitivity) = 0.73333

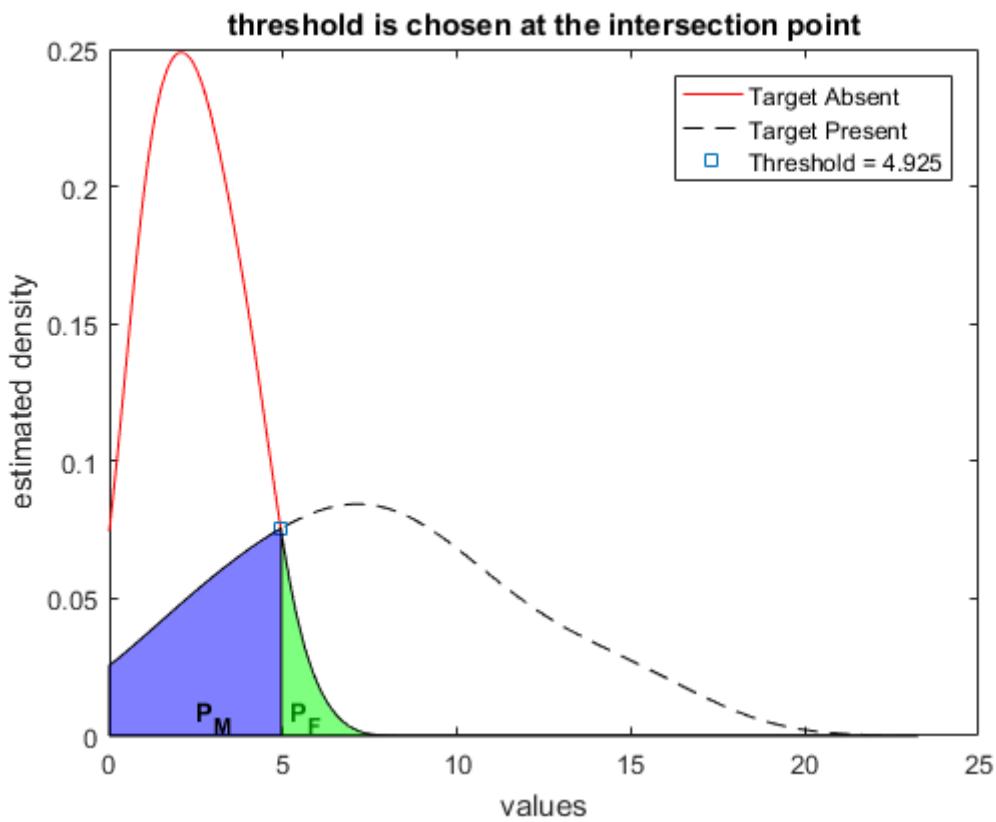
**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95652**

Overall Accuracy = 0.87143



**Sorted and Partitioned Data : Threshold at 4.925**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>5.596</b>	3.44	2.728	2.11	1.137	<b>15.526</b>	<b>10.609</b>	<b>8.157</b>	<b>6.26</b>	3.628
4.596	3.357	2.498	1.918	1.115	<b>15.056</b>	<b>10.148</b>	<b>8.034</b>	<b>5.83</b>	3.505
4.381	3.342	2.486	1.75	1.076	<b>14.804</b>	<b>9.691</b>	<b>7.465</b>	<b>5.674</b>	2.412
4.298	3.181	2.357	1.499	0.883	<b>13.072</b>	<b>9.628</b>	<b>7.334</b>	<b>5.215</b>	2.329
4.074	3.14	2.266	1.333	0.881	<b>11.854</b>	<b>8.339</b>	<b>6.796</b>	4.039	0.99
4.072	2.963	2.247	1.324	0.823	<b>10.989</b>	<b>8.332</b>	<b>6.622</b>	3.823	0.337
4.044	2.82	2.142	1.26	0.676					
3.98	2.778	2.136	1.259	0.099					

Number of samples above threshold = 1

Number of samples above threshold = 22

False Alarm rate : 1 in 40

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis DeVane

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.925**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95652**

Overall Accuracy = 0.87143

### Confusion Matrix (Threshold Value = 4.925)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	22	8	30
Total Counts	23	47	70

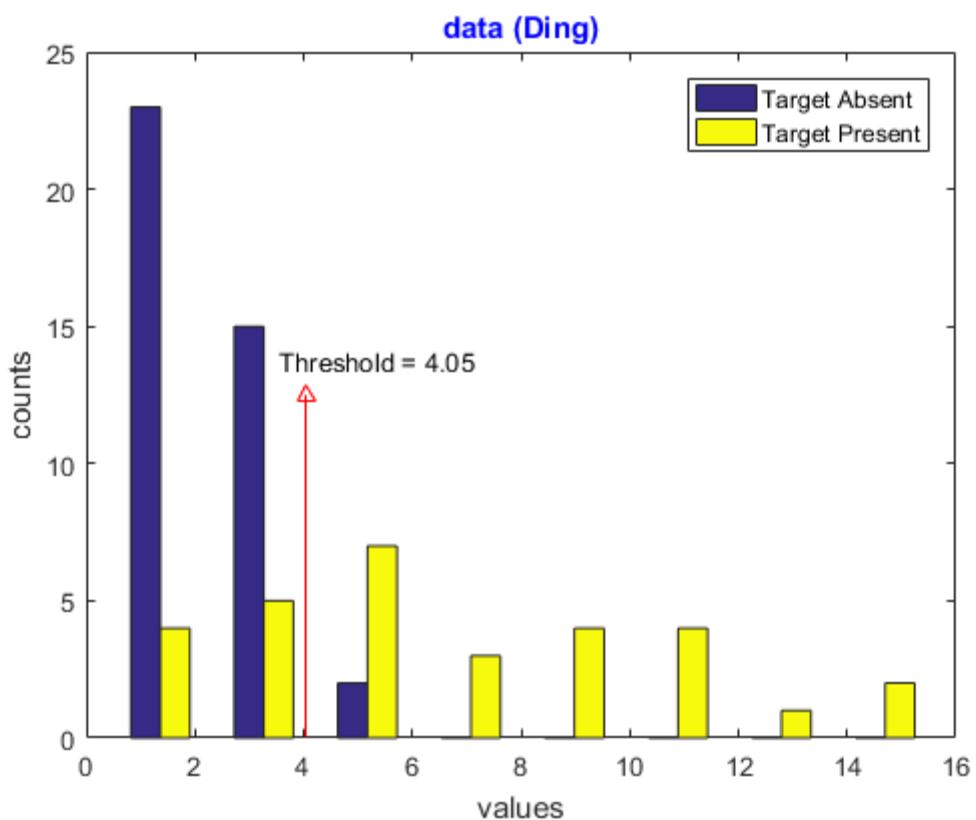
$$P_F = \frac{1}{40} \quad P_M = \frac{4}{15} \quad PPV = \frac{22}{23} \quad \text{err} = \frac{9}{70} \quad \text{acc} = \frac{61}{70}$$

## Summary of the analysis DeVane

data (Ding)

Target Absent					Target Present				
3.101	3.296	3.164	4.489	5.115	9.282	7.211	10.034	2.679	9.173
0.549	2.359	2.79	1.736	1.571	5.679	15.347	15.652	2.013	7.329
3.17	3.822	0.616	2.059	1.956	9.313	4.256	11.218	4.455	4.535
2.95	1.671	3.018	1.72	2.792	1.941	3.379	4.201	6.574	4.734
2.854	1.713	1.479	3.244	0.41	5.368	3.016	12.808	0.983	6.093
1.269	2.128	3.081	4.18	1.56	9.964	1.893	9.471	4.026	10.181
2.187	1.934	1.692	1.748	1.994					
0.964	1.302	2.57	0.825	1.285					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.05

Target Absent					Target Present				
<b>5.115</b>	3.101	2.359	1.736	1.302	<b>15.652</b>	<b>9.964</b>	<b>7.211</b>	<b>4.535</b>	3.016
<b>4.489</b>	3.081	2.187	1.72	1.285	<b>15.347</b>	<b>9.471</b>	<b>6.574</b>	<b>4.455</b>	2.679
<b>4.18</b>	3.018	2.128	1.713	1.269	<b>12.808</b>	<b>9.313</b>	<b>6.093</b>	<b>4.256</b>	2.013
3.822	2.95	2.059	1.692	0.964	<b>11.218</b>	<b>9.282</b>	<b>5.679</b>	<b>4.201</b>	1.941
3.296	2.854	1.994	1.671	0.825	<b>10.181</b>	<b>9.173</b>	<b>5.368</b>	4.026	1.893
3.244	2.792	1.956	1.571	0.616	<b>10.034</b>	<b>7.329</b>	<b>4.734</b>	3.379	0.983
3.17	2.79	1.934	1.56	0.549					
3.164	2.57	1.748	1.479	0.41					

Number of samples above threshold = 3

Number of samples above threshold = 22

False Alarm rate : 3 in 40

Miss rate : 8 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.05

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.05**

Probability of correct TARGET detection (sensitivity) = 0.73333

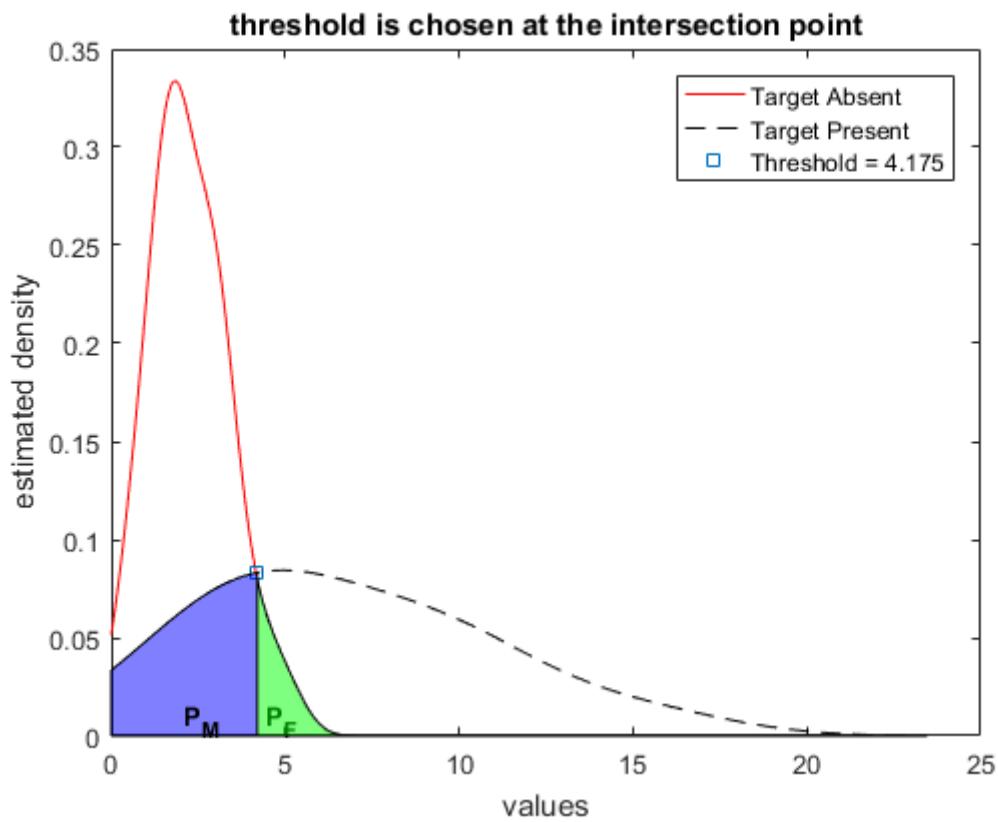
**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.88**

Overall Accuracy = 0.84286



**Sorted and Partitioned Data : Threshold at 4.175**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.115	3.101	2.359	1.736	1.302	15.652	9.964	7.211	4.535	3.016
4.489	3.081	2.187	1.72	1.285	15.347	9.471	6.574	4.455	2.679
4.18	3.018	2.128	1.713	1.269	12.808	9.313	6.093	4.256	2.013
3.822	2.95	2.059	1.692	0.964	11.218	9.282	5.679	4.201	1.941
3.296	2.854	1.994	1.671	0.825	10.181	9.173	5.368	4.026	1.893
3.244	2.792	1.956	1.571	0.616	10.034	7.329	4.734	3.379	0.983
3.17	2.79	1.934	1.56	0.549					
3.164	2.57	1.748	1.479	0.41					

**Number of samples above threshold = 3**

False Alarm rate : 3 in 40

**Number of samples above threshold = 22**

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis

Ding

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.175**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.88**

Overall Accuracy = 0.84286

## Confusion Matrix (Threshold Value = 4.175)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	22	8	30
Total Counts	25	45	70

$$P_F = \frac{3}{40} \quad P_M = \frac{4}{15} \quad PPV = \frac{22}{25} \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

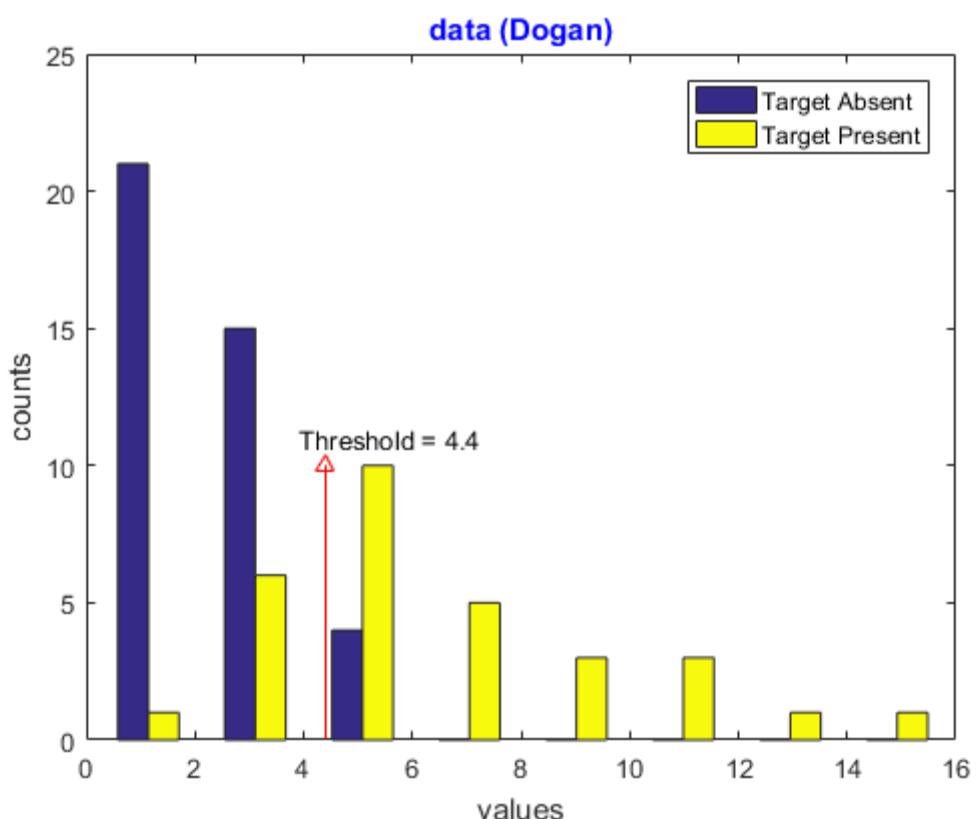
## Summary of the analysis

Ding

data (Dogan)

Target Absent					Target Present				
4.126	0.16	1.848	3.999	0.949	4.292	11.877	6.723	8.467	2.446
3.083	2.074	2.374	1.587	1.579	9.76	4.209	13.627	2.774	7.467
1.259	3.126	2.667	1.281	2.411	9.651	3.599	2.127	6.837	4.229
0.571	1.748	1.92	2.311	2.046	6.405	5.125	3.147	2.168	10.439
0.181	2.017	4.545	1.725	5.554	4.813	5.752	3.877	4.654	6.06
3.051	3.846	1.425	0.648	3.005	10.535	6.804	5.621	15.908	4.469
0.967	2.292	1.91	2.47	2.912					
0.689	3.073	4.298	2.755	1.981					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.4

Target Absent					Target Present				
<b>5.554</b>	3.073	2.374	1.91	1.259	<b>15.908</b>	<b>9.651</b>	<b>6.405</b>	<b>4.654</b>	3.599
<b>4.545</b>	3.051	2.311	1.848	0.967	<b>13.627</b>	<b>8.467</b>	<b>6.06</b>	<b>4.469</b>	3.147
4.298	3.005	2.292	1.748	0.949	<b>11.877</b>	<b>7.467</b>	<b>5.752</b>	4.292	2.774
4.126	2.912	2.074	1.725	0.689	<b>10.535</b>	<b>6.837</b>	<b>5.621</b>	4.229	2.446
3.999	2.755	2.046	1.587	0.648	<b>10.439</b>	<b>6.804</b>	<b>5.125</b>	4.209	2.168
3.846	2.667	2.017	1.579	0.571	<b>9.76</b>	<b>6.723</b>	<b>4.813</b>	3.877	2.127
3.126	2.47	1.981	1.425	0.181					
3.083	2.411	1.92	1.281	0.16					

Number of samples above threshold = 2

Number of samples above threshold = 20

False Alarm rate : 2 in 40

Miss rate : 10 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.4**

Probability of correct TARGET detection (sensitivity) = 0.66667

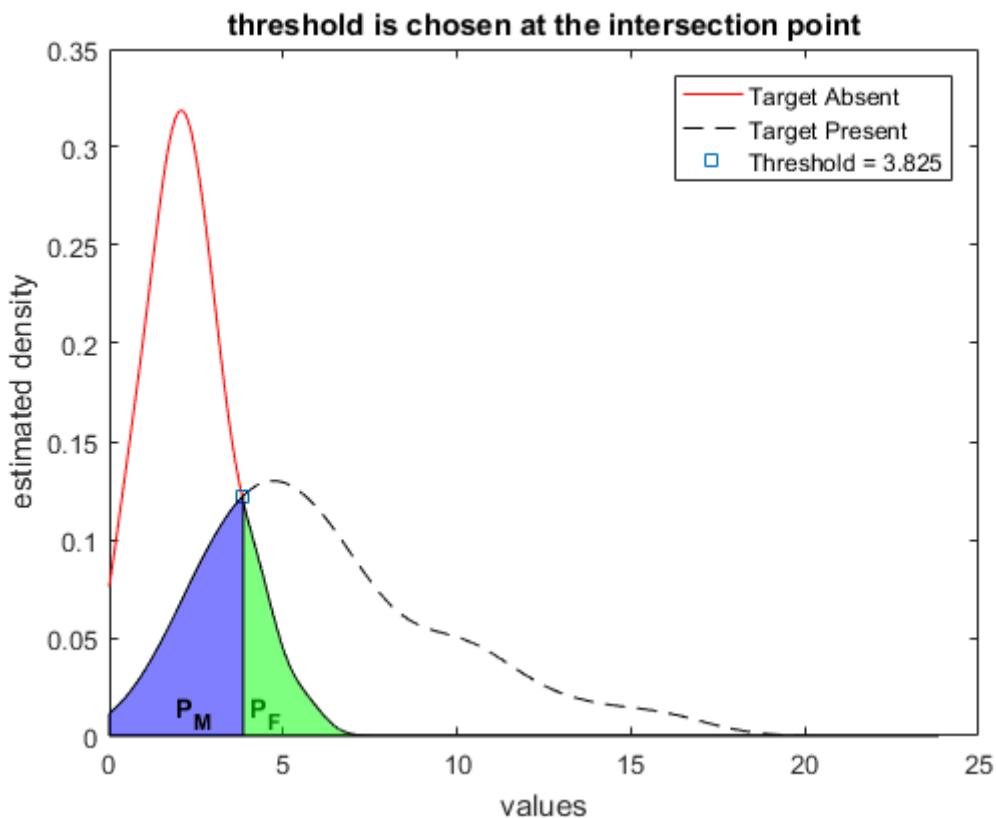
**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.90909**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 3.825**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.554	3.073	2.374	1.91	1.259	15.908	9.651	6.405	4.654	3.599
4.545	3.051	2.311	1.848	0.967	13.627	8.467	6.06	4.469	3.147
4.298	3.005	2.292	1.748	0.949	11.877	7.467	5.752	4.292	2.774
4.126	2.912	2.074	1.725	0.689	10.535	6.837	5.621	4.229	2.446
3.999	2.755	2.046	1.587	0.648	10.439	6.804	5.125	4.209	2.168
3.846	2.667	2.017	1.579	0.571	9.76	6.723	4.813	3.877	2.127
3.126	2.47	1.981	1.425	0.181					
3.083	2.411	1.92	1.281	0.16					

**Number of samples above threshold = 6**

**Number of samples above threshold = 24**

False Alarm rate : 6 in 40

Miss rate : 6 in 30

**(c) P. M. Shankar**

## Summary of the analysis Dogan

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.825**

Probability of correct TARGET detection (sensitivity) = 0.8

**Probability of Miss = 1 - sensitivity = 0.2**

Probability of correct NO TARGET detection (specificity) = 0.85

**Probability of False Alarm = 1 - specificity = 0.15**

**Positive Predictive Value (PPV) = a posteriori probability = 0.8**

Overall Accuracy = 0.82857

### Confusion Matrix (Threshold Value = 3.825)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	6	34	40
Target Present	24	6	30
Total Counts	30	40	70

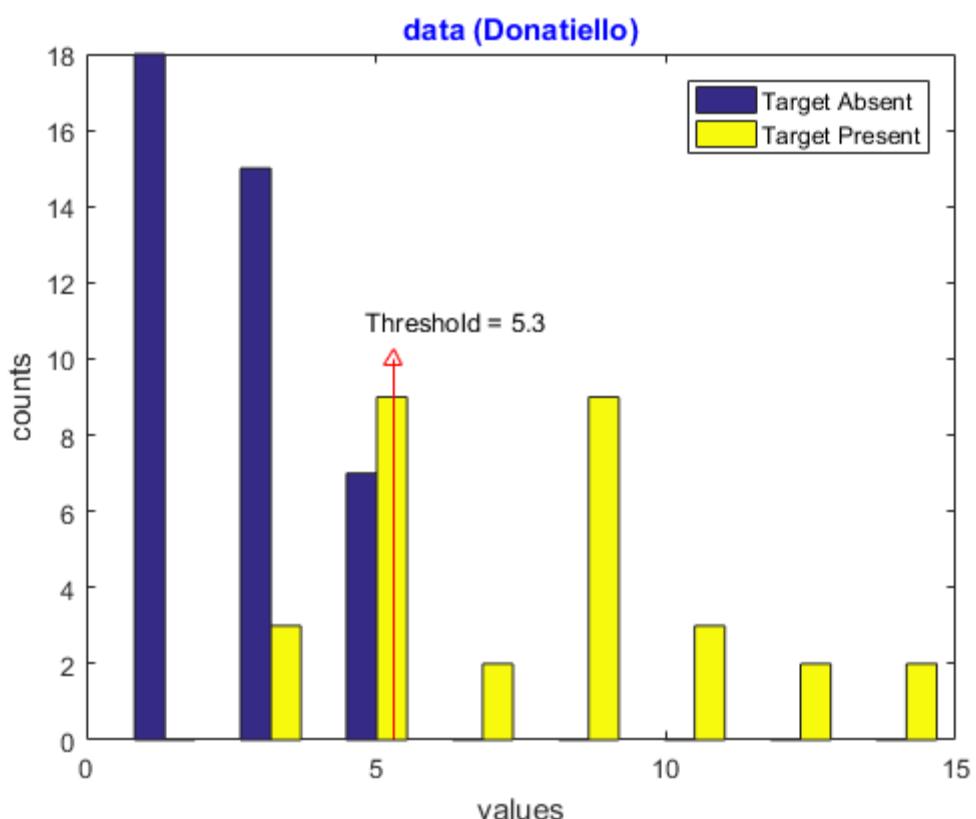
$$P_F = \frac{3}{20} \quad P_M = \frac{1}{5} \quad \text{PPV} = \frac{4}{5} \quad \text{err} = \frac{6}{35} \quad \text{acc} = \frac{29}{35}$$

## Summary of the analysis Dogan

data (Donatiello)

Target Absent					Target Present				
1.798	1.284	2.397	2.287	1.217	3.235	4.681	11.292	4.474	12.207
2.117	5.326	0.457	4.529	2.427	9.371	15.062	5.839	5.437	3.285
1.351	0.441	2.101	4.284	3.209	2.359	12.336	9.563	8.944	5.544
3.571	2.228	4.018	1.527	2.501	7.04	5.766	7.805	5.916	9.975
4.347	4.2	4.608	4.341	1.502	4.576	8.569	7.137	10.92	13.893
2.94	1.396	1.892	2.447	2.074	7.88	9.185	4.628	9.072	7.856
3.283	1.79	2.762	1.406	3.949					
4.079	2.863	2.179	2.465	1.938					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.3

Target Absent					Target Present				
<b>5.326</b>	4.018	2.501	2.117	1.502	<b>15.062</b>	<b>9.975</b>	<b>8.569</b>	<b>5.916</b>	4.628
4.608	3.949	2.465	2.101	1.406	<b>13.893</b>	<b>9.563</b>	<b>7.88</b>	<b>5.839</b>	4.576
4.529	3.571	2.447	2.074	1.396	<b>12.336</b>	<b>9.371</b>	<b>7.856</b>	<b>5.766</b>	4.474
4.347	3.283	2.427	1.938	1.351	<b>12.207</b>	<b>9.185</b>	<b>7.805</b>	<b>5.544</b>	3.285
4.341	3.209	2.397	1.892	1.284	<b>11.292</b>	<b>9.072</b>	<b>7.137</b>	<b>5.437</b>	3.235
4.284	2.94	2.287	1.798	1.217	<b>10.92</b>	<b>8.944</b>	<b>7.04</b>	4.681	2.359
4.2	2.863	2.228	1.79	0.457					
4.079	2.762	2.179	1.527	0.441					

Number of samples above threshold = 1

Number of samples above threshold = 23

False Alarm rate : 1 in 40

Miss rate : 7 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.3

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.3**

Probability of correct TARGET detection (sensitivity) = 0.76667

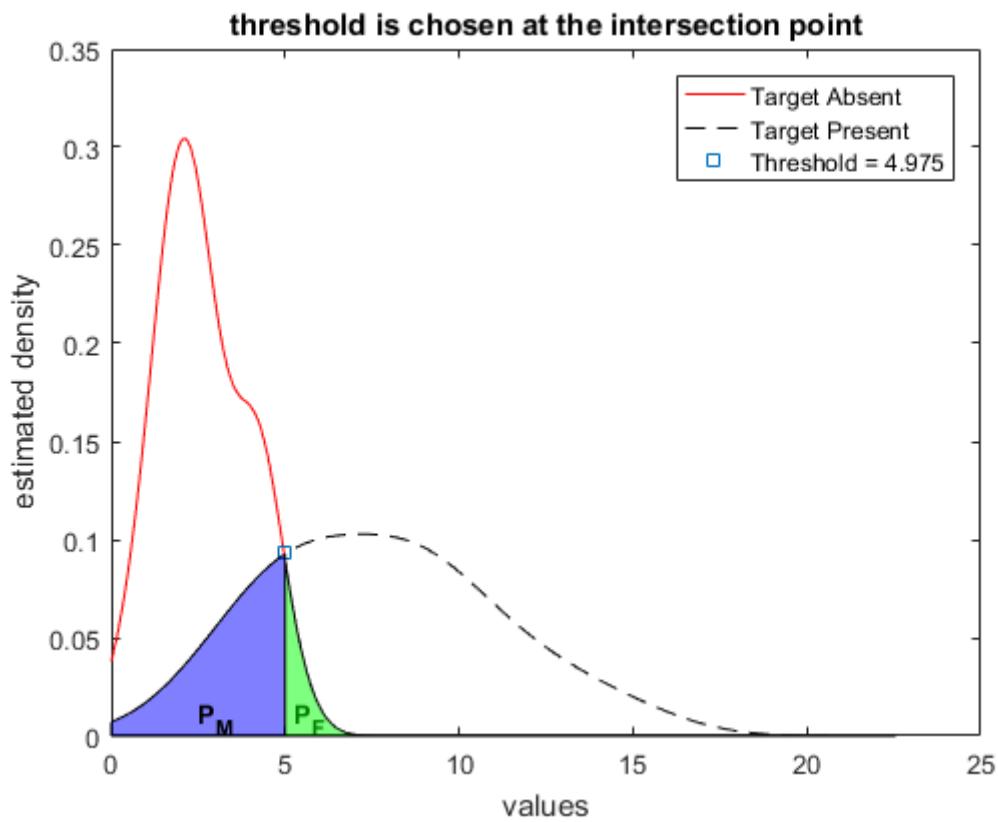
**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95833**

Overall Accuracy = 0.88571



**Sorted and Partitioned Data : Threshold at 4.975**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.326	4.018	2.501	2.117	1.502	15.062	9.975	8.569	5.916	4.628
4.608	3.949	2.465	2.101	1.406	13.893	9.563	7.88	5.839	4.576
4.529	3.571	2.447	2.074	1.396	12.336	9.371	7.856	5.766	4.474
4.347	3.283	2.427	1.938	1.351	12.207	9.185	7.805	5.544	3.285
4.341	3.209	2.397	1.892	1.284	11.292	9.072	7.137	5.437	3.235
4.284	2.94	2.287	1.798	1.217	10.92	8.944	7.04	4.681	2.359
4.2	2.863	2.228	1.79	0.457					
4.079	2.762	2.179	1.527	0.441					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 23**

Miss rate : 7 in 30

(c) P. M. Shankar

## Summary of the analysis Donatiello

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.975**

Probability of correct TARGET detection (sensitivity) = 0.76667

**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95833**

Overall Accuracy = 0.88571

### Confusion Matrix (Threshold Value = 4.975)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	23	7	30
Total Counts	24	46	70

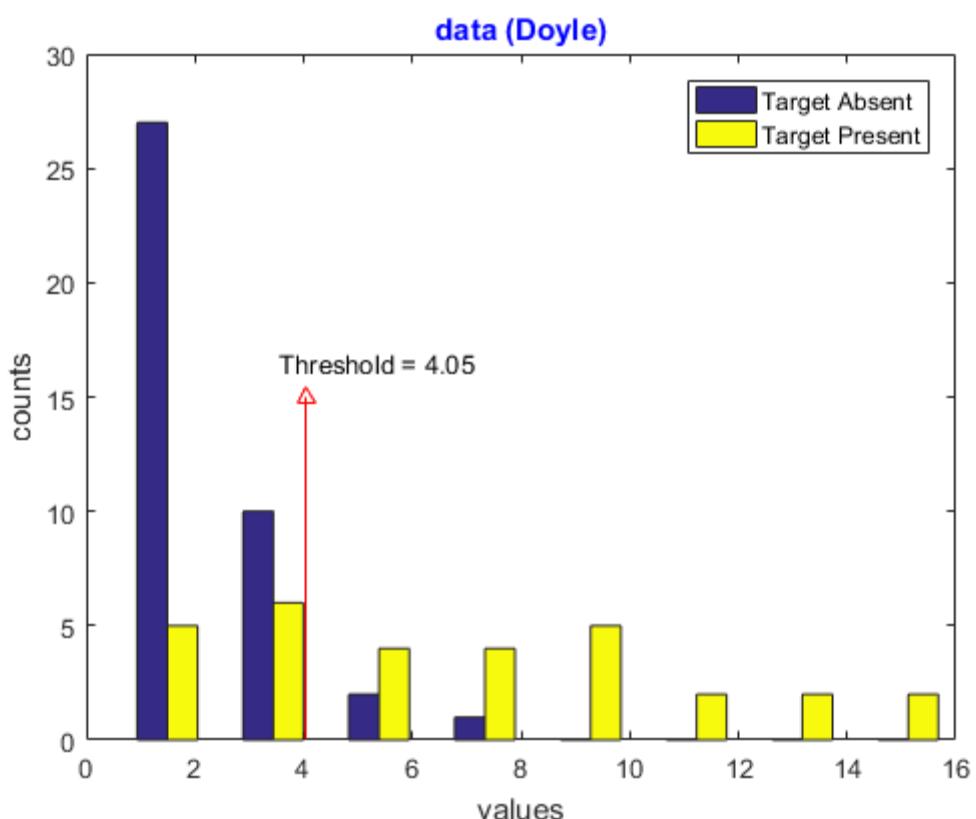
$$P_F = \frac{1}{40} \quad P_M = \frac{7}{30} \quad PPV = \frac{23}{24} \quad \text{err} = \frac{4}{35} \quad \text{acc} = \frac{31}{35}$$

## Summary of the analysis Donatiello

data (Doyle)

Target Absent					Target Present				
1.306	1.365	2.555	2.45	6.438	2.488	2.995	6.824	9.965	4.334
0.52	1.132	2.049	2.423	1.632	8.581	14.337	6.822	3.267	12.101
2.896	1.648	0.89	1.909	1.682	4.763	5.714	0.74	4.514	6.935
1.464	5.249	2.556	2.306	1.664	12.886	16.097	13.543	1.949	1.245
2.139	3.485	2.549	1.368	0.693	1.637	1.788	2.761	8.906	10.988
2.876	2.236	3.279	2.06	1.464	3.426	9.922	9.311	7.927	5.251
1.276	3.7	4.134	2.736	1.58					
1.69	1.637	2.395	4.937	2.188					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.05

Target Absent					Target Present				
<b>6.438</b>	2.876	2.306	1.682	1.368	<b>16.097</b>	<b>9.965</b>	<b>6.935</b>	<b>4.514</b>	2.488
<b>5.249</b>	2.736	2.236	1.664	1.365	<b>14.337</b>	<b>9.922</b>	<b>6.824</b>	<b>4.334</b>	1.949
<b>4.937</b>	2.556	2.188	1.648	1.306	<b>13.543</b>	<b>9.311</b>	<b>6.822</b>	3.426	1.788
<b>4.134</b>	2.555	2.139	1.637	1.276	<b>12.886</b>	<b>8.906</b>	<b>5.714</b>	3.267	1.637
3.7	2.549	2.06	1.632	1.132	<b>12.101</b>	<b>8.581</b>	<b>5.251</b>	2.995	1.245
3.485	2.45	2.049	1.58	0.89	<b>10.988</b>	<b>7.927</b>	<b>4.763</b>	2.761	0.74
3.279	2.423	1.909	1.464	0.693					
2.896	2.395	1.69	1.464	0.52					

Number of samples above threshold = 4

Number of samples above threshold = 20

False Alarm rate : 4 in 40

Miss rate : 10 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.05

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.05**

Probability of correct TARGET detection (sensitivity) = 0.66667

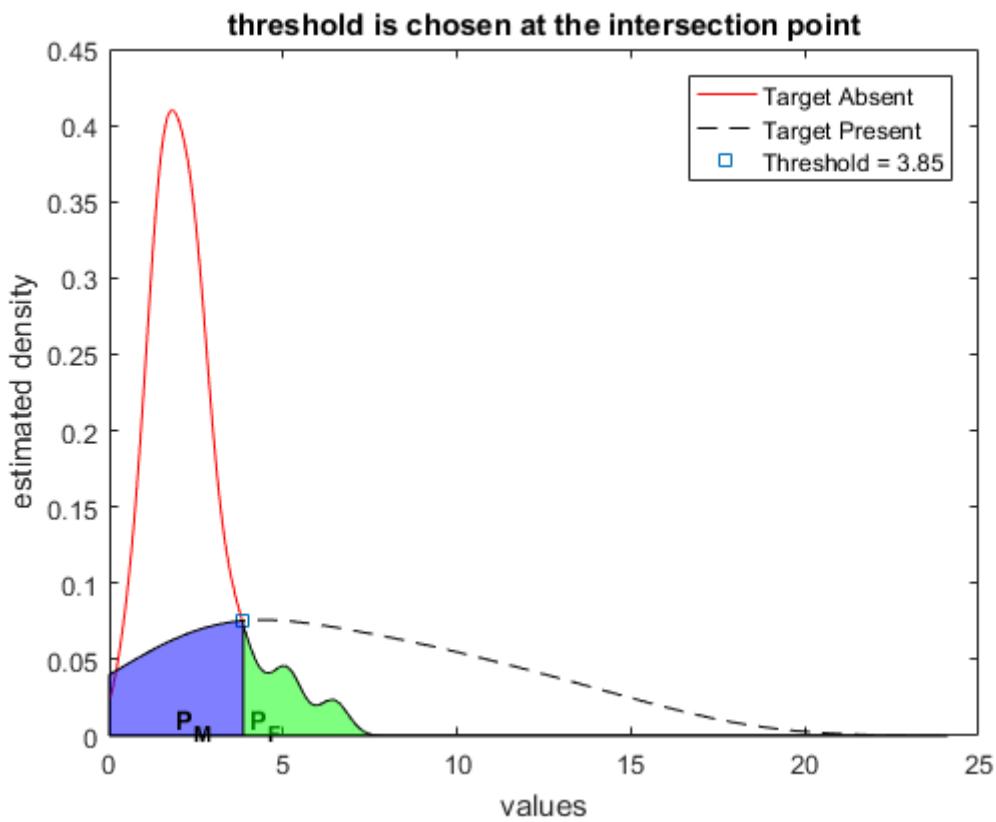
**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.83333**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 3.85**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
6.438	2.876	2.306	1.682	1.368	16.097	9.965	6.935	4.514	2.488
5.249	2.736	2.236	1.664	1.365	14.337	9.922	6.824	4.334	1.949
4.937	2.556	2.188	1.648	1.306	13.543	9.311	6.822	3.426	1.788
4.134	2.555	2.139	1.637	1.276	12.886	8.906	5.714	3.267	1.637
3.7	2.549	2.06	1.632	1.132	12.101	8.581	5.251	2.995	1.245
3.485	2.45	2.049	1.58	0.89	10.988	7.927	4.763	2.761	0.74
3.279	2.423	1.909	1.464	0.693					
2.896	2.395	1.69	1.464	0.52					

**Number of samples above threshold = 4**

False Alarm rate : 4 in 40

**Number of samples above threshold = 20**

Miss rate : 10 in 30

(c) P. M. Shankar

## Summary of the analysis

Doyle

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.85**

Probability of correct TARGET detection (sensitivity) = 0.66667

**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.83333**

Overall Accuracy = 0.8

### Confusion Matrix (Threshold Value = 3.85)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	20	10	30
Total Counts	24	46	70

$$P_F = \frac{1}{10} \quad P_M = \frac{1}{3} \quad \text{PPV} = \frac{5}{6} \quad \text{err} = \frac{1}{5} \quad \text{acc} = \frac{4}{5}$$

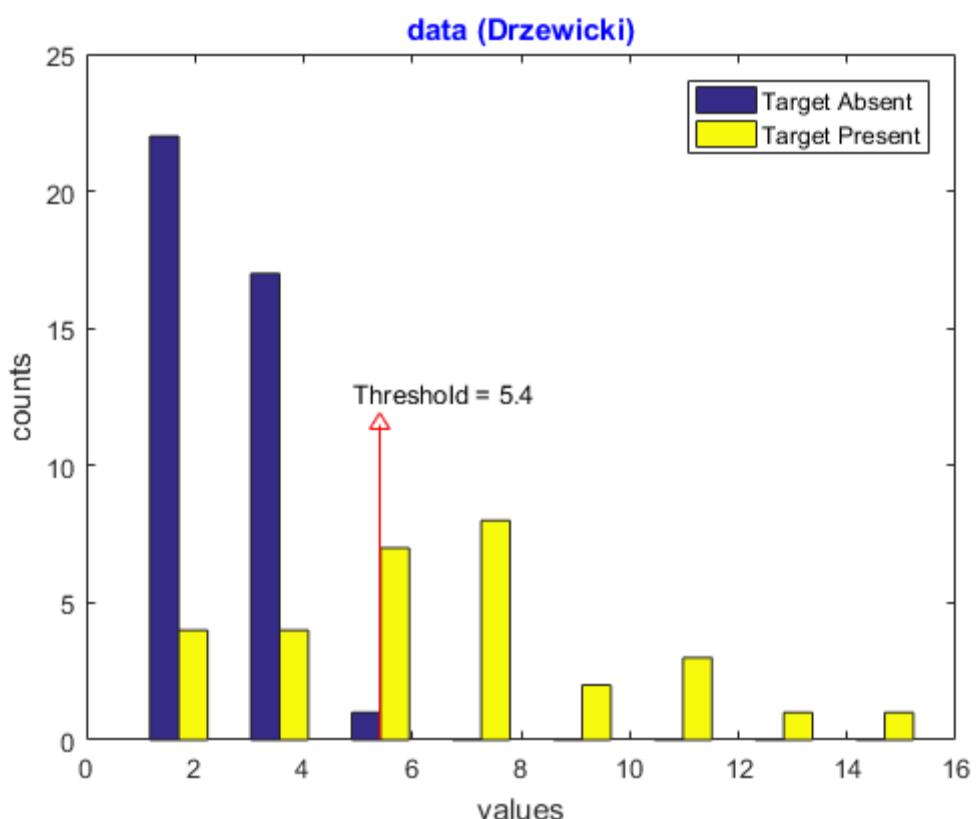
## Summary of the analysis

Doyle

data (Drzewicki)

Target Absent					Target Present				
3.701	3.817	3.467	2.199	2.201	7.218	10.632	4.778	7.063	7.355
1.443	2.152	0.823	0.805	3.443	4.09	11.374	1.815	4.877	7.22
3.466	2.612	2.096	2.503	4.474	3.779	4.641	3.441	15.619	1.97
1.094	5.253	0.789	0.775	1.446	12.884	1.565	4.995	8.189	6.795
3.117	1.359	2.838	2.778	2.69	7.036	11.473	2.245	6.238	6.496
2.159	3.559	1.569	2.344	2.703	9.834	9.484	5.825	3.933	6.289
2.024	1.095	2.219	4.243	4.081					
2.182	3.011	3.964	1.464	3.585					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.4

Target Absent					Target Present				
5.253	3.559	2.703	2.182	1.443	15.619	9.484	7.036	4.995	3.779
4.474	3.467	2.69	2.159	1.359	12.884	8.189	6.795	4.877	3.441
4.243	3.466	2.612	2.152	1.095	11.473	7.355	6.496	4.778	2.245
4.081	3.443	2.503	2.096	1.094	11.374	7.22	6.289	4.641	1.97
3.964	3.117	2.344	2.024	0.823	10.632	7.218	6.238	4.09	1.815
3.817	3.011	2.219	1.569	0.805	9.834	7.063	5.825	3.933	1.565
3.701	2.838	2.201	1.464	0.789					
3.585	2.778	2.199	1.446	0.775					

Number of samples above threshold = 0

Number of samples above threshold = 18

False Alarm rate : 0 in 40

Miss rate : 12 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.4**

Probability of correct TARGET detection (sensitivity) = 0.6

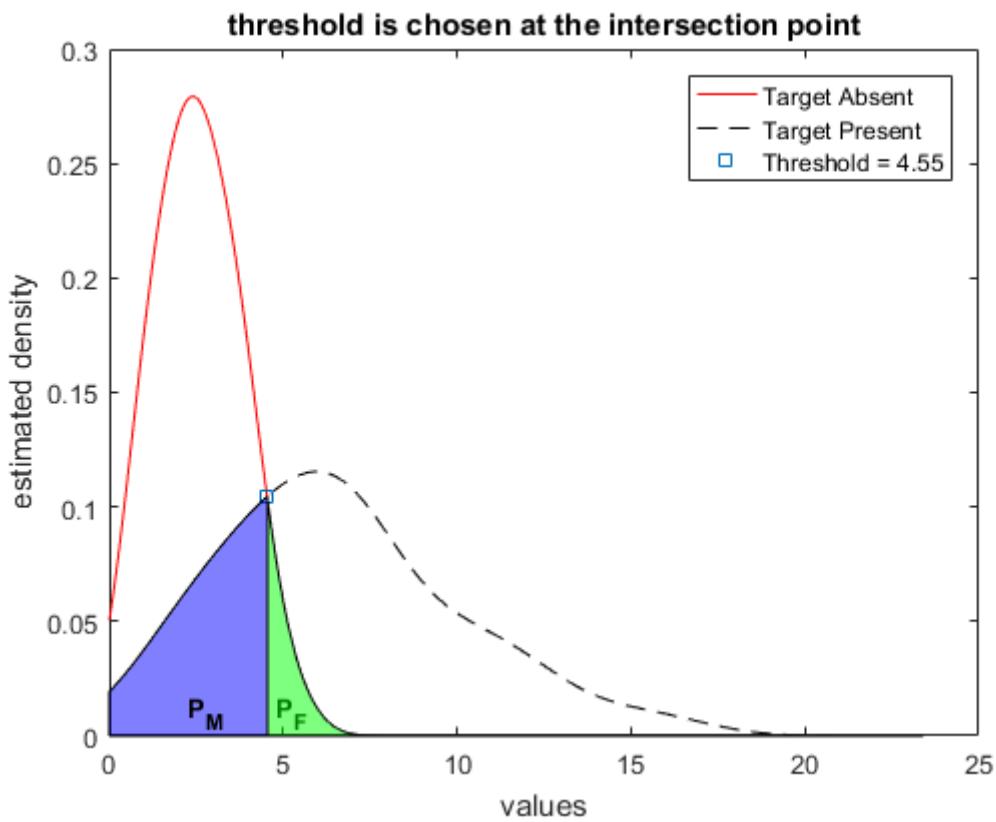
**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 4.55**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.253	3.559	2.703	2.182	1.443	15.619	9.484	7.036	4.995	3.779
4.474	3.467	2.69	2.159	1.359	12.884	8.189	6.795	4.877	3.441
4.243	3.466	2.612	2.152	1.095	11.473	7.355	6.496	4.778	2.245
4.081	3.443	2.503	2.096	1.094	11.374	7.22	6.289	4.641	1.97
3.964	3.117	2.344	2.024	0.823	10.632	7.218	6.238	4.09	1.815
3.817	3.011	2.219	1.569	0.805	9.834	7.063	5.825	3.933	1.565
3.701	2.838	2.201	1.464	0.789					
3.585	2.778	2.199	1.446	0.775					

Number of samples above threshold = 1

Number of samples above threshold = 22

False Alarm rate : 1 in 40

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis Drzewicki

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.55**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95652**

Overall Accuracy = 0.87143

**Confusion Matrix (Threshold Value = 4.55)**

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	22	8	30
Total Counts	23	47	70

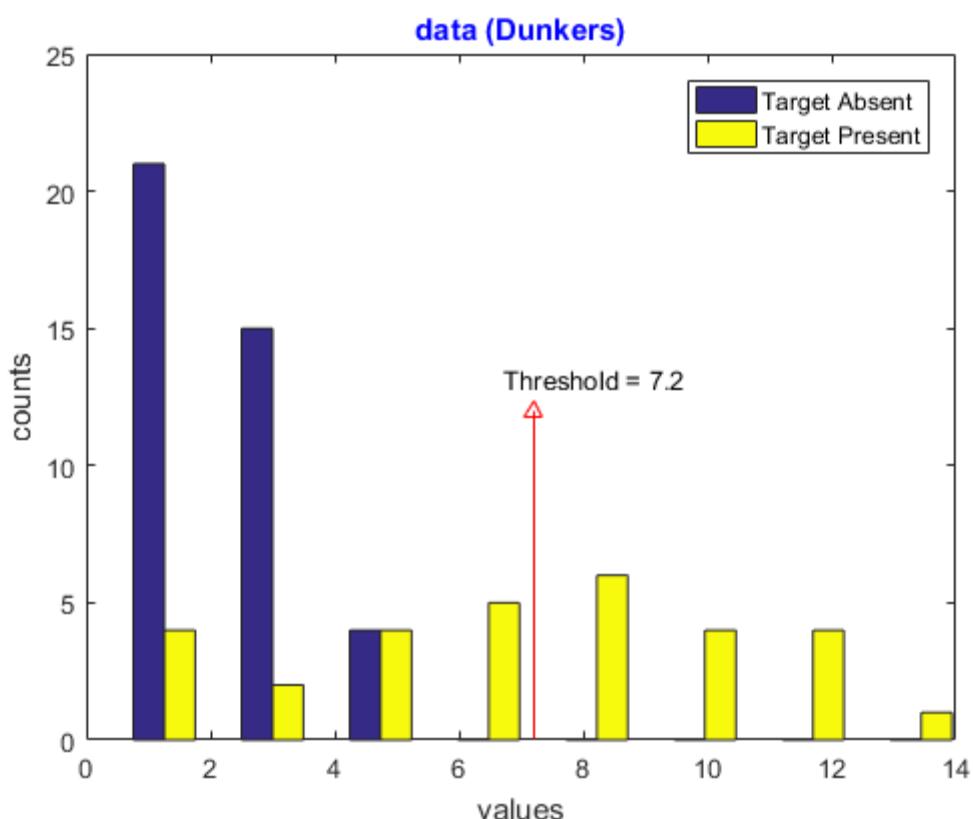
$$P_F = \frac{1}{40} \quad P_M = \frac{4}{15} \quad PPV = \frac{22}{23} \quad \text{err} = \frac{9}{70} \quad \text{acc} = \frac{61}{70}$$

## Summary of the analysis Drzewicki

data (Dunkers)

Target Absent					Target Present				
0.399	1.495	2.56	0.667	3.155	10.263	6.457	0.728	0.793	4.292
1.995	4.402	1.653	1.083	4.395	11.268	4.171	8.679	1.132	4.076
0.387	3.093	3.531	1.749	3.505	9.691	8.816	8.631	7.424	7.018
4.541	0.983	0.663	4.148	2.27	11.59	14.313	8.722	5.474	9.544
2.809	0.586	2.657	3.386	3.464	6.476	3.438	5.638	1.651	11.674
2.724	1.802	1.695	1.537	2.239	11.17	6.625	10.017	3.338	7.745
1.588	1.704	1.37	3.425	2.703					
0.853	2.325	1.897	1.566	0.606					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 7.2

Target Absent					Target Present				
4.541	3.386	2.325	1.695	0.983	14.313	10.017	8.631	6.457	3.438
4.402	3.155	2.27	1.653	0.853	11.674	9.691	7.745	5.638	3.338
4.395	3.093	2.239	1.588	0.667	11.59	9.544	7.424	5.474	1.651
4.148	2.809	1.995	1.566	0.663	11.268	8.816	7.018	4.292	1.132
3.531	2.724	1.897	1.537	0.606	11.17	8.722	6.625	4.171	0.793
3.505	2.703	1.802	1.495	0.586	10.263	8.679	6.476	4.076	0.728
3.464	2.657	1.749	1.37	0.399					
3.425	2.56	1.704	1.083	0.387					

**Number of samples above threshold = 0**

**Number of samples above threshold = 15**

False Alarm rate : 0 in 40

Miss rate : 15 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 7.2

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 7.2**

Probability of correct TARGET detection (sensitivity) = 0.5

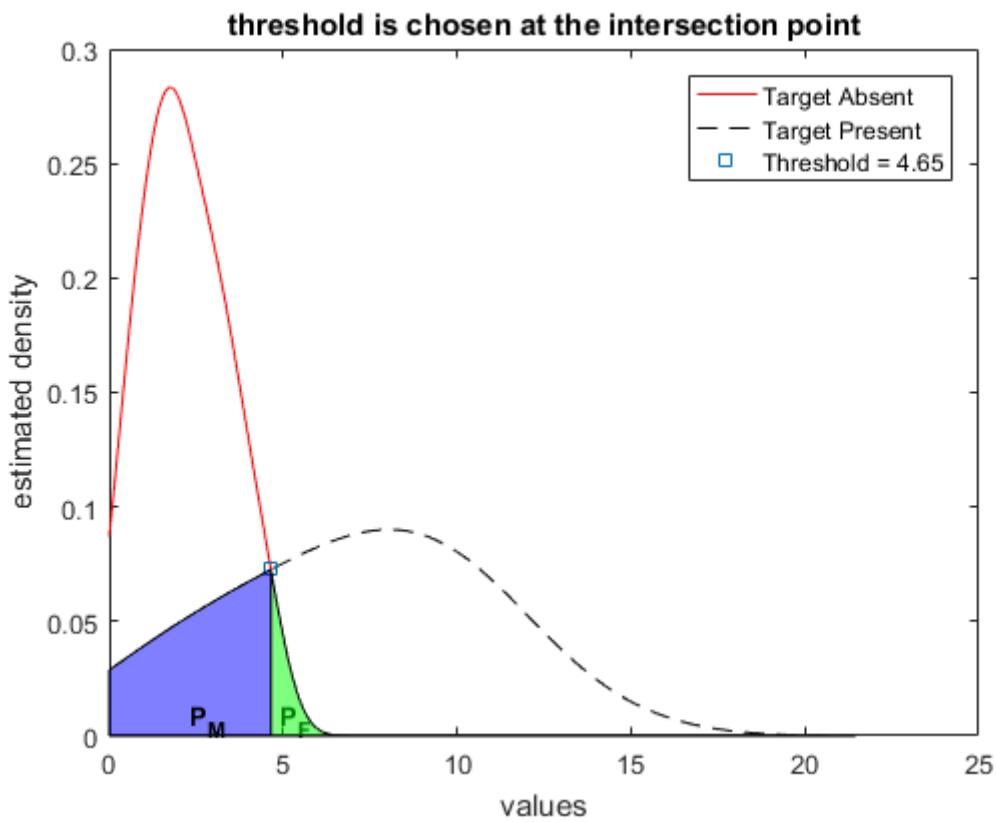
**Probability of Miss = 1 - sensitivity = 0.5**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.78571



**Sorted and Partitioned Data : Threshold at 4.65**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.541	3.386	2.325	1.695	0.983	14.313	10.017	8.631	6.457	3.438
4.402	3.155	2.27	1.653	0.853	11.674	9.691	7.745	5.638	3.338
4.395	3.093	2.239	1.588	0.667	11.59	9.544	7.424	5.474	1.651
4.148	2.809	1.995	1.566	0.663	11.268	8.816	7.018	4.292	1.132
3.531	2.724	1.897	1.537	0.606	11.17	8.722	6.625	4.171	0.793
3.505	2.703	1.802	1.495	0.586	10.263	8.679	6.476	4.076	0.728
3.464	2.657	1.749	1.37	0.399					
3.425	2.56	1.704	1.083	0.387					

**Number of samples above threshold = 0**

**Number of samples above threshold = 21**

False Alarm rate : 0 in 40

Miss rate : 9 in 30

**(c) P. M. Shankar**

## Summary of the analysis Dunkers

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.65**

Probability of correct TARGET detection (sensitivity) = 0.7

**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.87143

### Confusion Matrix (Threshold Value = 4.65)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	0	40	40
Target Present	21	9	30
Total Counts	21	49	70

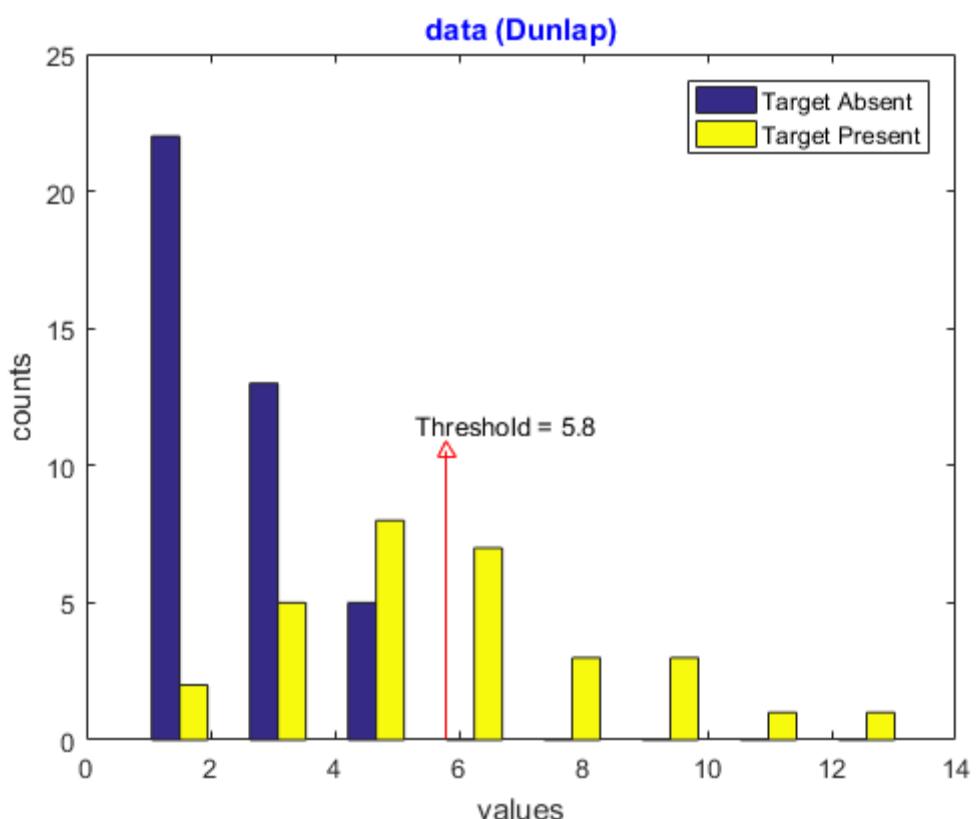
$$P_F = 0 \quad P_M = \frac{3}{10} \quad \text{PPV} = 1 \quad \text{err} = \frac{9}{70} \quad \text{acc} = \frac{61}{70}$$

## Summary of the analysis Dunkers

data (Dunlap)

Target Absent					Target Present				
1.94	2.057	2.248	1.472	4.502	13.353	4.987	2.576	9.12	7.324
1.942	1.219	3.793	3.427	2.249	4.28	5.894	2.764	5.94	8.794
4.203	2.931	4.565	3.756	3.773	9.813	2.333	6.754	6.099	4.123
1.239	3.393	1.033	2.537	1.066	4.97	6.831	3.078	4.992	7.623
2.093	2.041	1.196	3.168	2.699	3.237	5.34	6.952	11.152	6.534
1.649	1.51	2.106	2.908	2.637	5.229	2.059	2.131	5.061	8.401
2.505	0.716	2.286	1.99	3.338					
1.193	1.91	3.897	4.116	1.953					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.8

Target Absent					Target Present				
4.565	3.427	2.537	2.041	1.472	13.353	7.623	6.099	4.992	3.078
4.502	3.393	2.505	1.99	1.239	11.152	7.324	5.94	4.987	2.764
4.203	3.338	2.286	1.953	1.219	9.813	6.952	5.894	4.97	2.576
4.116	3.168	2.249	1.942	1.196	9.12	6.831	5.34	4.28	2.333
3.897	2.931	2.248	1.94	1.193	8.794	6.754	5.229	4.123	2.131
3.793	2.908	2.106	1.91	1.066	8.401	6.534	5.061	3.237	2.059
3.773	2.699	2.093	1.649	1.033					
3.756	2.637	2.057	1.51	0.716					

Number of samples above threshold = 0

Number of samples above threshold = 15

False Alarm rate : 0 in 40

Miss rate : 15 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.8

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.8**

Probability of correct TARGET detection (sensitivity) = 0.5

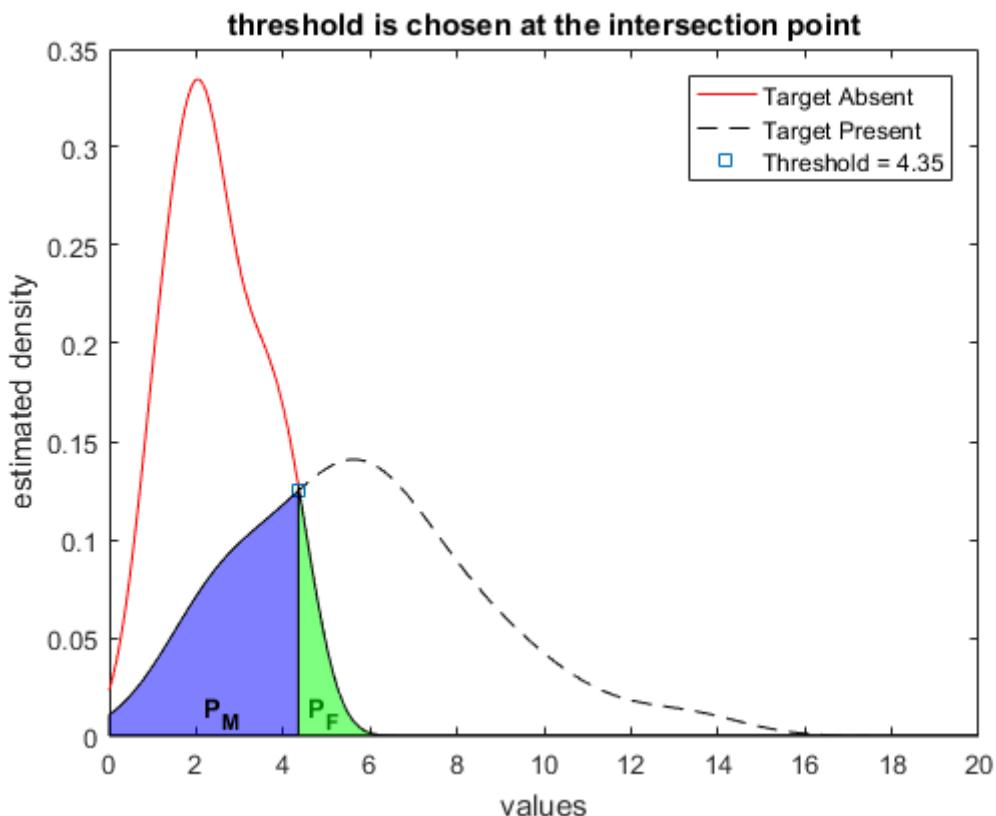
**Probability of Miss = 1 - sensitivity = 0.5**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.78571



**Sorted and Partitioned Data : Threshold at 4.35**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.565	3.427	2.537	2.041	1.472	13.353	7.623	6.099	4.992	3.078
4.502	3.393	2.505	1.99	1.239	11.152	7.324	5.94	4.987	2.764
4.203	3.338	2.286	1.953	1.219	9.813	6.952	5.894	4.97	2.576
4.116	3.168	2.249	1.942	1.196	9.12	6.831	5.34	4.28	2.333
3.897	2.931	2.248	1.94	1.193	8.794	6.754	5.229	4.123	2.131
3.793	2.908	2.106	1.91	1.066	8.401	6.534	5.061	3.237	2.059
3.773	2.699	2.093	1.649	1.033					
3.756	2.637	2.057	1.51	0.716					

Number of samples above threshold = 2

Number of samples above threshold = 21

False Alarm rate : 2 in 40

Miss rate : 9 in 30

(c) P. M. Shankar

## Summary of the analysis Dunlap

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.35**

Probability of correct TARGET detection (sensitivity) = 0.7

**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.91304**

Overall Accuracy = 0.84286

### Confusion Matrix (Threshold Value = 4.35)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	21	9	30
Total Counts	23	47	70

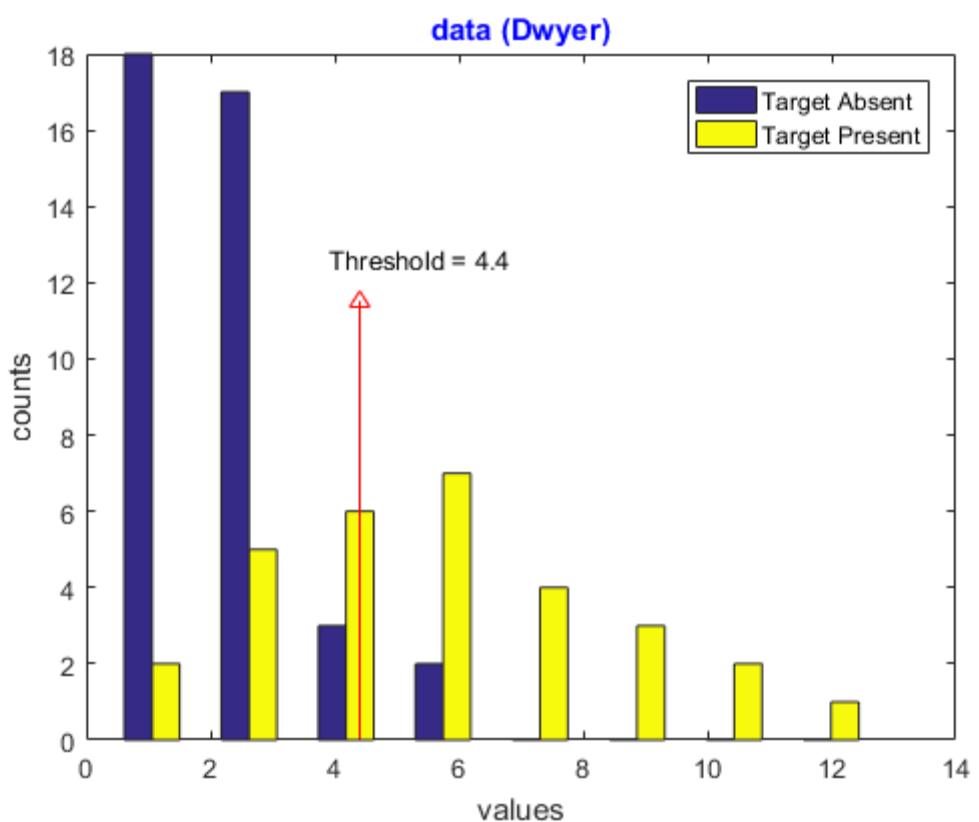
$$P_F = \frac{1}{20} \quad P_M = \frac{3}{10} \quad PPV = \frac{21}{23} \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

## Summary of the analysis Dunlap

data (Dwyer)

Target Absent					Target Present				
3.097	1.574	1.357	0.278	1.856	1.924	8.66	5.139	2.979	7.942
1.663	1.597	5.209	0.476	1.512	2.83	7.627	3.478	3.55	3.788
2.637	1.531	1.992	2.478	2.887	7.401	5.983	12.774	10.072	8.797
2.189	2.23	0.348	2.633	2.699	6.385	2.983	6.121	1.914	1.279
1.874	1.052	2.855	0.789	0.859	6.291	10.081	8.53	3.53	4.609
2.537	4.087	0.837	3.052	5.24	4.002	6.1	0.804	4.975	7.072
1.222	0.477	3.428	1.98	3.468					
2.739	1.154	2.342	1.484	1.579					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.4

	Target Absent					Target Present				
<b>5.24</b>	2.855	2.23	1.579	1.052		<b>12.774</b>	<b>7.942</b>	<b>6.121</b>	4.002	2.979
<b>5.209</b>	2.739	2.189	1.574	0.859		<b>10.081</b>	<b>7.627</b>	<b>6.1</b>	3.788	2.83
4.087	2.699	1.992	1.531	0.837		<b>10.072</b>	<b>7.401</b>	<b>5.983</b>	3.55	1.924
3.468	2.637	1.98	1.512	0.789		<b>8.797</b>	<b>7.072</b>	<b>5.139</b>	3.53	1.914
3.428	2.633	1.874	1.484	0.477		<b>8.66</b>	<b>6.385</b>	<b>4.975</b>	3.478	1.279
3.097	2.537	1.856	1.357	0.476		<b>8.53</b>	<b>6.291</b>	<b>4.609</b>	2.983	0.804
3.052	2.478	1.663	1.222	0.348						
2.887	2.342	1.597	1.154	0.278						

**Number of samples above threshold = 2**

**Number of samples above threshold = 18**

False Alarm rate : 2 in 40

Miss rate : 12 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 4.4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.4**

Probability of correct TARGET detection (sensitivity) = 0.6

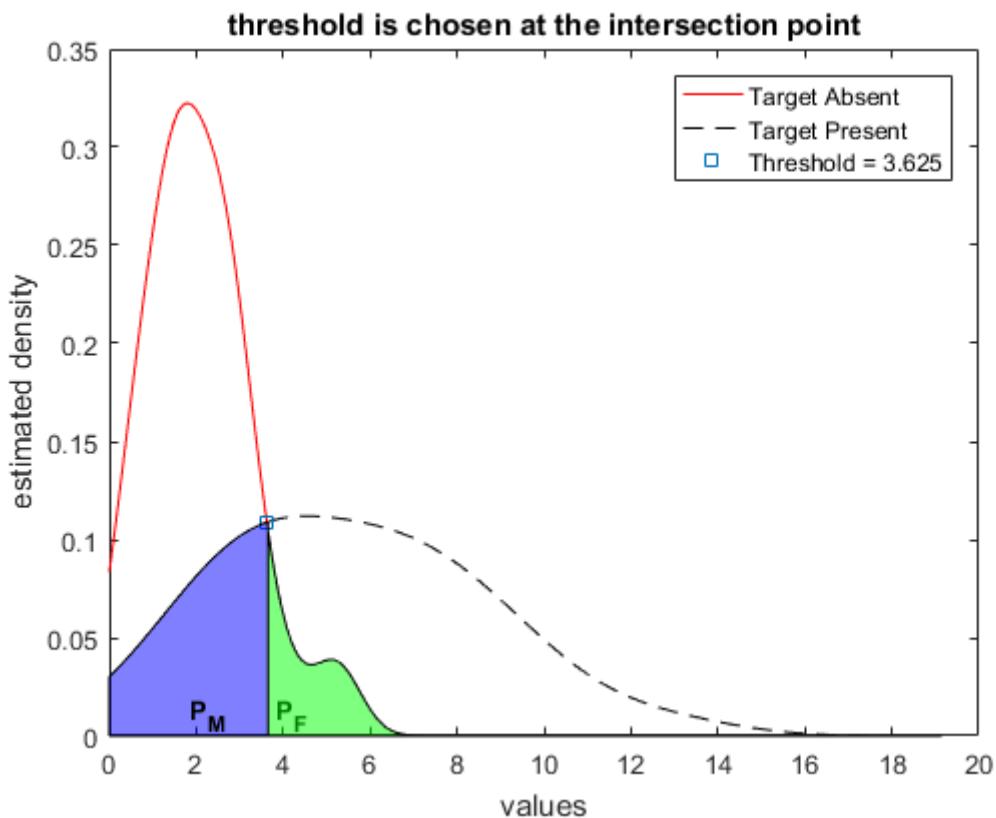
**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.9**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 3.625**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.24	2.855	2.23	1.579	1.052	12.774	7.942	6.121	4.002	2.979
5.209	2.739	2.189	1.574	0.859	10.081	7.627	6.1	3.788	2.83
4.087	2.699	1.992	1.531	0.837	10.072	7.401	5.983	3.55	1.924
3.468	2.637	1.98	1.512	0.789	8.797	7.072	5.139	3.53	1.914
3.428	2.633	1.874	1.484	0.477	8.66	6.385	4.975	3.478	1.279
3.097	2.537	1.856	1.357	0.476	8.53	6.291	4.609	2.983	0.804
3.052	2.478	1.663	1.222	0.348					
2.887	2.342	1.597	1.154	0.278					

**Number of samples above threshold = 3**

**Number of samples above threshold = 20**

False Alarm rate : 3 in 40

Miss rate : 10 in 30

(c) P. M. Shankar

## Summary of the analysis Dwyer

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.625**

Probability of correct TARGET detection (sensitivity) = 0.66667

**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.86957**

Overall Accuracy = 0.81429

### Confusion Matrix (Threshold Value = 3.625)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	20	10	30
Total Counts	23	47	70

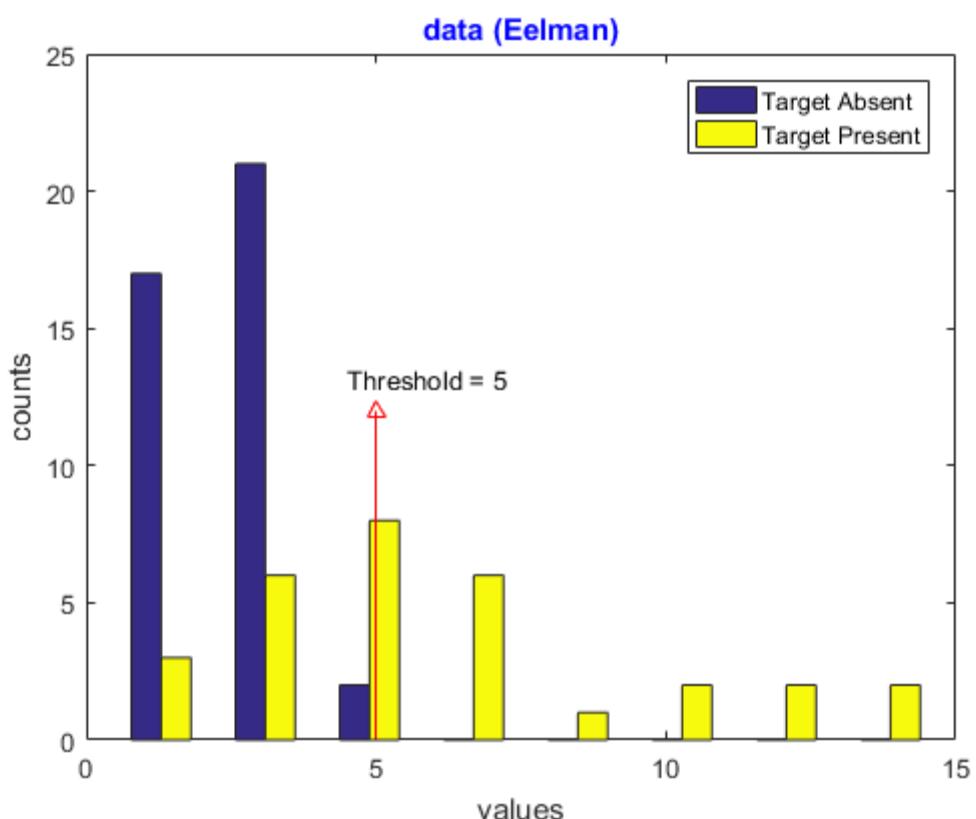
$$P_F = \frac{3}{40} \quad P_M = \frac{1}{3} \quad \text{PPV} = \frac{20}{23} \quad \text{err} = \frac{13}{70} \quad \text{acc} = \frac{57}{70}$$

## Summary of the analysis Dwyer

**data (Elman)**

Target Absent					Target Present				
3.238	2.888	1.837	2.946	2.394	0.929	4.24	9.76	5.433	2.973
0.68	2.447	1.446	3.495	2.287	2.457	5.175	14.773	2.057	2.863
3.698	2.27	3.517	4.729	1.132	13.759	6.088	8.985	5.326	5.3
2.744	4.983	2.309	2.522	0.741	7.134	12.509	2.644	2.746	6.068
1.25	2.349	3.416	3.219	1.687	6.662	4.646	7.262	5.845	5.221
2.054	2.965	2.863	0.93	1.106	4.223	1.012	10.491	11.595	2.449
1.837	1.453	2.518	1.024	0.394					
1.779	0.786	1.765	2.278	2.617					

**(c) P. M. Shankar**



### Sorted and Partitioned Data : Threshold at 5

Target Absent					Target Present				
4.983	2.965	2.447	1.837	1.132	<b>14.773</b>	<b>8.985</b>	<b>5.845</b>	4.646	2.644
4.729	2.946	2.394	1.837	1.106	<b>13.759</b>	<b>7.262</b>	<b>5.433</b>	4.24	2.457
3.698	2.888	2.349	1.779	1.024	<b>12.509</b>	<b>7.134</b>	<b>5.326</b>	4.223	2.449
3.517	2.863	2.309	1.765	0.93	<b>11.595</b>	<b>6.662</b>	<b>5.3</b>	2.973	2.057
3.495	2.744	2.287	1.687	0.786	<b>10.491</b>	<b>6.088</b>	<b>5.221</b>	2.863	1.012
3.416	2.617	2.278	1.453	0.741	<b>9.76</b>	<b>6.068</b>	<b>5.175</b>	2.746	0.929
3.238	2.522	2.27	1.446	0.68					
3.219	2.518	2.054	1.25	0.394					

**Number of samples above threshold = 0**

**Number of samples above threshold = 18**

False Alarm rate : 0 in 40

Miss rate : 12 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 5

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5**

Probability of correct TARGET detection (sensitivity) = 0.6

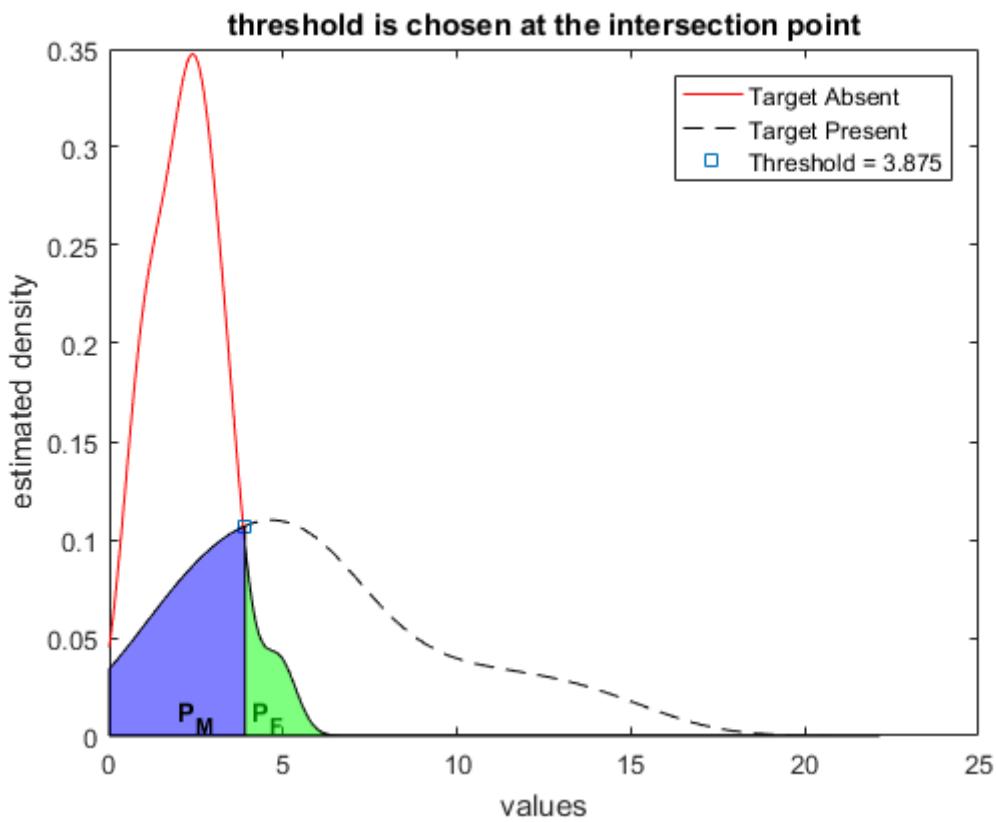
**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 3.875**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.983	2.965	2.447	1.837	1.132	14.773	8.985	5.845	4.646	2.644
4.729	2.946	2.394	1.837	1.106	13.759	7.262	5.433	4.24	2.457
3.698	2.888	2.349	1.779	1.024	12.509	7.134	5.326	4.223	2.449
3.517	2.863	2.309	1.765	0.93	11.595	6.662	5.3	2.973	2.057
3.495	2.744	2.287	1.687	0.786	10.491	6.088	5.221	2.863	1.012
3.416	2.617	2.278	1.453	0.741	9.76	6.068	5.175	2.746	0.929
3.238	2.522	2.27	1.446	0.68					
3.219	2.518	2.054	1.25	0.394					

**Number of samples above threshold = 2**

False Alarm rate : 2 in 40

**Number of samples above threshold = 21**

Miss rate : 9 in 30

(c) P. M. Shankar

## Summary of the analysis Eelman

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.875**

Probability of correct TARGET detection (sensitivity) = 0.7

**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.91304**

Overall Accuracy = 0.84286

### Confusion Matrix (Threshold Value = 3.875)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	21	9	30
Total Counts	23	47	70

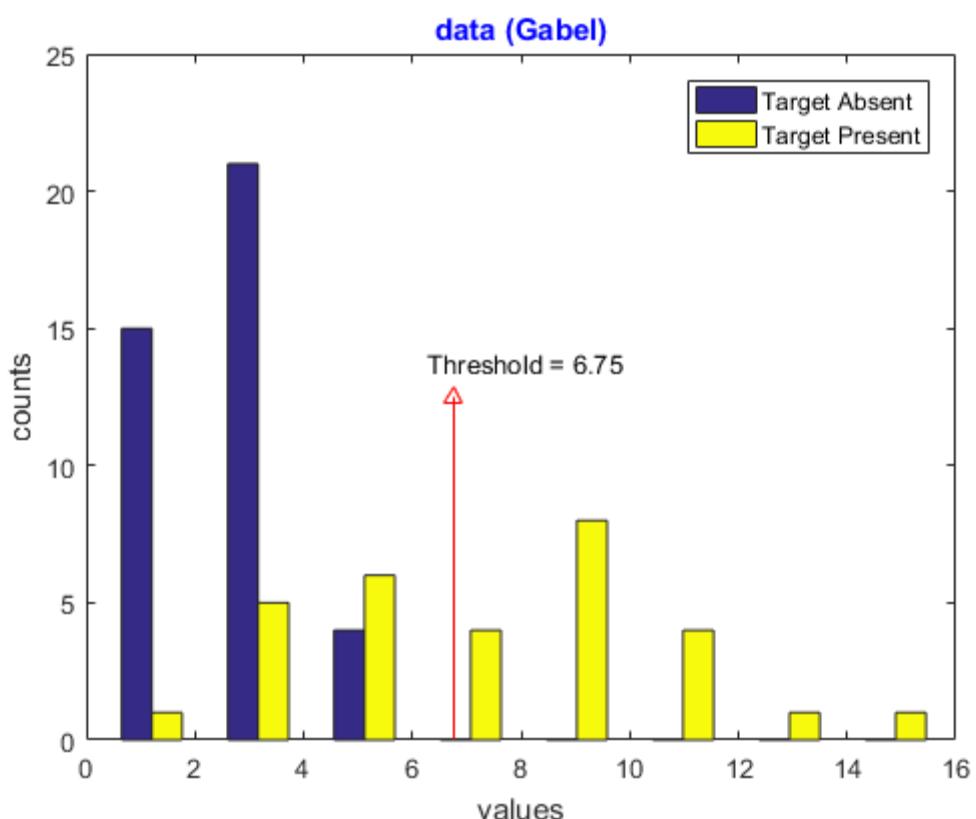
$$P_F = \frac{1}{20} \quad P_M = \frac{3}{10} \quad PPV = \frac{21}{23} \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

## Summary of the analysis Eelman

data (Gabel)

Target Absent					Target Present				
3.065	3.522	0.976	0.981	4.668	9.323	2.562	3.137	9.765	5.872
3.687	1.891	2.678	1.49	2.762	2.873	3.31	10.29	8.722	6.553
2.139	5.336	1.393	3.662	5.343	10.466	7.074	5.576	15.871	10.441
2.612	0.939	1.822	2.581	2.28	8.966	4.988	5.516	1.411	7.612
2.974	1.297	2.338	2.285	3.043	6.268	4.661	10.231	8.287	2.538
0.23	3.512	1.243	1.131	2.25	8.932	5.321	9.158	8.892	12.583
2.465	3.259	2.734	0.897	1.895					
4.965	3.565	2.604	1.585	2.43					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 6.75

Target Absent					Target Present				
5.343	3.512	2.612	2.25	1.297	<b>15.871</b>	<b>9.765</b>	<b>8.722</b>	5.872	3.31
5.336	3.259	2.604	2.139	1.243	<b>12.583</b>	<b>9.323</b>	<b>8.287</b>	5.576	3.137
4.965	3.065	2.581	1.895	1.131	<b>10.466</b>	<b>9.158</b>	<b>7.612</b>	5.516	2.873
4.668	3.043	2.465	1.891	0.981	<b>10.441</b>	<b>8.966</b>	<b>7.074</b>	5.321	2.562
3.687	2.974	2.43	1.822	0.976	<b>10.29</b>	<b>8.932</b>	6.553	4.988	2.538
3.662	2.762	2.338	1.585	0.939	<b>10.231</b>	<b>8.892</b>	6.268	4.661	1.411
3.565	2.734	2.285	1.49	0.897					
3.522	2.678	2.28	1.393	0.23					

Number of samples above threshold = 0

Number of samples above threshold = 16

False Alarm rate : 0 in 40

Miss rate : 14 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 6.75

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6.75**

Probability of correct TARGET detection (sensitivity) = 0.53333

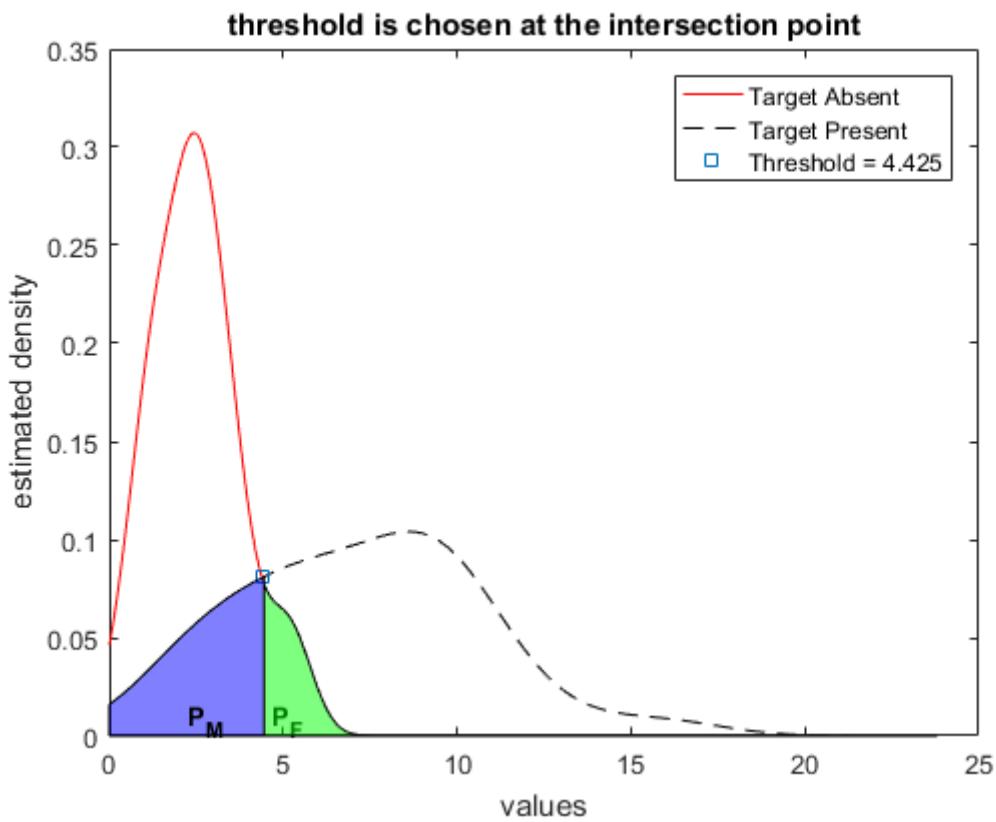
**Probability of Miss = 1 - sensitivity = 0.46667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 4.425**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.343	3.512	2.612	2.25	1.297	15.871	9.765	8.722	5.872	3.31
5.336	3.259	2.604	2.139	1.243	12.583	9.323	8.287	5.576	3.137
4.965	3.065	2.581	1.895	1.131	10.466	9.158	7.612	5.516	2.873
4.668	3.043	2.465	1.891	0.981	10.441	8.966	7.074	5.321	2.562
3.687	2.974	2.43	1.822	0.976	10.29	8.932	6.553	4.988	2.538
3.662	2.762	2.338	1.585	0.939	10.231	8.892	6.268	4.661	1.411
3.565	2.734	2.285	1.49	0.897					
3.522	2.678	2.28	1.393	0.23					

**Number of samples above threshold = 4**

False Alarm rate : 4 in 40

**Number of samples above threshold = 24**

Miss rate : 6 in 30

**(c) P. M. Shankar**

## Summary of the analysis Gabel

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.425**

Probability of correct TARGET detection (sensitivity) = 0.8

**Probability of Miss = 1 - sensitivity = 0.2**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.85714**

Overall Accuracy = 0.85714

### Confusion Matrix (Threshold Value = 4.425)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	24	6	30
Total Counts	28	42	70

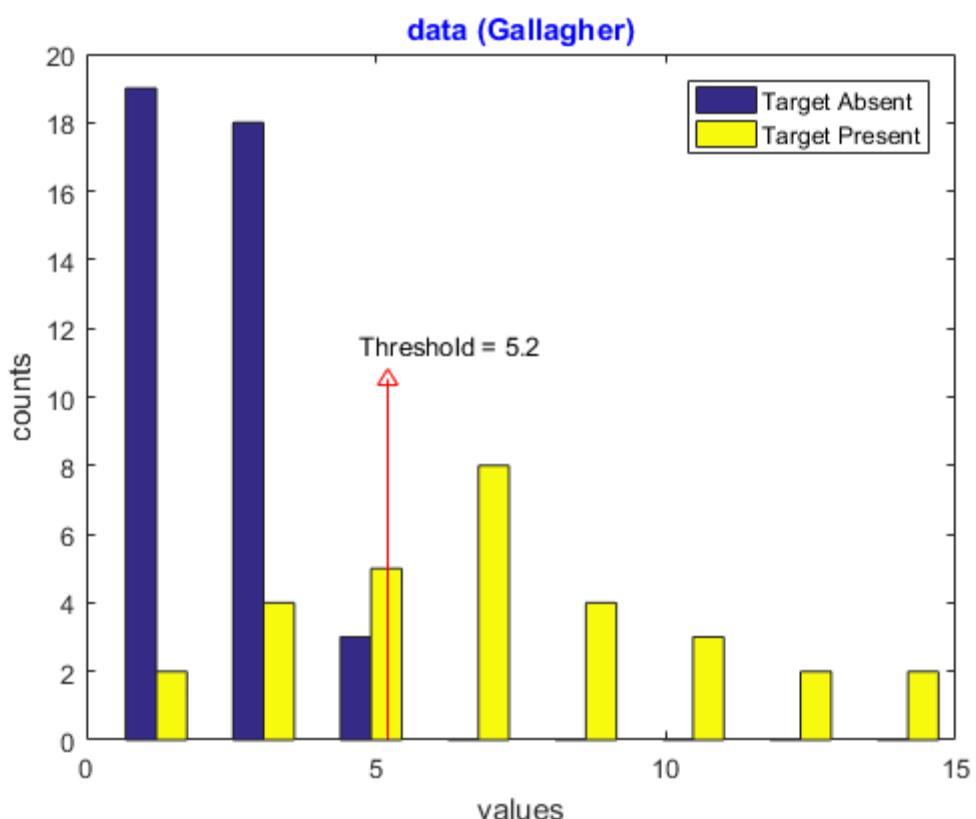
$$P_F = \frac{1}{10} \quad P_M = \frac{1}{5} \quad \text{PPV} = \frac{6}{7} \quad \text{err} = \frac{1}{7} \quad \text{acc} = \frac{6}{7}$$

## Summary of the analysis Gabel

data (Gallagher)

Target Absent					Target Present				
2.682	2.6	3.414	3.104	0.282	4.718	6.35	2.663	9.737	11.54
3.296	3.605	3.944	1.869	1.266	5.907	5.657	1.133	6.809	13.203
3.084	5.426	3.592	2.487	3.012	14.886	7.932	9.893	2.407	2.642
2.65	4.291	2.988	1.243	1.406	15.101	6.263	6.754	8.583	0.946
1.687	1.742	1.959	1.494	1.484	5.783	7.609	6.782	4.553	2.144
1.286	2.915	1.04	2.136	1.493	10.347	7.896	4.096	7.419	9.291
1.741	1.423	0.431	4.121	3.185					
3.427	0.853	1.934	3.207	1.741					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.2

Target Absent					Target Present				
<b>5.426</b>	3.296	2.682	1.742	1.406	<b>15.101</b>	<b>9.737</b>	<b>7.419</b>	<b>5.907</b>	2.663
4.291	3.207	2.65	1.741	1.286	<b>14.886</b>	<b>9.291</b>	<b>6.809</b>	<b>5.783</b>	2.642
4.121	3.185	2.6	1.741	1.266	<b>13.203</b>	<b>8.583</b>	<b>6.782</b>	<b>5.657</b>	2.407
3.944	3.104	2.487	1.687	1.243	<b>11.54</b>	<b>7.932</b>	<b>6.754</b>	4.718	2.144
3.605	3.084	2.136	1.494	1.04	<b>10.347</b>	<b>7.896</b>	<b>6.35</b>	4.553	1.133
3.592	3.012	1.959	1.493	0.853	<b>9.893</b>	<b>7.609</b>	<b>6.263</b>	4.096	0.946
3.427	2.988	1.934	1.484	0.431					
3.414	2.915	1.869	1.423	0.282					

Number of samples above threshold = 1

Number of samples above threshold = 21

False Alarm rate : 1 in 40

Miss rate : 9 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.2

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.2**

Probability of correct TARGET detection (sensitivity) = 0.7

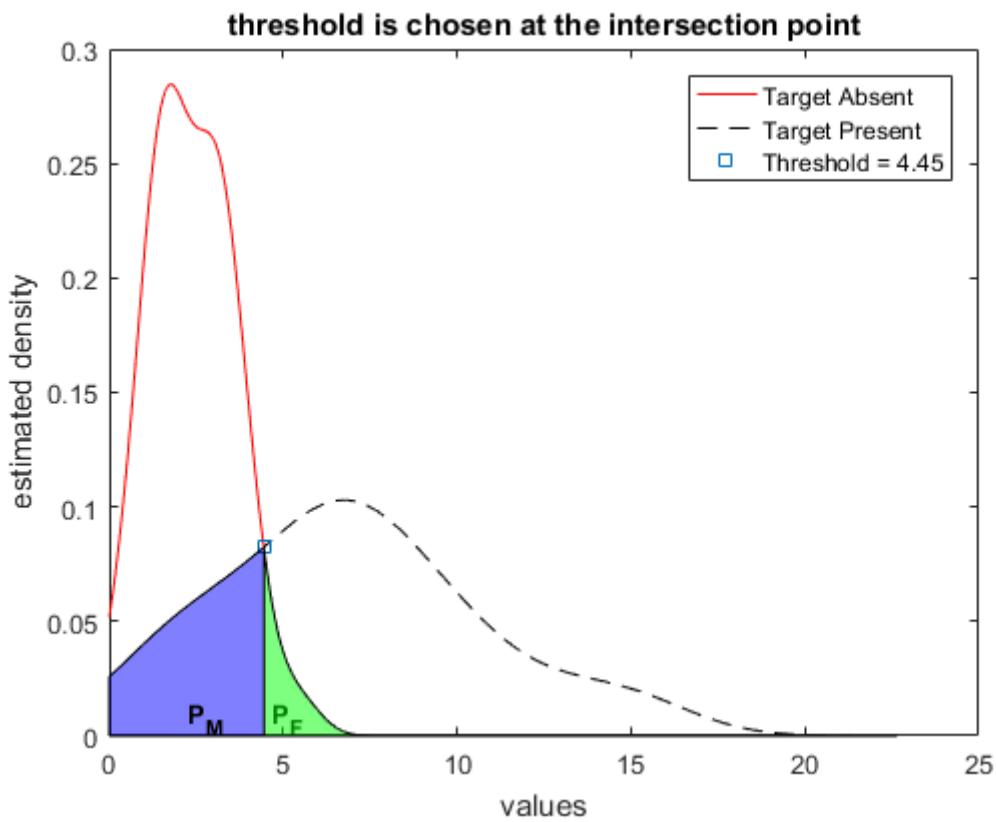
**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95455**

Overall Accuracy = 0.85714



**Sorted and Partitioned Data : Threshold at 4.45**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>5.426</b>	3.296	2.682	1.742	1.406	<b>15.101</b>	<b>9.737</b>	<b>7.419</b>	<b>5.907</b>	2.663
4.291	3.207	2.65	1.741	1.286	<b>14.886</b>	<b>9.291</b>	<b>6.809</b>	<b>5.783</b>	2.642
4.121	3.185	2.6	1.741	1.266	<b>13.203</b>	<b>8.583</b>	<b>6.782</b>	<b>5.657</b>	2.407
3.944	3.104	2.487	1.687	1.243	<b>11.54</b>	<b>7.932</b>	<b>6.754</b>	<b>4.718</b>	2.144
3.605	3.084	2.136	1.494	1.04	<b>10.347</b>	<b>7.896</b>	<b>6.35</b>	<b>4.553</b>	1.133
3.592	3.012	1.959	1.493	0.853	<b>9.893</b>	<b>7.609</b>	<b>6.263</b>	4.096	0.946
3.427	2.988	1.934	1.484	0.431					
3.414	2.915	1.869	1.423	0.282					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 23**

Miss rate : 7 in 30

(c) P. M. Shankar

## Summary of the analysis Gallagher

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.45**

Probability of correct TARGET detection (sensitivity) = 0.76667

**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95833**

Overall Accuracy = 0.88571

### Confusion Matrix (Threshold Value = 4.45)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	23	7	30
Total Counts	24	46	70

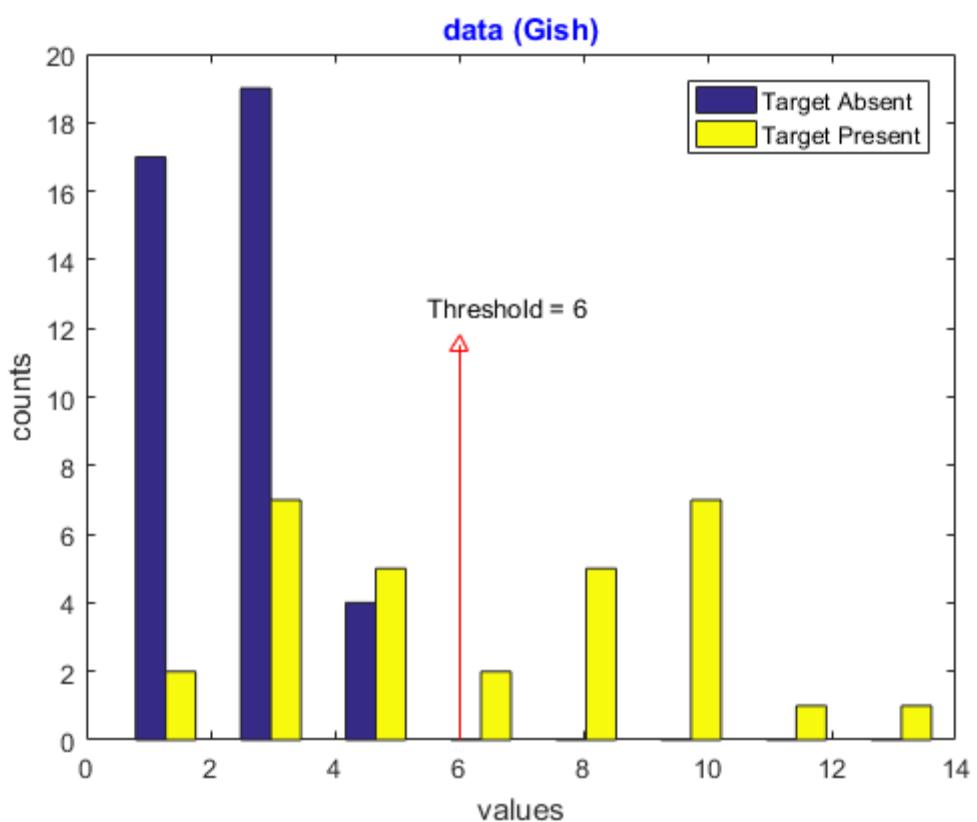
$$P_F = \frac{1}{40} \quad P_M = \frac{7}{30} \quad PPV = \frac{23}{24} \quad \text{err} = \frac{4}{35} \quad \text{acc} = \frac{31}{35}$$

## Summary of the analysis Gallagher

data (Gish)

Target Absent					Target Present				
0.601	2.666	3.194	0.456	0.432	9.216	1.619	5.338	5.225	5.948
2.245	2.32	4.584	3.295	3.8	3.344	9.669	9.735	2.314	13.97
3.4	3.012	1.25	1.729	1.885	2.635	5.24	3.009	7.238	8.41
1.4	2.394	4.5	2.669	0.968	9.406	2.684	1.986	3.238	4.615
1.305	4.11	0.937	3.13	3.811	10.468	8.916	6.251	2.452	7.412
3.493	1.311	2.637	4.353	1.535	9.221	10.954	7.663	8.632	4.19
1.712	3.673	1.844	2.094	2.079					
3.218	2.242	2.168	2.174	1.744					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 6

Target Absent					Target Present				
4.584	3.4	2.637	2.079	1.311	<b>13.97</b>	<b>9.221</b>	<b>7.412</b>	5.225	2.684
4.5	3.295	2.394	1.885	1.305	<b>10.954</b>	<b>9.216</b>	<b>7.238</b>	4.615	2.635
4.353	3.218	2.32	1.844	1.25	<b>10.468</b>	<b>8.916</b>	<b>6.251</b>	4.19	2.452
4.11	3.194	2.245	1.744	0.968	<b>9.735</b>	<b>8.632</b>	5.948	3.344	2.314
3.811	3.13	2.242	1.729	0.937	<b>9.669</b>	<b>8.41</b>	5.338	3.238	1.986
3.8	3.012	2.174	1.712	0.601	<b>9.406</b>	<b>7.663</b>	5.24	3.009	1.619
3.673	2.669	2.168	1.535	0.456					
3.493	2.666	2.094	1.4	0.432					

**Number of samples above threshold = 0**

**Number of samples above threshold = 15**

False Alarm rate : 0 in 40

Miss rate : 15 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 6

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6**

Probability of correct TARGET detection (sensitivity) = 0.5

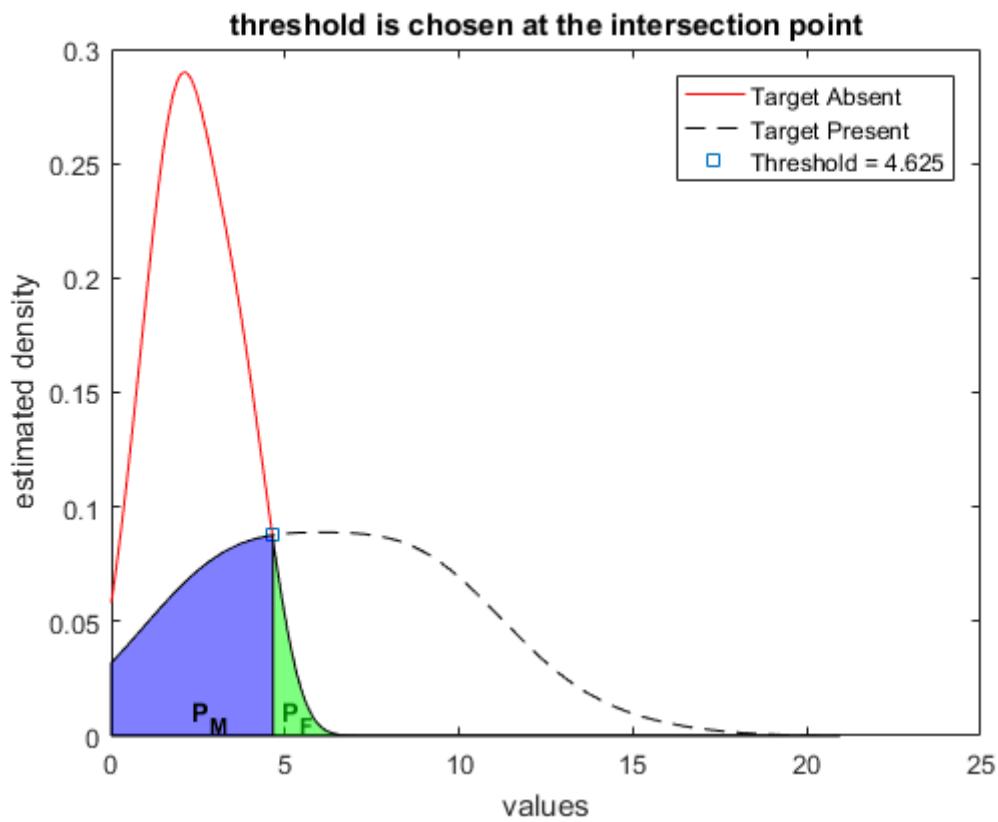
**Probability of Miss = 1 - sensitivity = 0.5**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.78571



**Sorted and Partitioned Data : Threshold at 4.625**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.584	3.4	2.637	2.079	1.311	<b>13.97</b>	<b>9.221</b>	<b>7.412</b>	<b>5.225</b>	2.684
4.5	3.295	2.394	1.885	1.305	<b>10.954</b>	<b>9.216</b>	<b>7.238</b>	4.615	2.635
4.353	3.218	2.32	1.844	1.25	<b>10.468</b>	<b>8.916</b>	<b>6.251</b>	4.19	2.452
4.11	3.194	2.245	1.744	0.968	<b>9.735</b>	<b>8.632</b>	<b>5.948</b>	3.344	2.314
3.811	3.13	2.242	1.729	0.937	<b>9.669</b>	<b>8.41</b>	<b>5.338</b>	3.238	1.986
3.8	3.012	2.174	1.712	0.601	<b>9.406</b>	<b>7.663</b>	<b>5.24</b>	3.009	1.619
3.673	2.669	2.168	1.535	0.456					
3.493	2.666	2.094	1.4	0.432					

**Number of samples above threshold = 0**

**Number of samples above threshold = 19**

False Alarm rate : 0 in 40

Miss rate : 11 in 30

**(c) P. M. Shankar**

## Summary of the analysis Gish

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.625**

Probability of correct TARGET detection (sensitivity) = 0.63333

**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.84286

### Confusion Matrix (Threshold Value = 4.625)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	0	40	40
Target Present	19	11	30
Total Counts	19	51	70

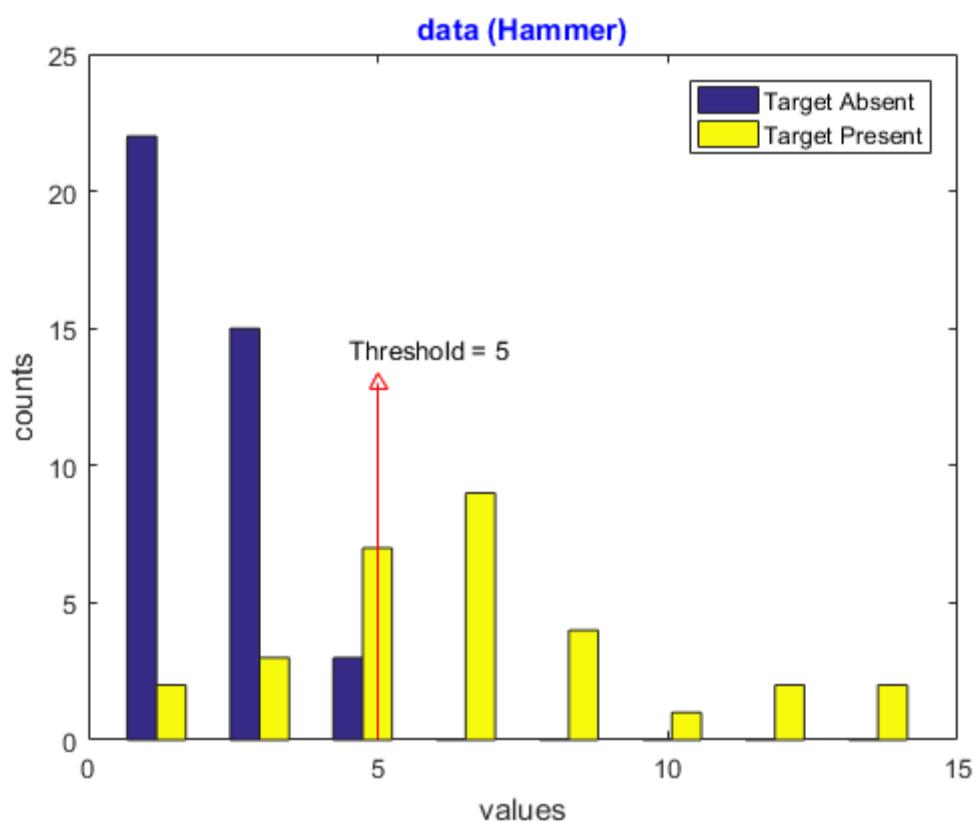
$$P_F = 0 \quad P_M = \frac{11}{30} \quad \text{PPV} = 1 \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

## Summary of the analysis Gish

data (Hammer)

Target Absent					Target Present				
3.53	1.88	1.52	2.922	1.77	12.076	12.964	6.8	5.394	14.512
2.397	1.663	1.916	0.427	2.016	6.673	6.728	11.809	6.098	3.058
3.992	3.324	1.513	0.813	0.567	3.676	4.225	7.209	9.17	6.252
1.519	1.913	2.888	1.456	0.808	5.505	5.258	7.03	1.493	4.511
5.046	0.29	1.668	2.038	0.832	8.261	1.885	6.242	7.352	4.974
2.782	2.051	2.379	2.301	3.385	8.15	3.073	7.648	4.564	9.707
2.832	3.688	1.079	1.563	5.489					
2.203	2.798	1.914	2.665	3.435					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5

Target Absent					Target Present				
<b>5.489</b>	2.922	2.301	1.88	1.456	<b>14.512</b>	<b>8.261</b>	<b>6.8</b>	<b>5.505</b>	4.225
<b>5.046</b>	2.888	2.203	1.77	1.079	<b>12.964</b>	<b>8.15</b>	<b>6.728</b>	<b>5.394</b>	3.676
3.992	2.832	2.051	1.668	0.832	<b>12.076</b>	<b>7.648</b>	<b>6.673</b>	<b>5.258</b>	3.073
3.688	2.798	2.038	1.663	0.813	<b>11.809</b>	<b>7.352</b>	<b>6.252</b>	4.974	3.058
3.53	2.782	2.016	1.563	0.808	<b>9.707</b>	<b>7.209</b>	<b>6.242</b>	4.564	1.885
3.435	2.665	1.916	1.52	0.567	<b>9.17</b>	<b>7.03</b>	<b>6.098</b>	4.511	1.493
3.385	2.397	1.914	1.519	0.427					
3.324	2.379	1.913	1.513	0.29					

Number of samples above threshold = 2

Number of samples above threshold = 21

False Alarm rate : 2 in 40

Miss rate : 9 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5**

Probability of correct TARGET detection (sensitivity) = 0.7

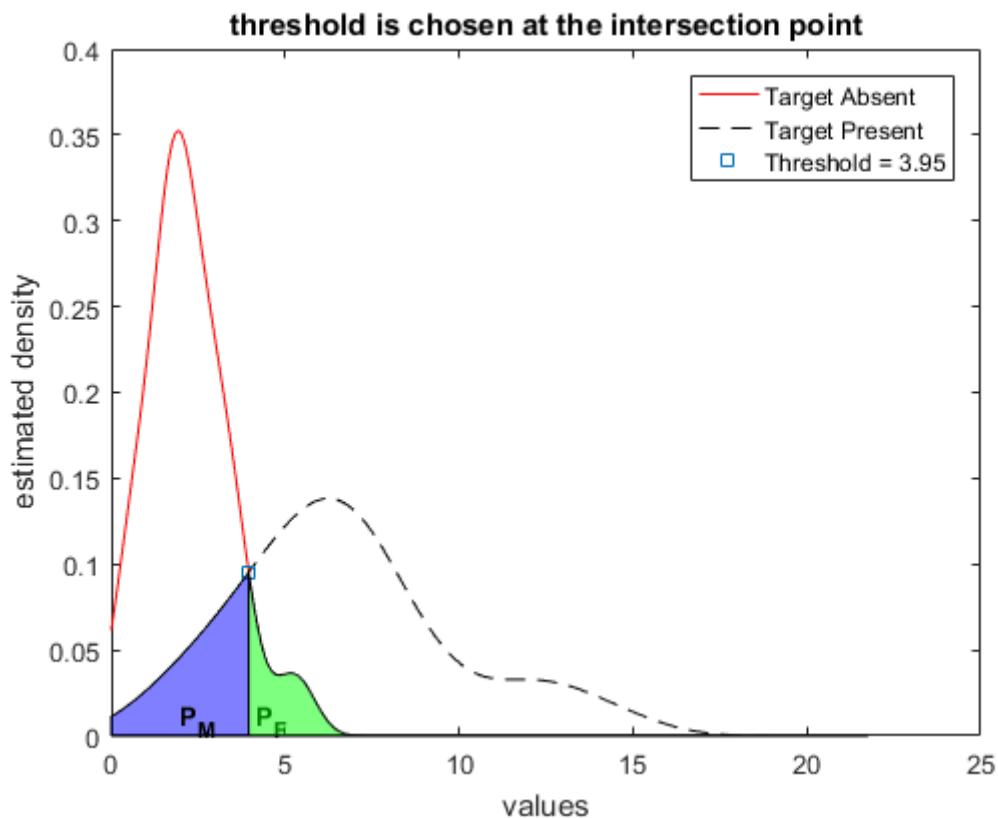
**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.91304**

Overall Accuracy = 0.84286



**Sorted and Partitioned Data : Threshold at 3.95**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.489	2.922	2.301	1.88	1.456	14.512	8.261	6.8	5.505	4.225
5.046	2.888	2.203	1.77	1.079	12.964	8.15	6.728	5.394	3.676
3.992	2.832	2.051	1.668	0.832	12.076	7.648	6.673	5.258	3.073
3.688	2.798	2.038	1.663	0.813	11.809	7.352	6.252	4.974	3.058
3.53	2.782	2.016	1.563	0.808	9.707	7.209	6.242	4.564	1.885
3.435	2.665	1.916	1.52	0.567	9.17	7.03	6.098	4.511	1.493
3.385	2.397	1.914	1.519	0.427					
3.324	2.379	1.913	1.513	0.29					

Number of samples above threshold = 3

Number of samples above threshold = 25

False Alarm rate : 3 in 40

Miss rate : 5 in 30

(c) P. M. Shankar

## Summary of the analysis Hammer

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.95**

Probability of correct TARGET detection (sensitivity) = 0.83333

**Probability of Miss = 1 - sensitivity = 0.16667**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.89286**

Overall Accuracy = 0.88571

### Confusion Matrix (Threshold Value = 3.95)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	25	5	30
Total Counts	28	42	70

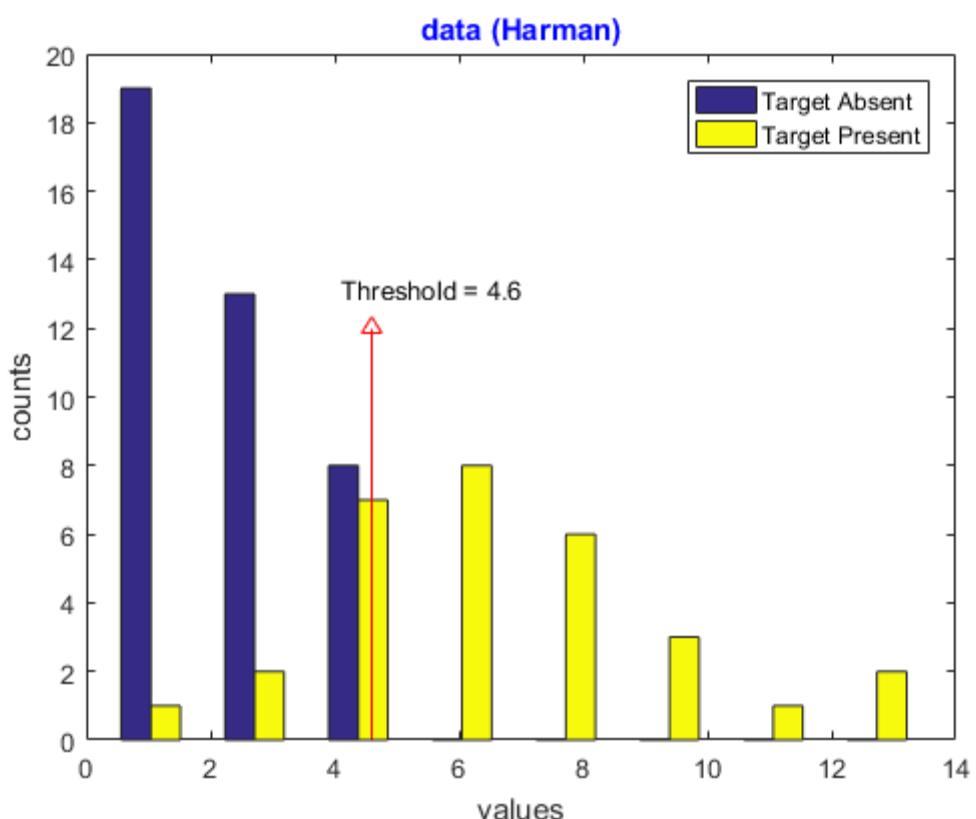
$$P_F = \frac{3}{40} \quad P_M = \frac{1}{6} \quad \text{PPV} = \frac{25}{28} \quad \text{err} = \frac{4}{35} \quad \text{acc} = \frac{31}{35}$$

## Summary of the analysis Hammer

data (Harman)

Target Absent					Target Present				
3.791	2.88	3.76	3.511	0.579	11.757	5.001	8.29	6.699	7.766
0.675	1.585	1.049	1.13	2.677	2.978	6.383	2.848	5.456	3.62
3.583	3.932	2.895	1.63	3.139	8.803	1.269	9.974	5.412	9.106
1.373	0.204	2.133	3.655	1.083	3.723	5.2	6.181	4.845	6.638
2.974	4.409	0.69	0.488	2.834	6.578	4.035	7.054	4.286	7.665
0.504	1.72	1.936	0.519	2.211	7.417	6.326	7.01	12.407	13.566
1.52	2.736	1.114	0.922	1.052					
3.898	1.956	0.697	1.979	4.595					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.6

Target Absent					Target Present				
4.595	3.511	2.211	1.52	0.697	<b>13.566</b>	<b>8.29</b>	<b>6.699</b>	<b>5.456</b>	4.035
4.409	3.139	2.133	1.373	0.69	<b>12.407</b>	<b>7.766</b>	<b>6.638</b>	<b>5.412</b>	3.723
3.932	2.974	1.979	1.13	0.675	<b>11.757</b>	<b>7.665</b>	<b>6.578</b>	<b>5.2</b>	3.62
3.898	2.895	1.956	1.114	0.579	<b>9.974</b>	<b>7.417</b>	<b>6.383</b>	<b>5.001</b>	2.978
3.791	2.88	1.936	1.083	0.519	<b>9.106</b>	<b>7.054</b>	<b>6.326</b>	<b>4.845</b>	2.848
3.76	2.834	1.72	1.052	0.504	<b>8.803</b>	<b>7.01</b>	<b>6.181</b>	4.286	1.269
3.655	2.736	1.63	1.049	0.488					
3.583	2.677	1.585	0.922	0.204					

Number of samples above threshold = 0

Number of samples above threshold = 23

False Alarm rate : 0 in 40

Miss rate : 7 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.6

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.6**

Probability of correct TARGET detection (sensitivity) = 0.76667

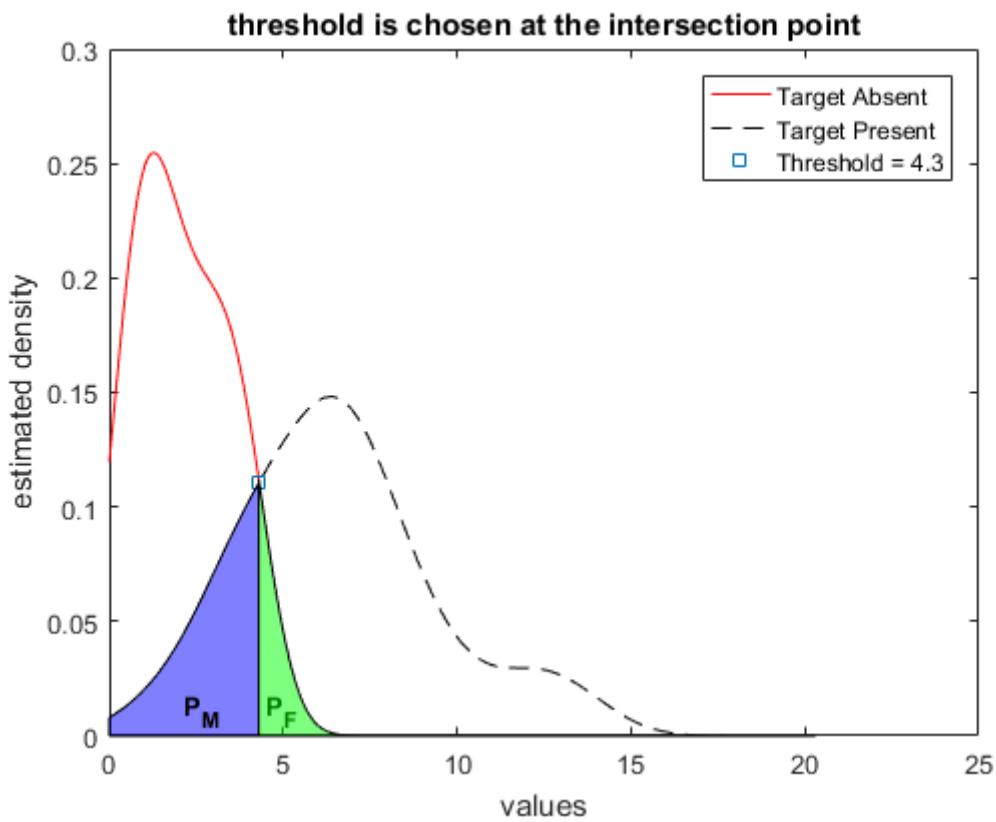
**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.9



**Sorted and Partitioned Data : Threshold at 4.3  
Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.595	3.511	2.211	1.52	0.697	13.566	8.29	6.699	5.456	4.035
4.409	3.139	2.133	1.373	0.69	12.407	7.766	6.638	5.412	3.723
3.932	2.974	1.979	1.13	0.675	11.757	7.665	6.578	5.2	3.62
3.898	2.895	1.956	1.114	0.579	9.974	7.417	6.383	5.001	2.978
3.791	2.88	1.936	1.083	0.519	9.106	7.054	6.326	4.845	2.848
3.76	2.834	1.72	1.052	0.504	8.803	7.01	6.181	4.286	1.269
3.655	2.736	1.63	1.049	0.488					
3.583	2.677	1.585	0.922	0.204					

**Number of samples above threshold = 2**

False Alarm rate : 2 in 40

**Number of samples above threshold = 23**

Miss rate : 7 in 30

**(c) P. M. Shankar**

## Summary of the analysis Harman

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.3**

Probability of correct TARGET detection (sensitivity) = 0.76667

**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.92**

Overall Accuracy = 0.87143

### Confusion Matrix (Threshold Value = 4.3)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	23	7	30
Total Counts	25	45	70

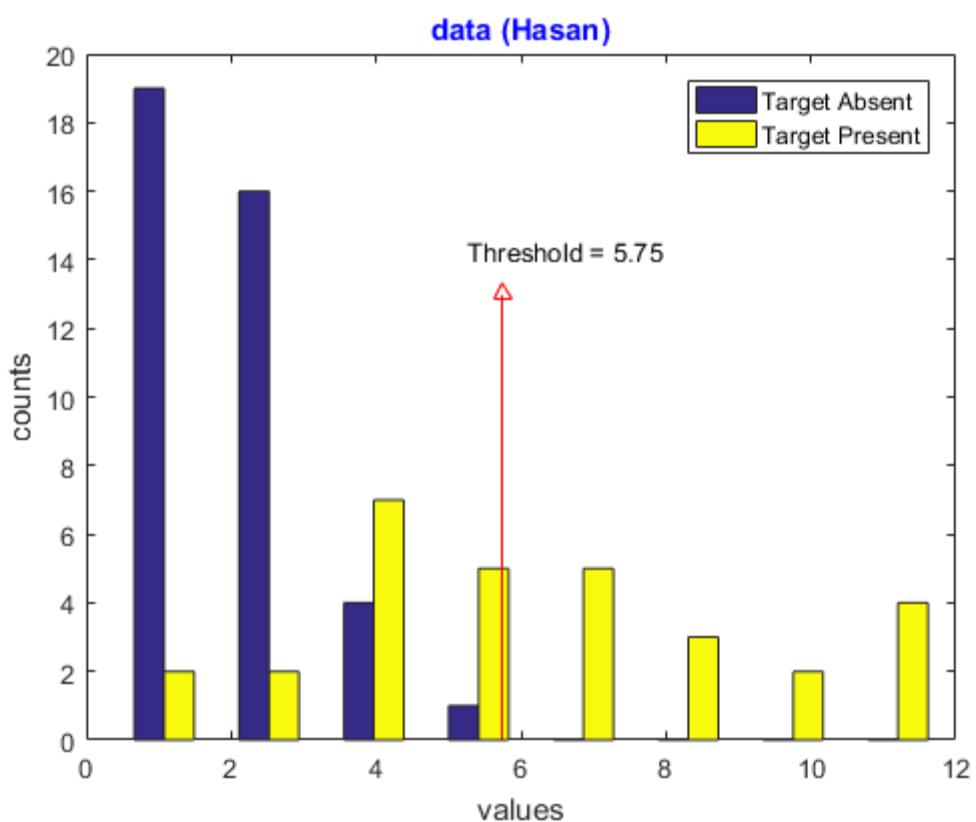
$$P_F = \frac{1}{20} \quad P_M = \frac{7}{30} \quad PPV = \frac{23}{25} \quad \text{err} = \frac{9}{70} \quad \text{acc} = \frac{61}{70}$$

## Summary of the analysis Harman

data (Hasan)

Target Absent					Target Present				
0.448	1.29	2.148	0.643	2.297	6.781	4.529	6.866	5.508	2.083
1.859	1.186	2.073	3.255	2.324	11.662	3.821	6.22	4.09	5.114
1.991	1.441	1.303	2.305	1.716	7.416	11.026	11.047	3.998	11.925
3.835	4.59	0.488	2.438	2.105	7.758	9.65	7.966	6.016	6.101
0.353	1.929	1.385	1.728	3.131	10.192	1.843	1.298	4.391	3.731
1.502	2.467	2.903	0.853	1.516	1.492	8.313	3.907	7.533	4.98
3.063	1.706	1.63	1.211	2.723					
1.752	4.698	2.854	0.408	3.95					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.75

Target Absent					Target Present				
4.698	2.854	2.105	1.706	1.211	<b>11.925</b>	<b>8.313</b>	<b>6.781</b>	4.98	3.821
4.59	2.723	2.073	1.63	1.186	<b>11.662</b>	<b>7.966</b>	<b>6.22</b>	4.529	3.731
3.95	2.467	1.991	1.516	0.853	<b>11.047</b>	<b>7.758</b>	<b>6.101</b>	4.391	2.083
3.835	2.438	1.929	1.502	0.643	<b>11.026</b>	<b>7.533</b>	<b>6.016</b>	4.09	1.843
3.255	2.324	1.859	1.441	0.488	<b>10.192</b>	<b>7.416</b>	5.508	3.998	1.492
3.131	2.305	1.752	1.385	0.448	<b>9.65</b>	<b>6.866</b>	5.114	3.907	1.298
3.063	2.297	1.728	1.303	0.408					
2.903	2.148	1.716	1.29	0.353					

Number of samples above threshold = 0

Number of samples above threshold = 16

False Alarm rate : 0 in 40

Miss rate : 14 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.75

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.75**

Probability of correct TARGET detection (sensitivity) = 0.53333

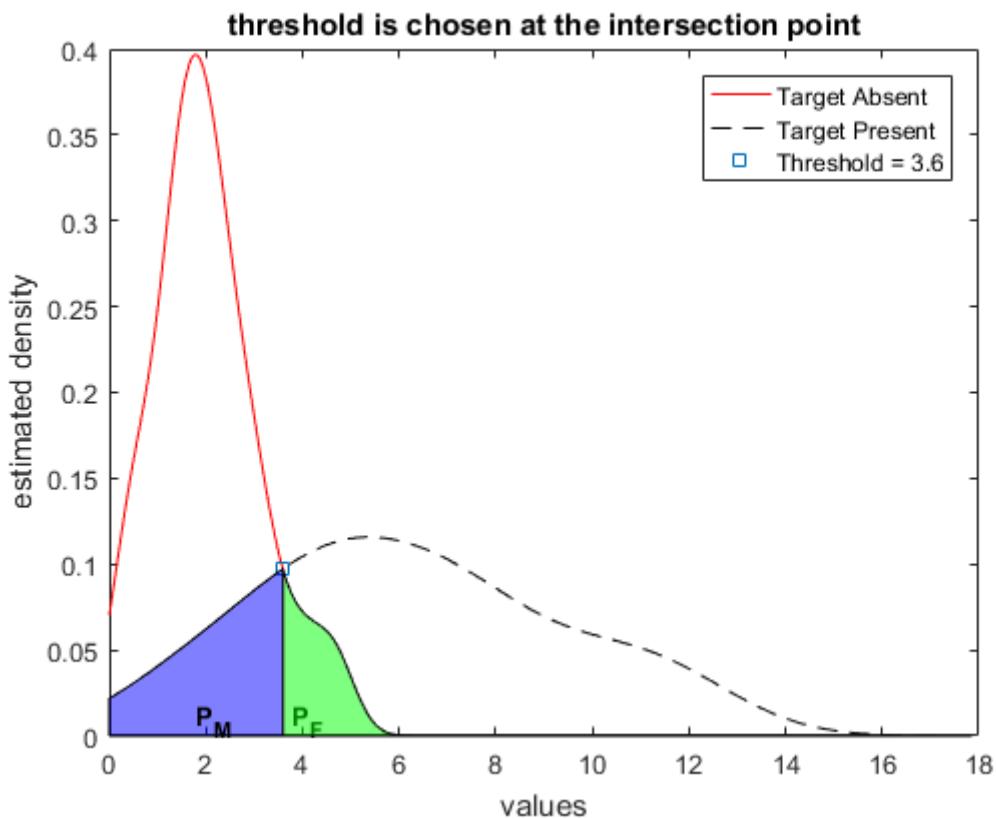
**Probability of Miss = 1 - sensitivity = 0.46667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 3.6**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.698	2.854	2.105	1.706	1.211	11.925	8.313	6.781	4.98	3.821
4.59	2.723	2.073	1.63	1.186	11.662	7.966	6.22	4.529	3.731
3.95	2.467	1.991	1.516	0.853	11.047	7.758	6.101	4.391	2.083
3.835	2.438	1.929	1.502	0.643	11.026	7.533	6.016	4.09	1.843
3.255	2.324	1.859	1.441	0.488	10.192	7.416	5.508	3.998	1.492
3.131	2.305	1.752	1.385	0.448	9.65	6.866	5.114	3.907	1.298
3.063	2.297	1.728	1.303	0.408					
2.903	2.148	1.716	1.29	0.353					

**Number of samples above threshold = 4**

False Alarm rate : 4 in 40

**Number of samples above threshold = 26**

Miss rate : 4 in 30

(c) P. M. Shankar

## Summary of the analysis Hasan

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.6**

Probability of correct TARGET detection (sensitivity) = 0.86667

**Probability of Miss = 1 - sensitivity = 0.13333**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.86667**

Overall Accuracy = 0.88571

### Confusion Matrix (Threshold Value = 3.6)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	26	4	30
Total Counts	30	40	70

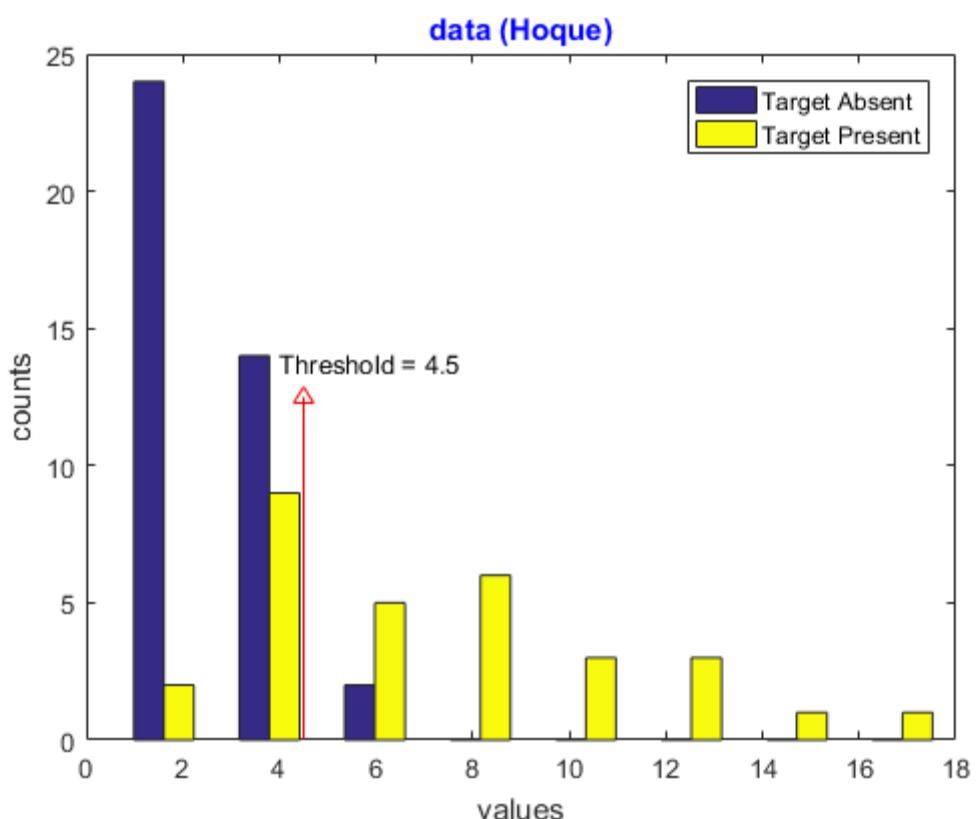
$$P_F = \frac{1}{10} \quad P_M = \frac{2}{15} \quad PPV = \frac{13}{15} \quad \text{err} = \frac{4}{35} \quad \text{acc} = \frac{31}{35}$$

## Summary of the analysis Hasan

data (Hoque)

Target Absent					Target Present				
2.642	2.81	1.829	3.791	2.457	3.198	8.626	3.709	9.722	4.444
2.221	2.478	2.437	0.813	1.776	6.789	7.184	5.508	10.779	8.542
4.127	1.633	5.427	2.27	1.842	9.471	4.548	7.095	15.235	3.923
1.54	3.901	0.515	3.533	0.728	17.986	7.522	2.802	4.263	13.48
0.675	4.079	4.167	3.14	1.252	7.808	1.324	3.578	4.443	12.813
1.147	3.403	2.15	2.525	3.059	2.048	4.994	6.805	11.46	5.275
1.874	4.891	3.56	4.085	1.06					
2.463	1.34	3.358	3.468	0.639					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.5

	Target Absent					Target Present				
<b>5.427</b>	3.56	2.642	2.15	1.252		<b>17.986</b>	<b>9.722</b>	<b>7.184</b>	<b>4.994</b>	3.709
<b>4.891</b>	3.533	2.525	1.874	1.147		<b>15.235</b>	<b>9.471</b>	<b>7.095</b>	<b>4.548</b>	3.578
4.167	3.468	2.478	1.842	1.06		<b>13.48</b>	<b>8.626</b>	<b>6.805</b>	4.444	3.198
4.127	3.403	2.463	1.829	0.813		<b>12.813</b>	<b>8.542</b>	<b>6.789</b>	4.443	2.802
4.085	3.358	2.457	1.776	0.728		<b>11.46</b>	<b>7.808</b>	<b>5.508</b>	4.263	2.048
4.079	3.14	2.437	1.633	0.675		<b>10.779</b>	<b>7.522</b>	<b>5.275</b>	3.923	1.324
3.901	3.059	2.27	1.54	0.639						
3.791	2.81	2.221	1.34	0.515						

**Number of samples above threshold = 2**

**Number of samples above threshold = 20**

False Alarm rate : 2 in 40

Miss rate : 10 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 4.5

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.5**

Probability of correct TARGET detection (sensitivity) = 0.66667

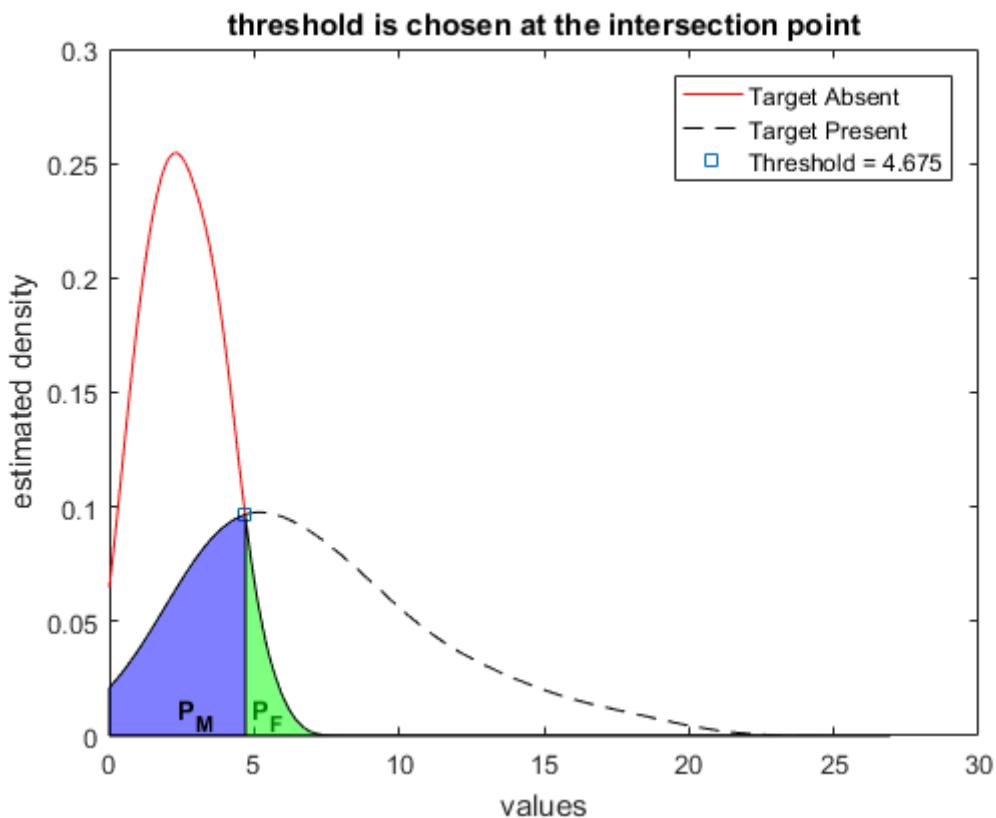
**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.90909**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 4.675**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.427	3.56	2.642	2.15	1.252	17.986	9.722	7.184	4.994	3.709
4.891	3.533	2.525	1.874	1.147	15.235	9.471	7.095	4.548	3.578
4.167	3.468	2.478	1.842	1.06	13.48	8.626	6.805	4.444	3.198
4.127	3.403	2.463	1.829	0.813	12.813	8.542	6.789	4.443	2.802
4.085	3.358	2.457	1.776	0.728	11.46	7.808	5.508	4.263	2.048
4.079	3.14	2.437	1.633	0.675	10.779	7.522	5.275	3.923	1.324
3.901	3.059	2.27	1.54	0.639					
3.791	2.81	2.221	1.34	0.515					

Number of samples above threshold = 2

Number of samples above threshold = 19

False Alarm rate : 2 in 40

Miss rate : 11 in 30

(c) P. M. Shankar

## Summary of the analysis Hoque

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.675**

Probability of correct TARGET detection (sensitivity) = 0.63333

**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.90476**

Overall Accuracy = 0.81429

### Confusion Matrix (Threshold Value = 4.675)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	19	11	30
Total Counts	21	49	70

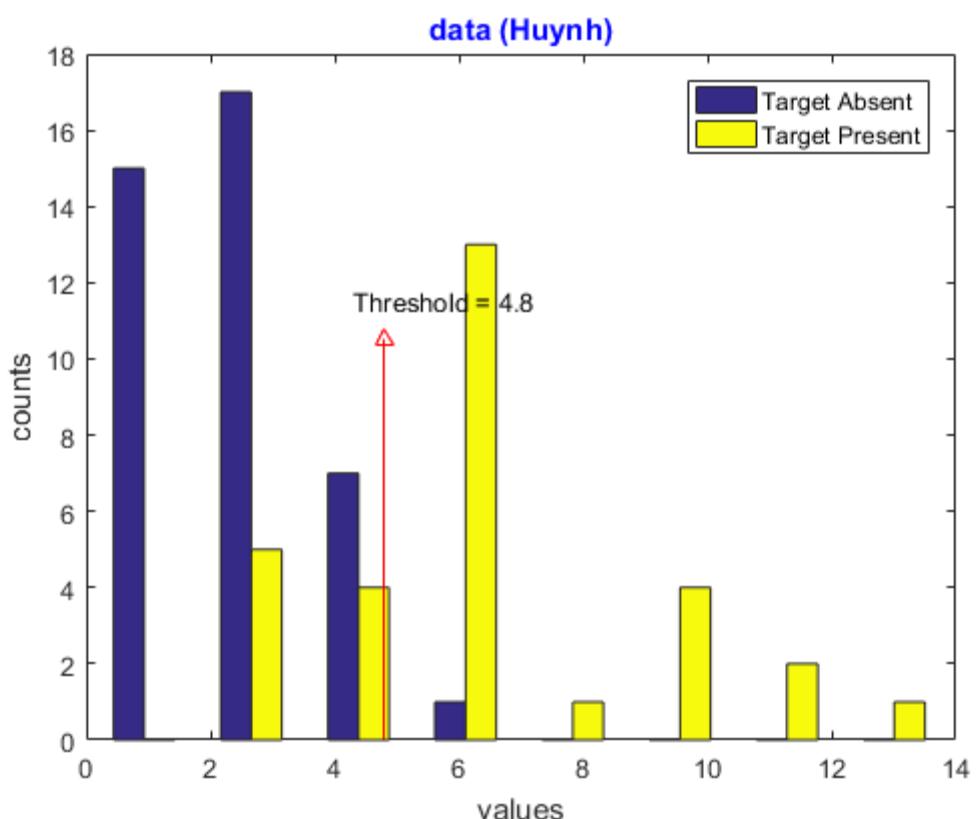
$$P_F = \frac{1}{20} \quad P_M = \frac{11}{30} \quad PPV = \frac{19}{21} \quad \text{err} = \frac{13}{70} \quad \text{acc} = \frac{57}{70}$$

## Summary of the analysis Hoque

data (Huynh)

Target Absent					Target Present				
3.025	0.652	4.905	1.055	4.705	6.858	2.857	5.937	1.96	6.754
2.224	3.253	4.388	1.793	1.953	4.322	5.682	13.872	3.787	12.073
2.971	1.294	1.199	4.88	1.78	6.435	6.864	7.844	10.159	10.047
2.683	1.02	1.669	1.437	2.824	4.541	5.95	11.633	5.485	1.826
2.685	1.496	1.148	2.633	3.263	5.415	10.257	9.453	5.99	4.101
3.904	1.195	2.592	2.388	2.921	3.036	6.854	6.877	3.42	6.913
5.272	1.567	2.59	3.746	1.956					
1.906	0.069	0.547	3.843	2.177					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.8

Target Absent					Target Present				
<b>5.272</b>	3.263	2.633	1.906	1.199	<b>13.872</b>	<b>9.453</b>	<b>6.854</b>	<b>5.682</b>	3.787
<b>4.905</b>	3.253	2.592	1.793	1.195	<b>12.073</b>	<b>7.844</b>	<b>6.754</b>	<b>5.485</b>	3.42
<b>4.88</b>	3.025	2.59	1.78	1.148	<b>11.633</b>	<b>6.913</b>	<b>6.435</b>	<b>5.415</b>	3.036
4.705	2.971	2.388	1.669	1.055	<b>10.257</b>	<b>6.877</b>	<b>5.99</b>	4.541	2.857
4.388	2.921	2.224	1.567	1.02	<b>10.159</b>	<b>6.864</b>	<b>5.95</b>	4.322	1.96
3.904	2.824	2.177	1.496	0.652	<b>10.047</b>	<b>6.858</b>	<b>5.937</b>	4.101	1.826
3.843	2.685	1.956	1.437	0.547					
3.746	2.683	1.953	1.294	0.069					

Number of samples above threshold = 3

Number of samples above threshold = 21

False Alarm rate : 3 in 40

Miss rate : 9 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.8

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.8**

Probability of correct TARGET detection (sensitivity) = 0.7

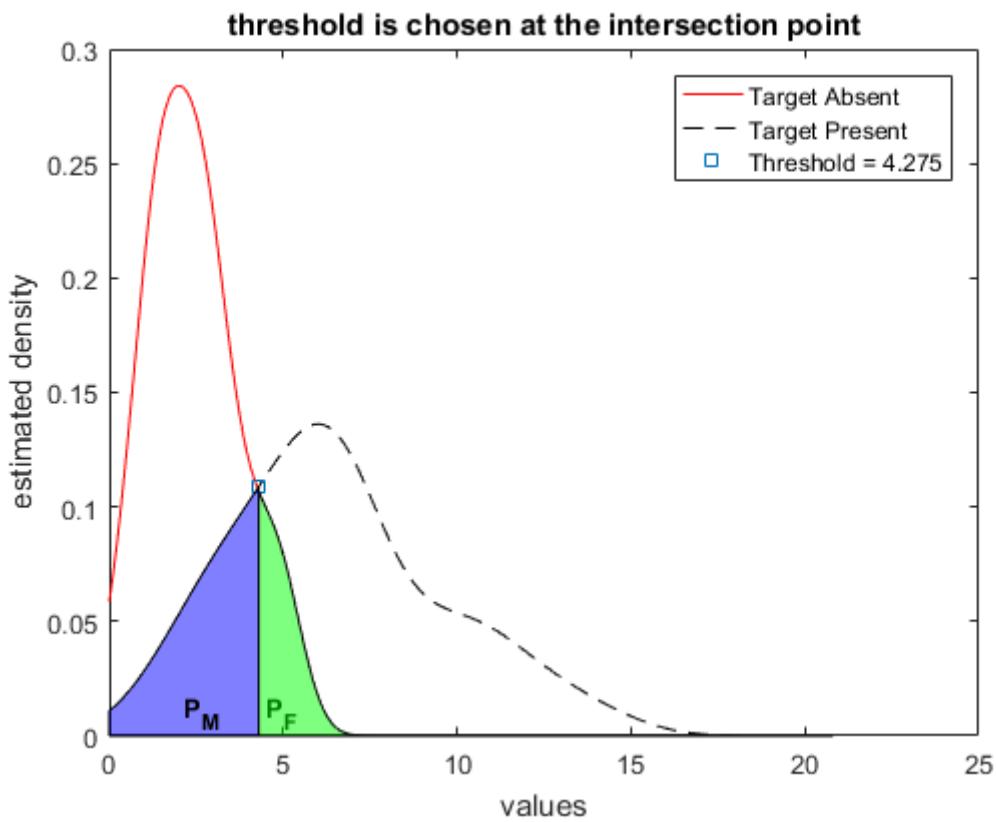
**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.875**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 4.275**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.272	3.263	2.633	1.906	1.199	13.872	9.453	6.854	5.682	3.787
4.905	3.253	2.592	1.793	1.195	12.073	7.844	6.754	5.485	3.42
4.88	3.025	2.59	1.78	1.148	11.633	6.913	6.435	5.415	3.036
4.705	2.971	2.388	1.669	1.055	10.257	6.877	5.99	4.541	2.857
4.388	2.921	2.224	1.567	1.02	10.159	6.864	5.95	4.322	1.96
3.904	2.824	2.177	1.496	0.652	10.047	6.858	5.937	4.101	1.826
3.843	2.685	1.956	1.437	0.547					
3.746	2.683	1.953	1.294	0.069					

**Number of samples above threshold = 5**

False Alarm rate : 5 in 40

**Number of samples above threshold = 23**

Miss rate : 7 in 30

(c) P. M. Shankar

## Summary of the analysis Huynh

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.275**

Probability of correct TARGET detection (sensitivity) = 0.76667

**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.875

**Probability of False Alarm = 1 - specificity = 0.125**

**Positive Predictive Value (PPV) = a posteriori probability = 0.82143**

Overall Accuracy = 0.82857

### Confusion Matrix (Threshold Value = 4.275)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	5	35	40
Target Present	23	7	30
Total Counts	28	42	70

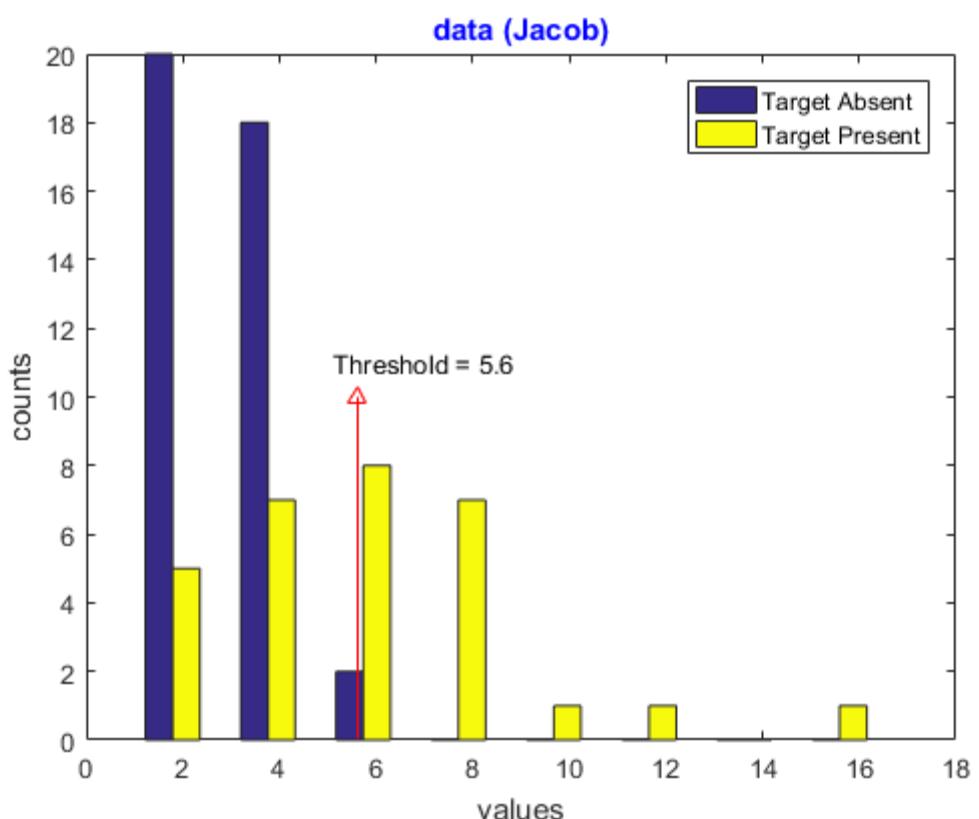
$$P_F = \frac{1}{8} \quad P_M = \frac{7}{30} \quad PPV = \frac{23}{28} \quad \text{err} = \frac{6}{35} \quad \text{acc} = \frac{29}{35}$$

## Summary of the analysis Huynh

data (Jacob)

Target Absent					Target Present				
2.131	2.18	1.93	4.195	3.168	7.1	2.623	6.976	4.021	2.053
1.76	4.128	2.197	2.5	2.46	5.892	2.487	5.344	7.591	4.782
3.573	2.449	2.014	4.317	2.671	11.265	5.518	5.085	6.963	3.825
4.447	1.709	4.043	0.937	1.473	9.057	16.581	7.807	5.332	1.709
3.046	3.17	2.966	4.762	3.822	2.106	3.463	3.065	4.729	6.414
0.803	4.741	4.36	3.561	2.83	7.639	4.498	4.871	4.712	8.445
3.743	0.919	1.802	2.773	0.842					
5.193	2.366	3.66	2.864	1.961					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.6

Target Absent					Target Present				
5.193	4.043	3.046	2.449	1.802	16.581	7.591	5.518	4.729	3.065
4.762	3.822	2.966	2.366	1.76	11.265	7.1	5.344	4.712	2.623
4.741	3.743	2.864	2.197	1.709	9.057	6.976	5.332	4.498	2.487
4.447	3.66	2.83	2.18	1.473	8.445	6.963	5.085	4.021	2.106
4.36	3.573	2.773	2.131	0.937	7.807	6.414	4.871	3.825	2.053
4.317	3.561	2.671	2.014	0.919	7.639	5.892	4.782	3.463	1.709
4.195	3.17	2.5	1.961	0.842					
4.128	3.168	2.46	1.93	0.803					

Number of samples above threshold = 0

Number of samples above threshold = 12

False Alarm rate : 0 in 40

Miss rate : 18 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.6

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.6**

Probability of correct TARGET detection (sensitivity) = 0.4

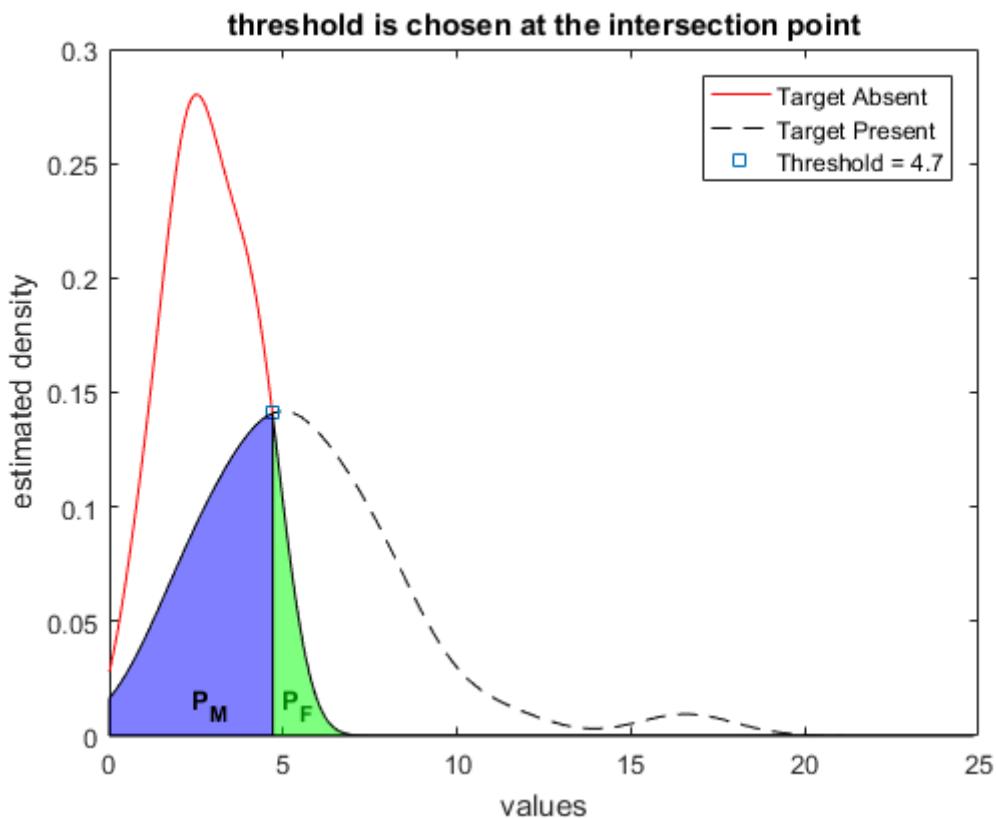
**Probability of Miss = 1 - sensitivity = 0.6**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.74286



**Sorted and Partitioned Data : Threshold at 4.7**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.193	4.043	3.046	2.449	1.802	16.581	7.591	5.518	4.729	3.065
4.762	3.822	2.966	2.366	1.76	11.265	7.1	5.344	4.712	2.623
4.741	3.743	2.864	2.197	1.709	9.057	6.976	5.332	4.498	2.487
4.447	3.66	2.83	2.18	1.473	8.445	6.963	5.085	4.021	2.106
4.36	3.573	2.773	2.131	0.937	7.807	6.414	4.871	3.825	2.053
4.317	3.561	2.671	2.014	0.919	7.639	5.892	4.782	3.463	1.709
4.195	3.17	2.5	1.961	0.842					
4.128	3.168	2.46	1.93	0.803					

**Number of samples above threshold = 3**

**Number of samples above threshold = 20**

False Alarm rate : 3 in 40

Miss rate : 10 in 30

**(c) P. M. Shankar**

## Summary of the analysis Jacob

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.7**

Probability of correct TARGET detection (sensitivity) = 0.66667

**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.86957**

Overall Accuracy = 0.81429

### Confusion Matrix (Threshold Value = 4.7)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	20	10	30
Total Counts	23	47	70

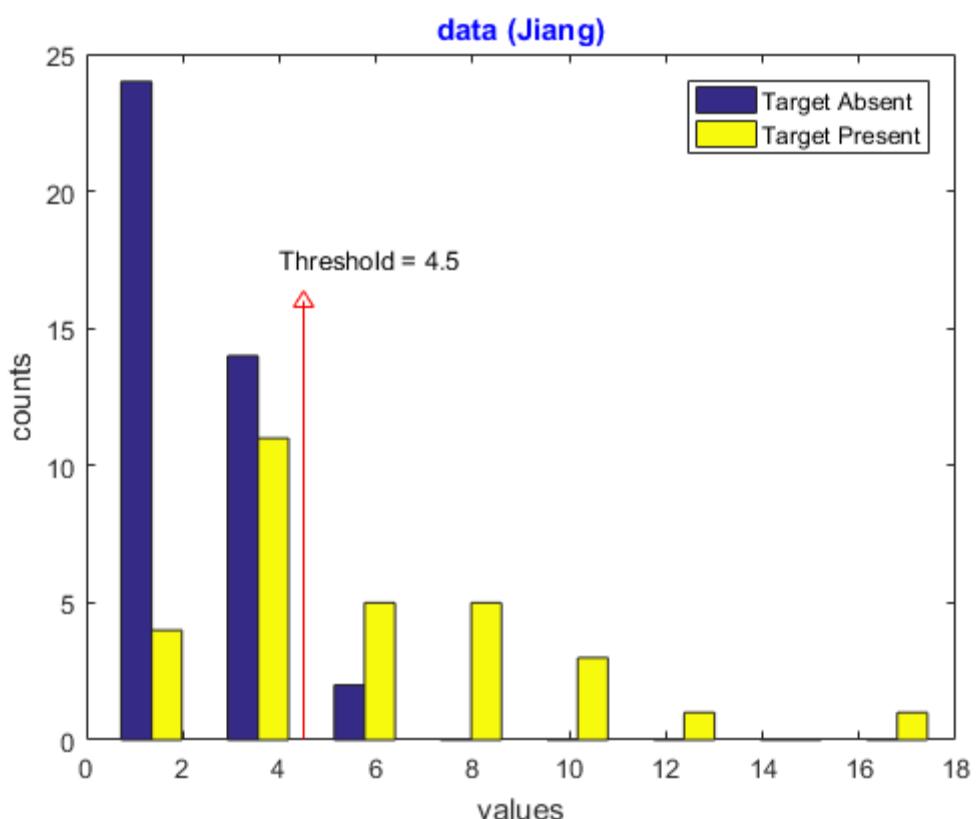
$$P_F = \frac{3}{40} \quad P_M = \frac{1}{3} \quad \text{PPV} = \frac{20}{23} \quad \text{err} = \frac{13}{70} \quad \text{acc} = \frac{57}{70}$$

## Summary of the analysis Jacob

data (Jiang)

Target Absent					Target Present				
0.376	0.669	1.422	0.846	3.035	5.793	2.786	2.345	4.371	11.747
4.696	0.389	1.961	4.465	1.884	11.104	2.01	6.781	6.196	9.741
1.616	2.864	1.681	4.168	1.172	2.611	9.008	8.742	3.101	3.452
3.375	0.702	1.284	2.865	1.083	7.544	4.668	3.709	4.1	6.347
0.83	2.81	5.036	0.249	1.391	7.676	4.366	1.487	0.514	4.085
1.001	1.428	2.999	2.247	0.338	9.838	3.063	7.516	17.889	3.486
3.519	1.64	1.937	1.498	2.966					
2.286	2.914	3.878	2.929	2.497					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.5

Target Absent					Target Present				
<b>5.036</b>	2.999	2.286	1.498	0.846	<b>17.889</b>	<b>8.742</b>	<b>6.196</b>	4.085	2.786
<b>4.696</b>	2.966	2.247	1.428	0.83	<b>11.747</b>	<b>7.676</b>	<b>5.793</b>	3.709	2.611
4.465	2.929	1.961	1.422	0.702	<b>11.104</b>	<b>7.544</b>	<b>4.668</b>	3.486	2.345
4.168	2.914	1.937	1.391	0.669	<b>9.838</b>	<b>7.516</b>	4.371	3.452	2.01
3.878	2.865	1.884	1.284	0.389	<b>9.741</b>	<b>6.781</b>	4.366	3.101	1.487
3.519	2.864	1.681	1.172	0.376	<b>9.008</b>	<b>6.347</b>	4.1	3.063	0.514
3.375	2.81	1.64	1.083	0.338					
3.035	2.497	1.616	1.001	0.249					

**Number of samples above threshold = 2**

**Number of samples above threshold = 15**

False Alarm rate : 2 in 40

Miss rate : 15 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 4.5

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.5**

Probability of correct TARGET detection (sensitivity) = 0.5

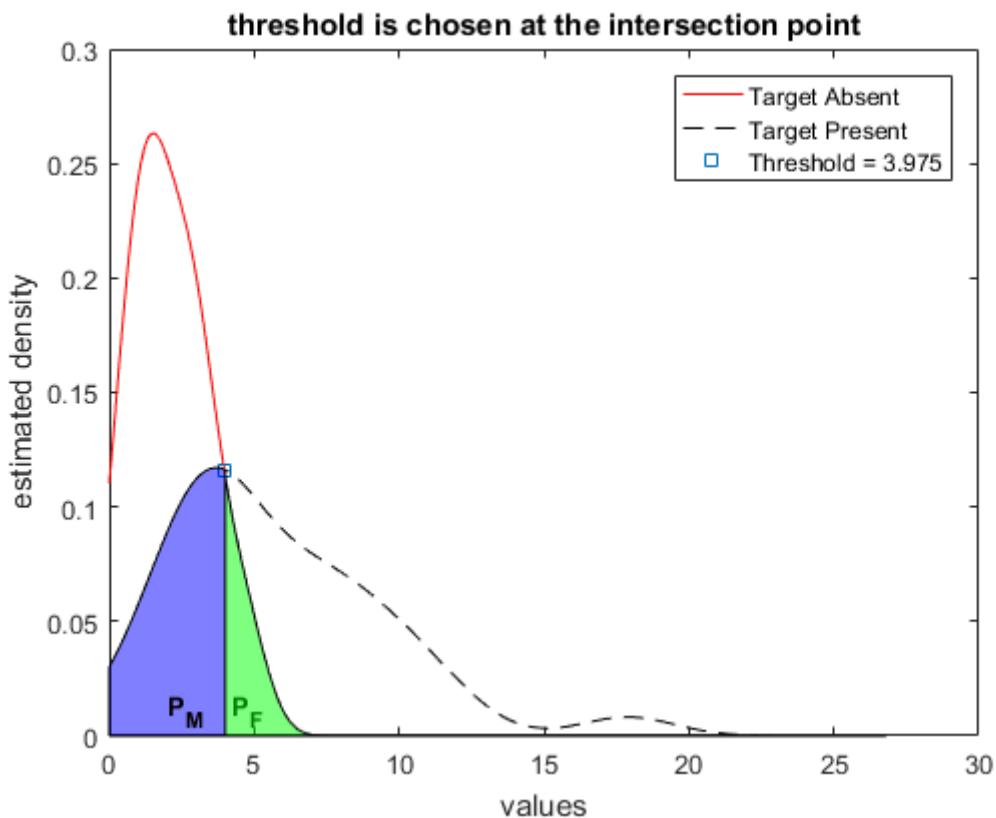
**Probability of Miss = 1 - sensitivity = 0.5**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.88235**

Overall Accuracy = 0.75714



**Sorted and Partitioned Data : Threshold at 3.975**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.036	2.999	2.286	1.498	0.846	17.889	8.742	6.196	4.085	2.786
4.696	2.966	2.247	1.428	0.83	11.747	7.676	5.793	3.709	2.611
4.465	2.929	1.961	1.422	0.702	11.104	7.544	4.668	3.486	2.345
4.168	2.914	1.937	1.391	0.669	9.838	7.516	4.371	3.452	2.01
3.878	2.865	1.884	1.284	0.389	9.741	6.781	4.366	3.101	1.487
3.519	2.864	1.681	1.172	0.376	9.008	6.347	4.1	3.063	0.514
3.375	2.81	1.64	1.083	0.338					
3.035	2.497	1.616	1.001	0.249					

**Number of samples above threshold = 4**

False Alarm rate : 4 in 40

**Number of samples above threshold = 19**

Miss rate : 11 in 30

(c) P. M. Shankar

## Summary of the analysis

Jiang

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.975**

Probability of correct TARGET detection (sensitivity) = 0.63333

**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.82609**

Overall Accuracy = 0.78571

### Confusion Matrix (Threshold Value = 3.975)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	19	11	30
Total Counts	23	47	70

$$P_F = \frac{1}{10} \quad P_M = \frac{11}{30} \quad PPV = \frac{19}{23} \quad \text{err} = \frac{3}{14} \quad \text{acc} = \frac{11}{14}$$

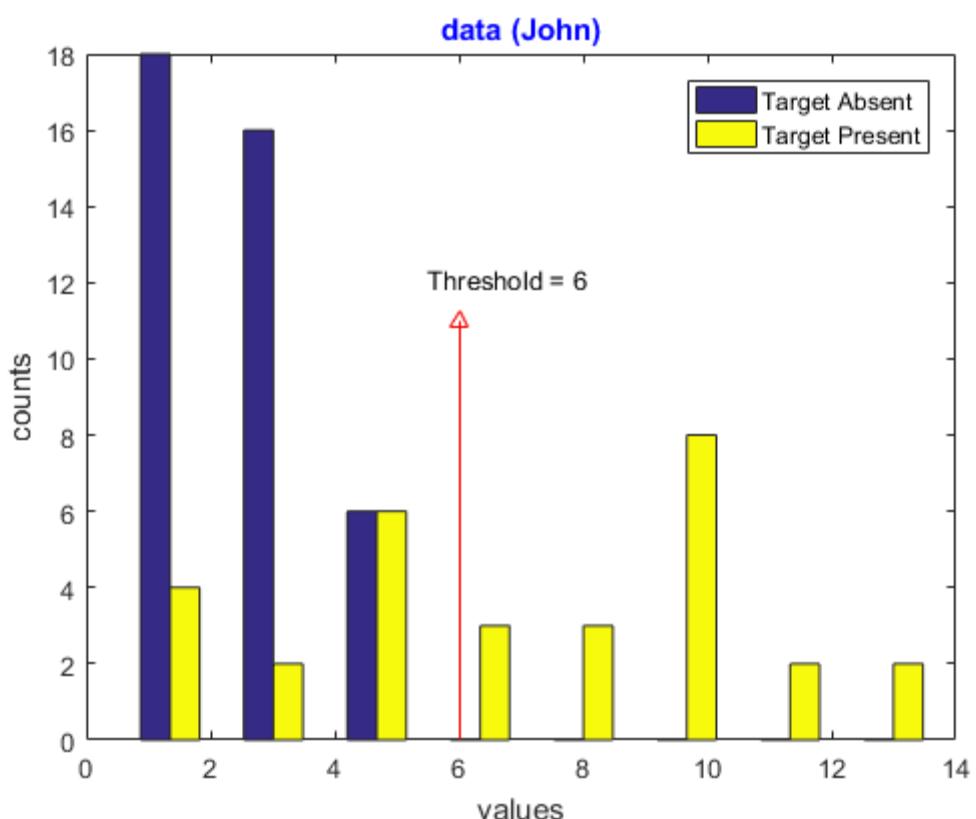
## Summary of the analysis

Jiang

**data (John)**

Target Absent					Target Present				
3.995	1.414	2.652	2.381	2.559	8.879	13.828	9.721	2.477	0.54
2.421	4.774	1.464	0.553	0.771	1.935	4.576	2.095	3.853	10.203
4.083	0.737	2.259	1.583	2.418	3.653	9.504	5.977	9.014	6.142
0.765	0.576	1.674	2.174	3.377	6.666	11.331	1.283	5.183	5.341
2.775	3.064	4.075	2.31	1.225	8.43	4.777	7.435	9.565	10.287
3.786	2.455	2.348	2.969	1.108	5.495	12.887	7.597	11.825	9.488
2.935	1.362	3.905	1.342	0.518					
2.674	1.949	1.192	1.709	5.434					

**(c) P. M. Shankar**



### Sorted and Partitioned Data : Threshold at 6

Target Absent					Target Present				
5.434	3.064	2.421	1.709	1.192	<b>13.828</b>	<b>9.721</b>	<b>8.43</b>	5.495	3.653
4.774	2.969	2.418	1.674	1.108	<b>12.887</b>	<b>9.565</b>	<b>7.597</b>	5.341	2.477
4.083	2.935	2.381	1.583	0.771	<b>11.825</b>	<b>9.504</b>	<b>7.435</b>	5.183	2.095
4.075	2.775	2.348	1.464	0.765	<b>11.331</b>	<b>9.488</b>	<b>6.666</b>	4.777	1.935
3.995	2.674	2.31	1.414	0.737	<b>10.287</b>	<b>9.014</b>	<b>6.142</b>	4.576	1.283
3.905	2.652	2.259	1.362	0.576	<b>10.203</b>	<b>8.879</b>	5.977	3.853	0.54
3.786	2.559	2.174	1.342	0.553					
3.377	2.455	1.949	1.225	0.518					

**Number of samples above threshold = 0**

**Number of samples above threshold = 17**

False Alarm rate : 0 in 40

Miss rate : 13 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 6

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6**

Probability of correct TARGET detection (sensitivity) = 0.56667

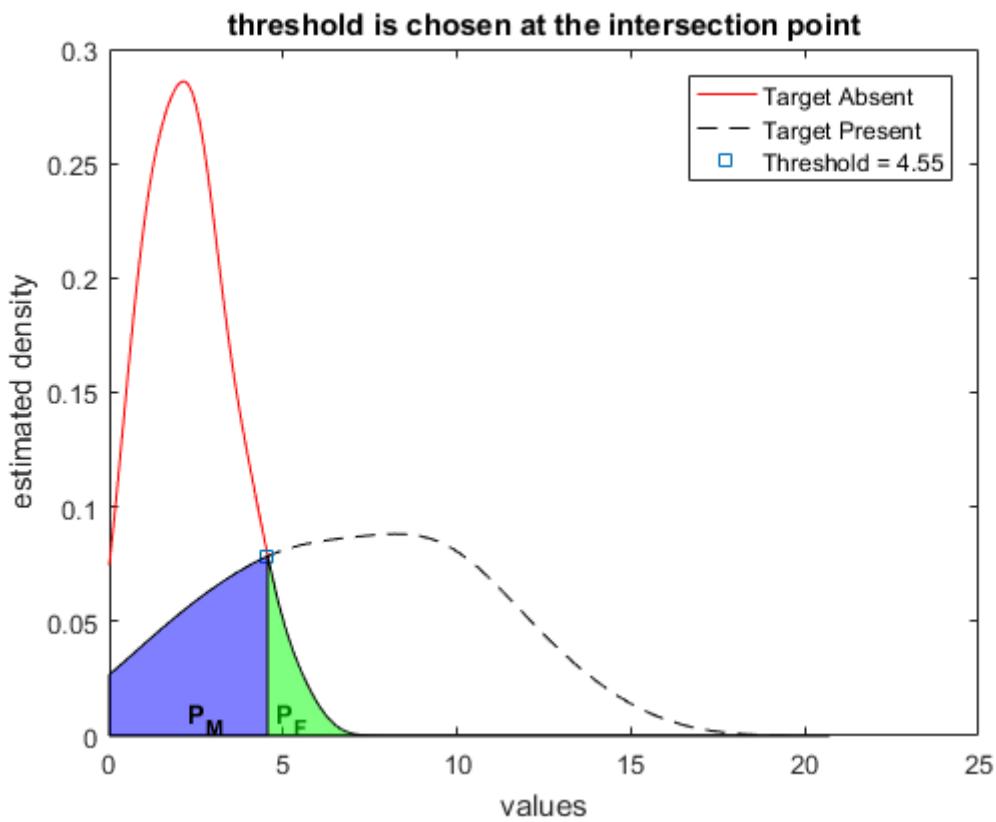
**Probability of Miss = 1 - sensitivity = 0.43333**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.81429



**Sorted and Partitioned Data : Threshold at 4.55**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.434	3.064	2.421	1.709	1.192	13.828	9.721	8.43	5.495	3.653
4.774	2.969	2.418	1.674	1.108	12.887	9.565	7.597	5.341	2.477
4.083	2.935	2.381	1.583	0.771	11.825	9.504	7.435	5.183	2.095
4.075	2.775	2.348	1.464	0.765	11.331	9.488	6.666	4.777	1.935
3.995	2.674	2.31	1.414	0.737	10.287	9.014	6.142	4.576	1.283
3.905	2.652	2.259	1.362	0.576	10.203	8.879	5.977	3.853	0.54
3.786	2.559	2.174	1.342	0.553					
3.377	2.455	1.949	1.225	0.518					

Number of samples above threshold = 2

False Alarm rate : 2 in 40

Number of samples above threshold = 23

Miss rate : 7 in 30

(c) P. M. Shankar

## Summary of the analysis

John

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.55**

Probability of correct TARGET detection (sensitivity) = 0.76667

**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.92**

Overall Accuracy = 0.87143

### Confusion Matrix (Threshold Value = 4.55)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	23	7	30
Total Counts	25	45	70

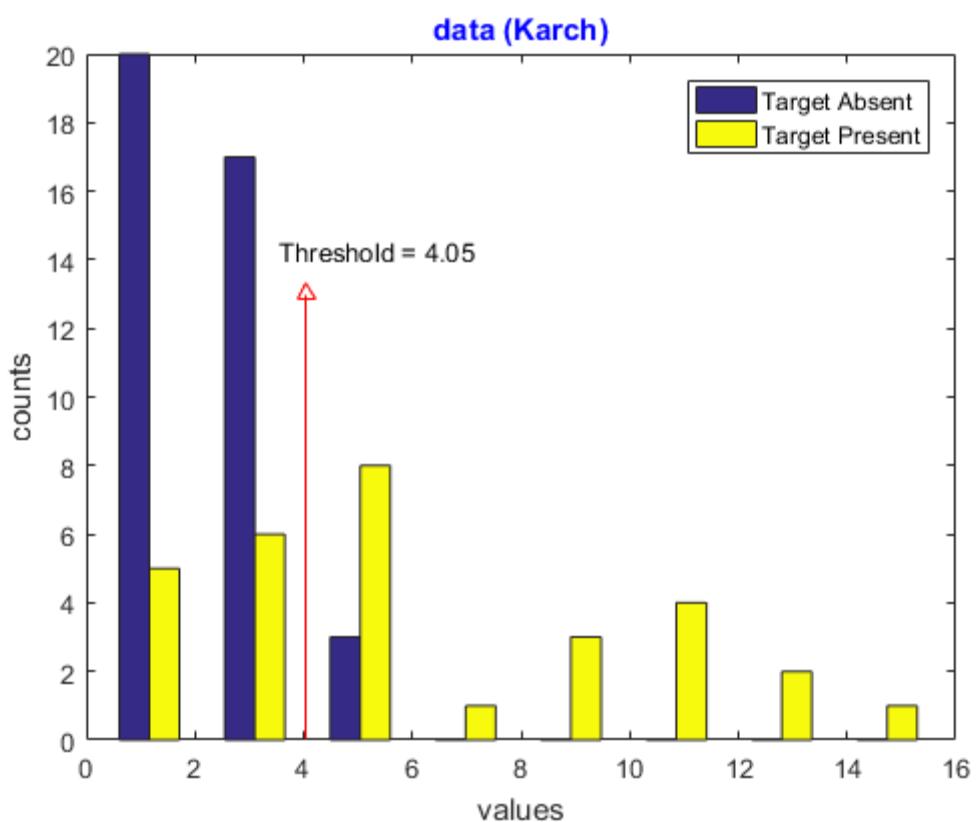
$$P_F = \frac{1}{20} \quad P_M = \frac{7}{30} \quad PPV = \frac{23}{25} \quad \text{err} = \frac{9}{70} \quad \text{acc} = \frac{61}{70}$$

## Summary of the analysis

John

data (Karch)									
Target Absent					Target Present				
4.931	2.262	3.125	2.795	0.693	5.135	1.21	3.526	5.284	11.267
1.287	1.892	2.335	1.497	1.71	11.564	2.731	8.605	1.01	5.54
2.893	4.018	2.731	1.426	1.068	1.245	3.598	3.182	12.453	5.234
2.091	1.248	0.592	3.151	2.462	4.221	12.709	1.389	9.907	1.548
2.641	2.855	2.686	3.423	0.197	2.563	9.912	4.786	3.481	5.713
2.52	4.244	0.847	4.063	1.376	8.205	15.707	4.48	8.067	7.463
0.538	3.586	1.505	1.547	2.916					
0.952	4.996	1.728	0.192	1.649					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.05

Target Absent					Target Present				
<b>4.996</b>	3.125	2.52	1.649	1.068	<b>15.707</b>	<b>9.907</b>	<b>5.54</b>	<b>4.221</b>	2.563
<b>4.931</b>	2.916	2.462	1.547	0.952	<b>12.709</b>	<b>8.605</b>	<b>5.284</b>	3.598	1.548
<b>4.244</b>	2.893	2.335	1.505	0.847	<b>12.453</b>	<b>8.205</b>	<b>5.234</b>	3.526	1.389
<b>4.063</b>	2.855	2.262	1.497	0.693	<b>11.564</b>	<b>8.067</b>	<b>5.135</b>	3.481	1.245
4.018	2.795	2.091	1.426	0.592	<b>11.267</b>	<b>7.463</b>	<b>4.786</b>	3.182	1.21
3.586	2.731	1.892	1.376	0.538	<b>9.912</b>	<b>5.713</b>	<b>4.48</b>	2.731	1.01
3.423	2.686	1.728	1.287	0.197					
3.151	2.641	1.71	1.248	0.192					

Number of samples above threshold = 4

Number of samples above threshold = 19

False Alarm rate : 4 in 40

Miss rate : 11 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.05

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.05**

Probability of correct TARGET detection (sensitivity) = 0.63333

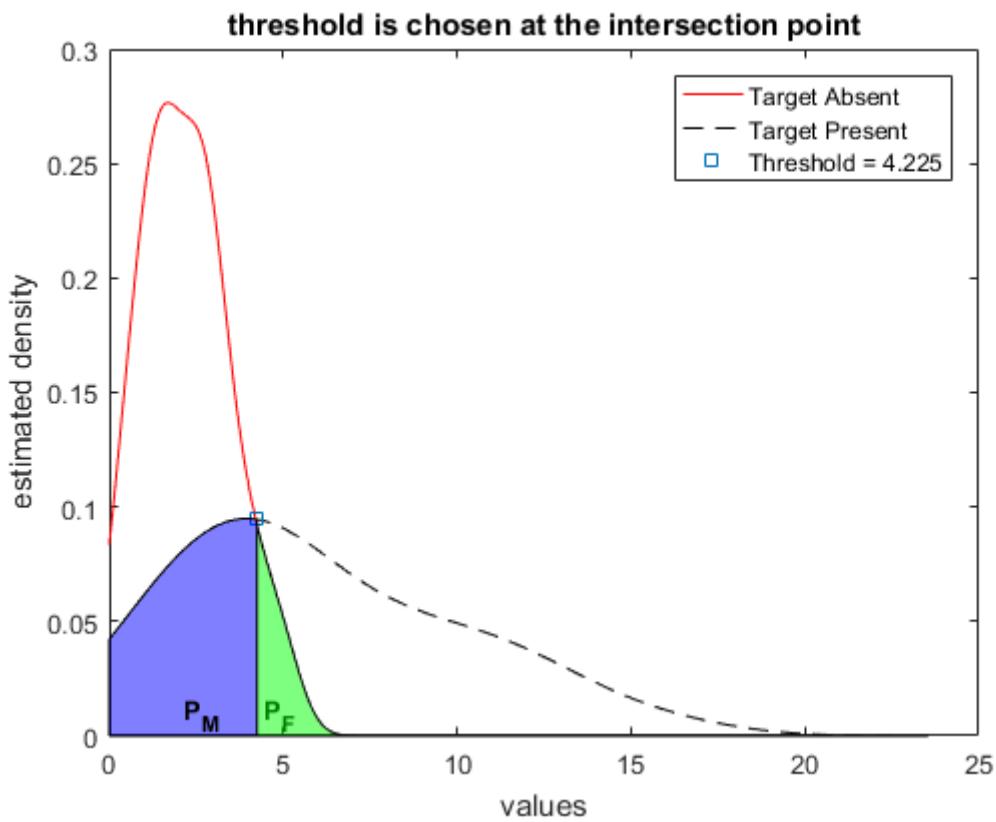
**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.82609**

Overall Accuracy = 0.78571



**Sorted and Partitioned Data : Threshold at 4.225**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>4.996</b>	3.125	2.52	1.649	1.068	<b>15.707</b>	<b>9.907</b>	<b>5.54</b>	4.221	2.563
<b>4.931</b>	2.916	2.462	1.547	0.952	<b>12.709</b>	<b>8.605</b>	<b>5.284</b>	3.598	1.548
<b>4.244</b>	2.893	2.335	1.505	0.847	<b>12.453</b>	<b>8.205</b>	<b>5.234</b>	3.526	1.389
4.063	2.855	2.262	1.497	0.693	<b>11.564</b>	<b>8.067</b>	<b>5.135</b>	3.481	1.245
4.018	2.795	2.091	1.426	0.592	<b>11.267</b>	<b>7.463</b>	<b>4.786</b>	3.182	1.21
3.586	2.731	1.892	1.376	0.538	<b>9.912</b>	<b>5.713</b>	<b>4.48</b>	2.731	1.01
3.423	2.686	1.728	1.287	0.197					
3.151	2.641	1.71	1.248	0.192					

**Number of samples above threshold = 3**

**Number of samples above threshold = 18**

False Alarm rate : 3 in 40

Miss rate : 12 in 30

**(c) P. M. Shankar**

## Summary of the analysis Karch

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.225**

Probability of correct TARGET detection (sensitivity) = 0.6

**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.85714**

Overall Accuracy = 0.78571

### Confusion Matrix (Threshold Value = 4.225)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	18	12	30
Total Counts	21	49	70

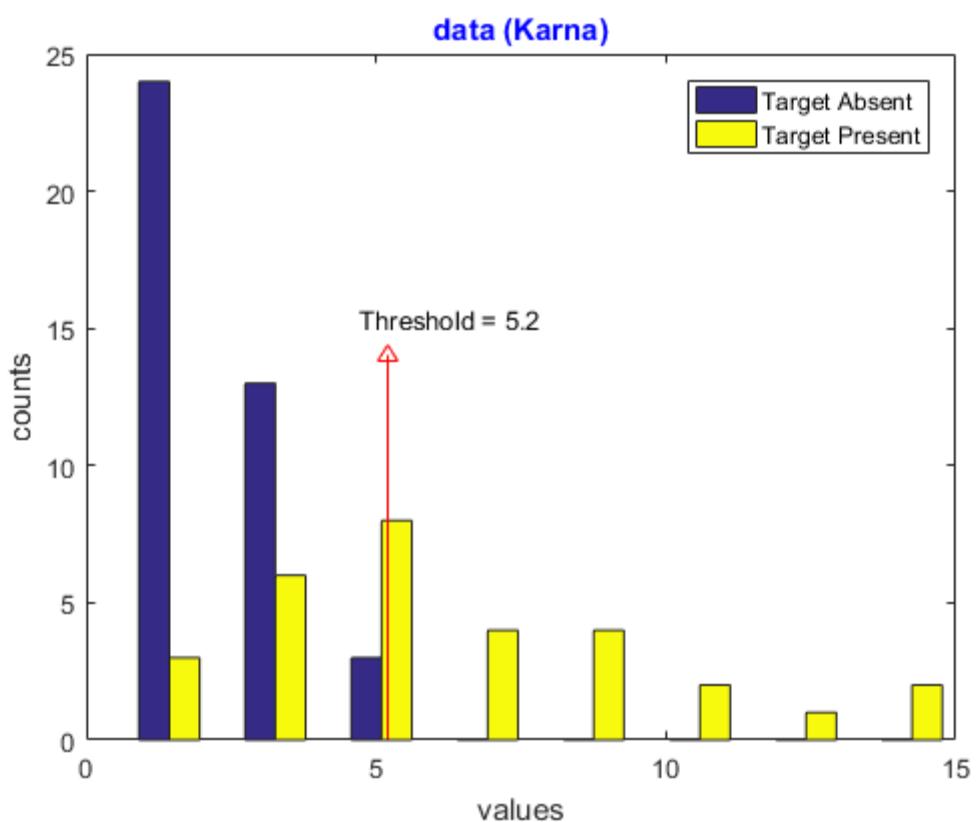
$$P_F = \frac{3}{40} \quad P_M = \frac{2}{5} \quad \text{PPV} = \frac{6}{7} \quad \text{err} = \frac{3}{14} \quad \text{acc} = \frac{11}{14}$$

## Summary of the analysis Karch

data (Karna)

Target Absent					Target Present				
2.276	2.221	1.284	0.924	2.543	8.464	12.397	15.161	9.649	2.959
3.85	0.855	4.715	4.492	1.971	13.514	4.138	5.492	7.675	6.731
3.654	4.082	1.923	3.231	1.715	1.408	9.531	4.576	10.499	0.517
0.745	2.041	2.306	2.952	1.545	10.174	2.454	4.24	3.503	2.81
1.99	2.86	2.795	2.363	0.988	4.953	5.383	5.338	3.223	7.18
3.208	1.996	2.212	4.87	2.034	5.243	5.878	8.929	6.316	0.801
2.553	1.616	1.298	1.355	1.925					
2.363	1.085	1.806	2.717	1.405					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.2

Target Absent					Target Present				
4.87	2.952	2.306	1.971	1.355	15.161	9.531	6.316	4.953	2.959
4.715	2.86	2.276	1.925	1.298	13.514	8.929	5.878	4.576	2.81
4.492	2.795	2.221	1.923	1.284	12.397	8.464	5.492	4.24	2.454
4.082	2.717	2.212	1.806	1.085	10.499	7.675	5.383	4.138	1.408
3.85	2.553	2.041	1.715	0.988	10.174	7.18	5.338	3.503	0.801
3.654	2.543	2.034	1.616	0.924	9.649	6.731	5.243	3.223	0.517
3.231	2.363	1.996	1.545	0.855					
3.208	2.363	1.99	1.405	0.745					

Number of samples above threshold = 0

Number of samples above threshold = 18

False Alarm rate : 0 in 40

Miss rate : 12 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.2

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.2**

Probability of correct TARGET detection (sensitivity) = 0.6

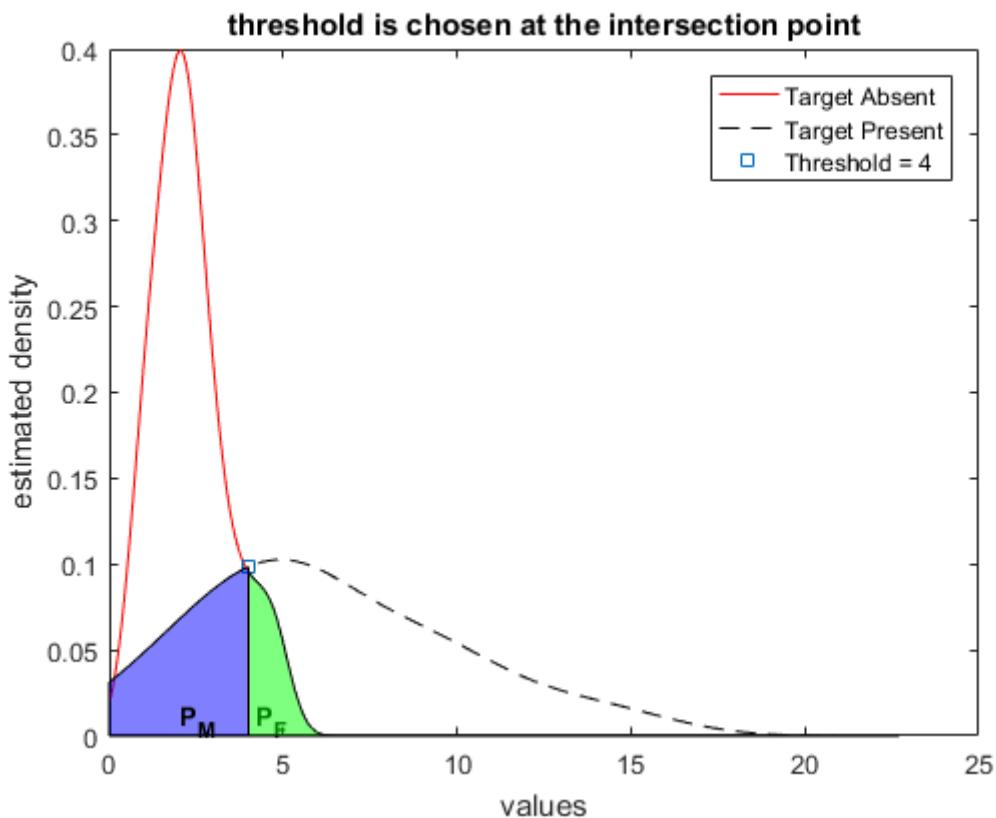
**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 4**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.87	2.952	2.306	1.971	1.355	15.161	9.531	6.316	4.953	2.959
4.715	2.86	2.276	1.925	1.298	13.514	8.929	5.878	4.576	2.81
4.492	2.795	2.221	1.923	1.284	12.397	8.464	5.492	4.24	2.454
4.082	2.717	2.212	1.806	1.085	10.499	7.675	5.383	4.138	1.408
3.85	2.553	2.041	1.715	0.988	10.174	7.18	5.338	3.503	0.801
3.654	2.543	2.034	1.616	0.924	9.649	6.731	5.243	3.223	0.517
3.231	2.363	1.996	1.545	0.855					
3.208	2.363	1.99	1.405	0.745					

Number of samples above threshold = 4

Number of samples above threshold = 22

False Alarm rate : 4 in 40

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis Karna

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.84615**

Overall Accuracy = 0.82857

### Confusion Matrix (Threshold Value = 4)

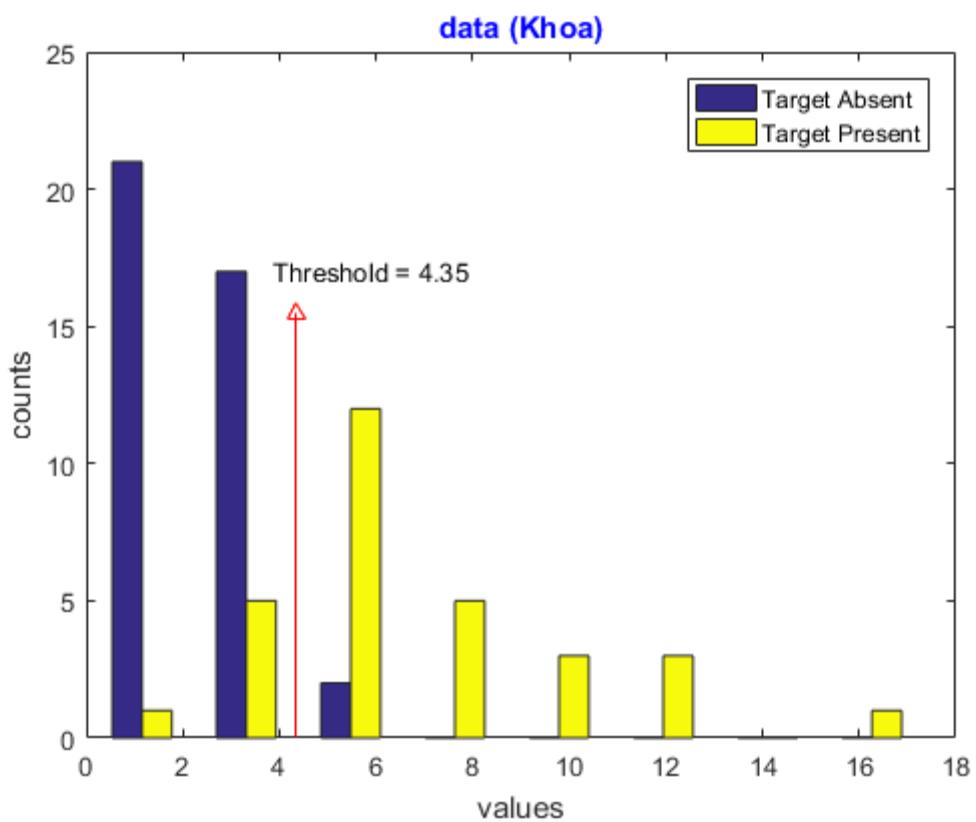
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	22	8	30
Total Counts	26	44	70

$$P_F = \frac{1}{10} \quad P_M = \frac{4}{15} \quad PPV = \frac{11}{13} \quad \text{err} = \frac{6}{35} \quad \text{acc} = \frac{29}{35}$$

## Summary of the analysis Karna

data (Khoa)									
Target Absent					Target Present				
0.753	2.667	0.077	2.049	2.725	5.034	17.343	3.633	5.114	11.697
1.805	2.932	2.094	1.534	3.352	9.517	7.23	6.109	8.597	5.222
1.641	1.596	1.934	3.724	2.37	4.429	9.902	3.322	6.368	7.454
1.544	1.889	2.501	1.55	1.385	6.569	4.839	7.78	10.374	5.568
4.04	3.234	4.681	0.986	2.925	5.815	3.001	5.454	10.94	5.036
2.493	0.74	2.207	2.562	2.944	3.253	4.039	1.772	11.709	4.961
1.592	1.876	2.636	0.947	5.275					
2.344	0.464	2.61	2.585	2.204					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.35

Target Absent					Target Present				
<b>5.275</b>	2.925	2.493	1.889	1.534	<b>17.343</b>	<b>9.517</b>	<b>6.368</b>	<b>5.114</b>	4.039
<b>4.681</b>	2.725	2.37	1.876	1.385	<b>11.709</b>	<b>8.597</b>	<b>6.109</b>	<b>5.036</b>	3.633
4.04	2.667	2.344	1.805	0.986	<b>11.697</b>	<b>7.78</b>	<b>5.815</b>	<b>5.034</b>	3.322
3.724	2.636	2.207	1.641	0.947	<b>10.94</b>	<b>7.454</b>	<b>5.568</b>	<b>4.961</b>	3.253
3.352	2.61	2.204	1.596	0.753	<b>10.374</b>	<b>7.23</b>	<b>5.454</b>	<b>4.839</b>	3.001
3.234	2.585	2.094	1.592	0.74	<b>9.902</b>	<b>6.569</b>	<b>5.222</b>	<b>4.429</b>	1.772
2.944	2.562	2.049	1.55	0.464					
2.932	2.501	1.934	1.544	0.077					

Number of samples above threshold = 2

Number of samples above threshold = 24

False Alarm rate : 2 in 40

Miss rate : 6 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.35

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.35**

Probability of correct TARGET detection (sensitivity) = 0.8

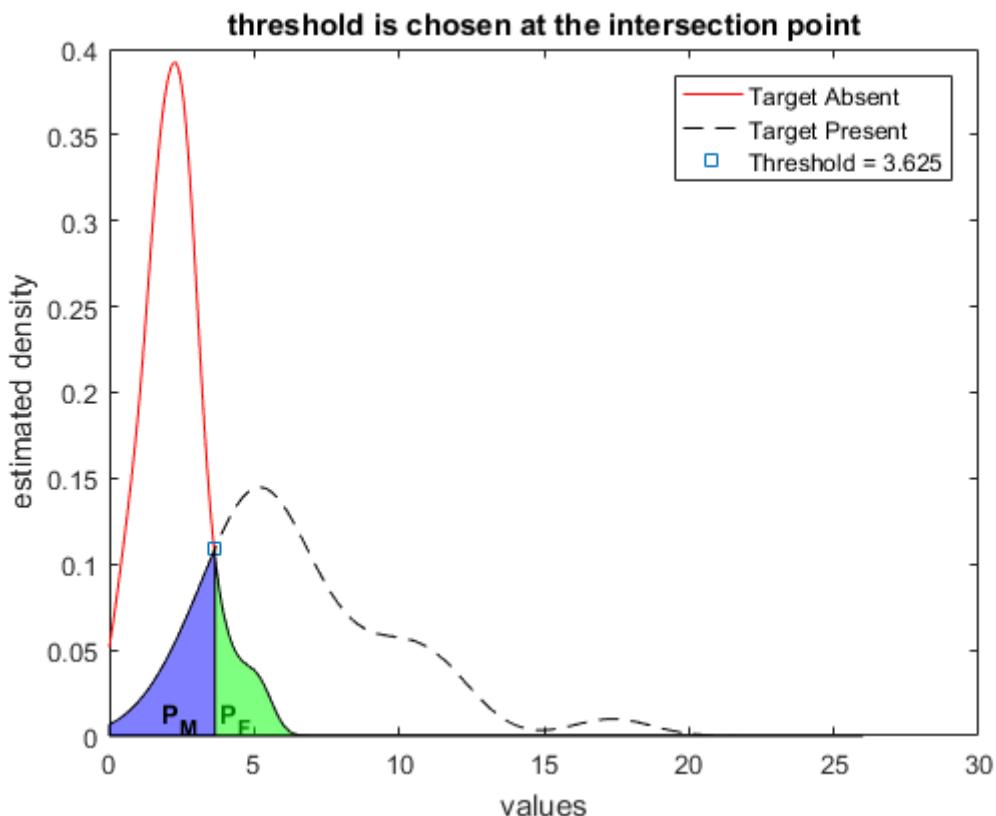
**Probability of Miss = 1 - sensitivity = 0.2**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.92308**

Overall Accuracy = 0.88571



**Sorted and Partitioned Data : Threshold at 3.625**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.275	2.925	2.493	1.889	1.534	17.343	9.517	6.368	5.114	4.039
4.681	2.725	2.37	1.876	1.385	11.709	8.597	6.109	5.036	3.633
4.04	2.667	2.344	1.805	0.986	11.697	7.78	5.815	5.034	3.322
3.724	2.636	2.207	1.641	0.947	10.94	7.454	5.568	4.961	3.253
3.352	2.61	2.204	1.596	0.753	10.374	7.23	5.454	4.839	3.001
3.234	2.585	2.094	1.592	0.74	9.902	6.569	5.222	4.429	1.772
2.944	2.562	2.049	1.55	0.464					
2.932	2.501	1.934	1.544	0.077					

Number of samples above threshold = 4

Number of samples above threshold = 26

False Alarm rate : 4 in 40

Miss rate : 4 in 30

(c) P. M. Shankar

## Summary of the analysis Khoa

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.625**

Probability of correct TARGET detection (sensitivity) = 0.86667

**Probability of Miss = 1 - sensitivity = 0.13333**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.86667**

Overall Accuracy = 0.88571

### Confusion Matrix (Threshold Value = 3.625)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	26	4	30
Total Counts	30	40	70

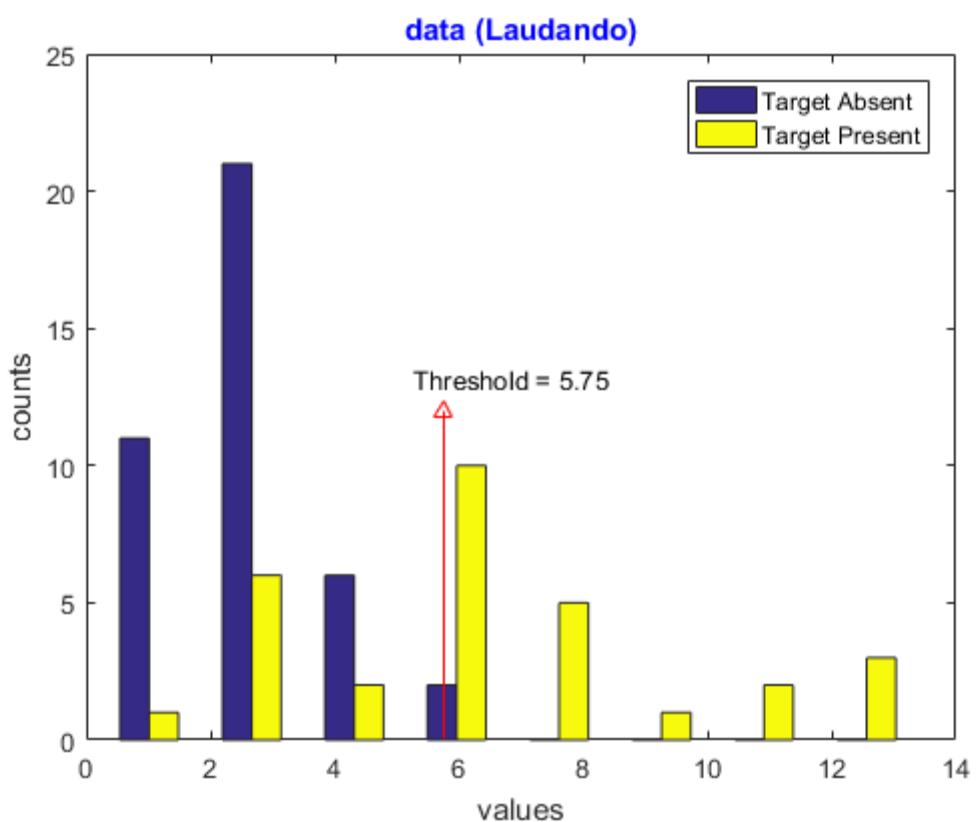
$$P_F = \frac{1}{10} \quad P_M = \frac{2}{15} \quad PPV = \frac{13}{15} \quad \text{err} = \frac{4}{35} \quad \text{acc} = \frac{31}{35}$$

## Summary of the analysis Khoa

data (Laudando)

Target Absent					Target Present				
1.619	2.706	1.754	1.508	0.954	3.112	6.051	13.388	2.126	12.644
2.638	4.29	2.156	0.586	4.214	3.227	11.476	9.855	10.663	2.428
3.445	1.804	1.11	2.615	0.189	3.239	5.678	8.321	5.633	7.596
3.992	1.707	4.048	3.1	2.412	5.231	5.827	3.885	7.371	7.86
3.189	2.795	2.822	4.19	2.632	4.386	12.817	5.372	6.451	1.918
2.921	1.496	1.195	3.308	2.116	5.214	7.057	5.659	1.197	5.297
3.031	5.758	2.377	5.813	2.796					
3.987	3.409	3.122	2.752	2.219					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.75

Target Absent					Target Present				
<b>5.813</b>	3.445	2.822	2.412	1.619	<b>13.388</b>	<b>8.321</b>	<b>6.051</b>	5.297	3.227
<b>5.758</b>	3.409	2.796	2.377	1.508	<b>12.817</b>	<b>7.86</b>	<b>5.827</b>	5.231	3.112
4.29	3.308	2.795	2.219	1.496	<b>12.644</b>	<b>7.596</b>	5.678	5.214	2.428
4.214	3.189	2.752	2.156	1.195	<b>11.476</b>	<b>7.371</b>	5.659	4.386	2.126
4.19	3.122	2.706	2.116	1.11	<b>10.663</b>	<b>7.057</b>	5.633	3.885	1.918
4.048	3.1	2.638	1.804	0.954	<b>9.855</b>	<b>6.451</b>	5.372	3.239	1.197
3.992	3.031	2.632	1.754	0.586					
3.987	2.921	2.615	1.707	0.189					

**Number of samples above threshold = 2**

**Number of samples above threshold = 14**

False Alarm rate : 2 in 40

Miss rate : 16 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 5.75

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.75**

Probability of correct TARGET detection (sensitivity) = 0.46667

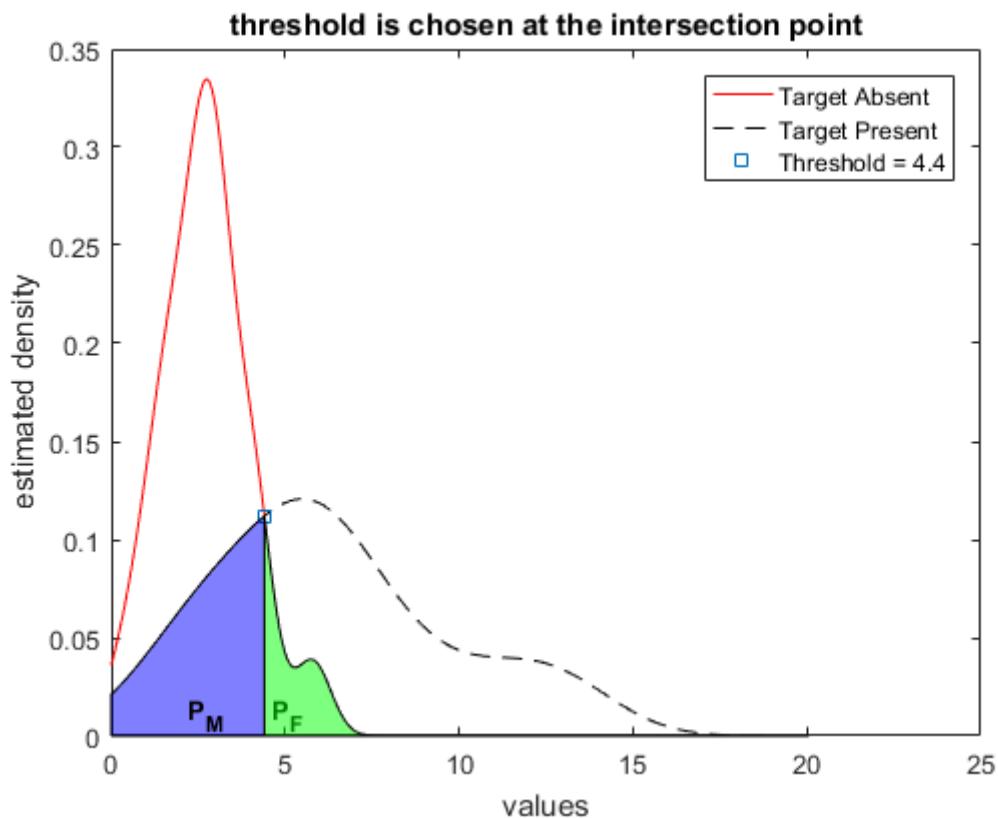
**Probability of Miss = 1 - sensitivity = 0.53333**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.875**

Overall Accuracy = 0.74286



**Sorted and Partitioned Data : Threshold at 4.4**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.813	3.445	2.822	2.412	1.619	13.388	8.321	6.051	5.297	3.227
5.758	3.409	2.796	2.377	1.508	12.817	7.86	5.827	5.231	3.112
4.29	3.308	2.795	2.219	1.496	12.644	7.596	5.678	5.214	2.428
4.214	3.189	2.752	2.156	1.195	11.476	7.371	5.659	4.386	2.126
4.19	3.122	2.706	2.116	1.11	10.663	7.057	5.633	3.885	1.918
4.048	3.1	2.638	1.804	0.954	9.855	6.451	5.372	3.239	1.197
3.992	3.031	2.632	1.754	0.586					
3.987	2.921	2.615	1.707	0.189					

**Number of samples above threshold = 2**

False Alarm rate : 2 in 40

**Number of samples above threshold = 21**

Miss rate : 9 in 30

(c) P. M. Shankar

## Summary of the analysis Laudando

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.4**

Probability of correct TARGET detection (sensitivity) = 0.7

**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.91304**

Overall Accuracy = 0.84286

### Confusion Matrix (Threshold Value = 4.4)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	21	9	30
Total Counts	23	47	70

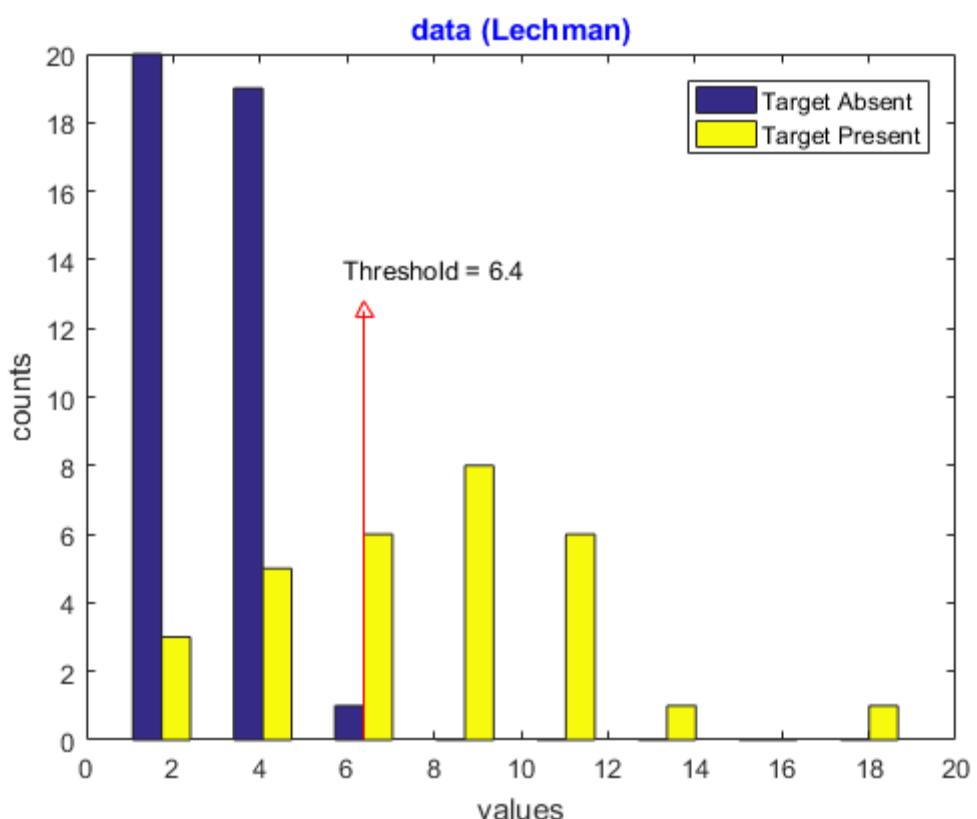
$$P_F = \frac{1}{20} \quad P_M = \frac{3}{10} \quad PPV = \frac{21}{23} \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

## Summary of the analysis Laudando

data (Lechman)

Target Absent					Target Present				
1.713	1.823	4.573	2.568	2.064	8.708	10.625	7.995	8.127	10.413
4.46	5.691	3.545	3.009	2.327	6.653	2.975	13.302	1.335	11.265
3.803	4.891	4.219	0.572	2.345	6.846	6.076	10.79	8.417	5.686
4.12	1.336	4.061	2.216	3.306	10.25	11.119	8.628	19.169	2.964
1.069	3.167	1.386	1.871	0.611	2.682	4.327	9.226	8.882	7.216
4.632	3.287	1.997	4.936	3.133	5.616	7.947	1.864	4.704	4.392
1.761	0.713	3.589	3.693	2.728					
2.412	1.501	3.182	1.472	2.975					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 6.4

Target Absent					Target Present				
5.691	4.061	3.167	2.327	1.501	19.169	10.413	8.417	6.653	4.327
4.936	3.803	3.133	2.216	1.472	13.302	10.25	8.127	6.076	2.975
4.891	3.693	3.009	2.064	1.386	11.265	9.226	7.995	5.686	2.964
4.632	3.589	2.975	1.997	1.336	11.119	8.882	7.947	5.616	2.682
4.573	3.545	2.728	1.871	1.069	10.79	8.708	7.216	4.704	1.864
4.46	3.306	2.568	1.823	0.713	10.625	8.628	6.846	4.392	1.335
4.219	3.287	2.412	1.761	0.611					
4.12	3.182	2.345	1.713	0.572					

**Number of samples above threshold = 0**

**Number of samples above threshold = 19**

False Alarm rate : 0 in 40

Miss rate : 11 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 6.4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6.4**

Probability of correct TARGET detection (sensitivity) = 0.63333

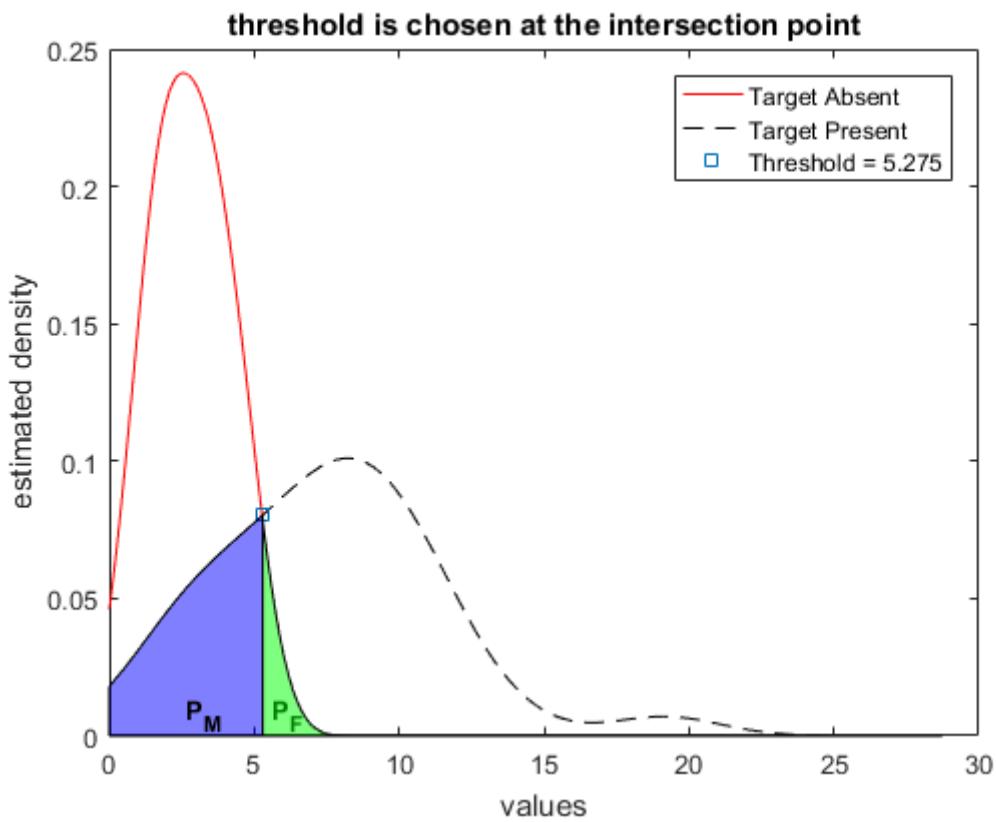
**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.84286



**Sorted and Partitioned Data : Threshold at 5.275**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>5.691</b>	4.061	3.167	2.327	1.501	<b>19.169</b>	<b>10.413</b>	<b>8.417</b>	<b>6.653</b>	4.327
4.936	3.803	3.133	2.216	1.472	<b>13.302</b>	<b>10.25</b>	<b>8.127</b>	<b>6.076</b>	2.975
4.891	3.693	3.009	2.064	1.386	<b>11.265</b>	<b>9.226</b>	<b>7.995</b>	<b>5.686</b>	2.964
4.632	3.589	2.975	1.997	1.336	<b>11.119</b>	<b>8.882</b>	<b>7.947</b>	<b>5.616</b>	2.682
4.573	3.545	2.728	1.871	1.069	<b>10.79</b>	<b>8.708</b>	<b>7.216</b>	4.704	1.864
4.46	3.306	2.568	1.823	0.713	<b>10.625</b>	<b>8.628</b>	<b>6.846</b>	4.392	1.335
4.219	3.287	2.412	1.761	0.611					
4.12	3.182	2.345	1.713	0.572					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 22**

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis Lechman

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.275**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95652**

Overall Accuracy = 0.87143

### Confusion Matrix (Threshold Value = 5.275)

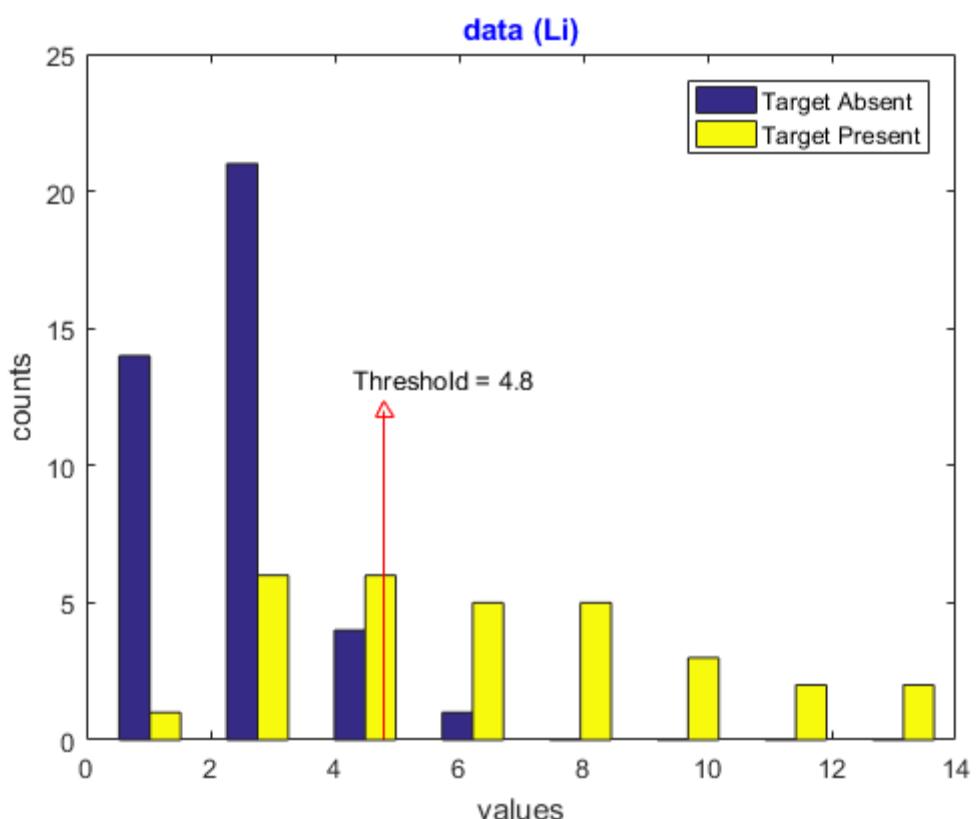
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	22	8	30
Total Counts	23	47	70

$$P_F = \frac{1}{40} \quad P_M = \frac{4}{15} \quad PPV = \frac{22}{23} \quad \text{err} = \frac{9}{70} \quad \text{acc} = \frac{61}{70}$$

## Summary of the analysis Lechman

data (Li)									
Target Absent					Target Present				
3.035	0.868	1.477	5.535	3.165	12.015	9.05	0.606	7.415	5.307
3.178	2.767	3.175	2.628	2.437	7.791	3.881	2.108	2.624	3.734
0.48	2.441	0.628	3.73	3.733	14.022	8.661	5.467	3.944	4.899
3.578	2.703	1.56	2.691	0.158	10.349	2.491	12.295	8.392	11.989
1.421	3.142	0.922	2.862	4.563	5.744	5.787	5.682	3.285	3
3.553	3.633	1.877	1.98	2.49	3.72	9.975	6.337	7.514	2.388
3.323	2.541	2.55	1.162	0.313					
2.913	0.906	1.531	1.539	3.275					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.8

Target Absent					Target Present				
<b>5.535</b>	3.275	2.767	2.437	1.162	<b>14.022</b>	<b>9.05</b>	<b>6.337</b>	<b>4.899</b>	3
4.563	3.178	2.703	1.98	0.922	<b>12.295</b>	<b>8.661</b>	<b>5.787</b>	3.944	2.624
3.733	3.175	2.691	1.877	0.906	<b>12.015</b>	<b>8.392</b>	<b>5.744</b>	3.881	2.491
3.73	3.165	2.628	1.56	0.868	<b>11.989</b>	<b>7.791</b>	<b>5.682</b>	3.734	2.388
3.633	3.142	2.55	1.539	0.628	<b>10.349</b>	<b>7.514</b>	<b>5.467</b>	3.72	2.108
3.578	3.035	2.541	1.531	0.48	<b>9.975</b>	<b>7.415</b>	<b>5.307</b>	3.285	0.606
3.553	2.913	2.49	1.477	0.313					
3.323	2.862	2.441	1.421	0.158					

**Number of samples above threshold = 1**

**Number of samples above threshold = 19**

False Alarm rate : 1 in 40

Miss rate : 11 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 4.8

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.8**

Probability of correct TARGET detection (sensitivity) = 0.63333

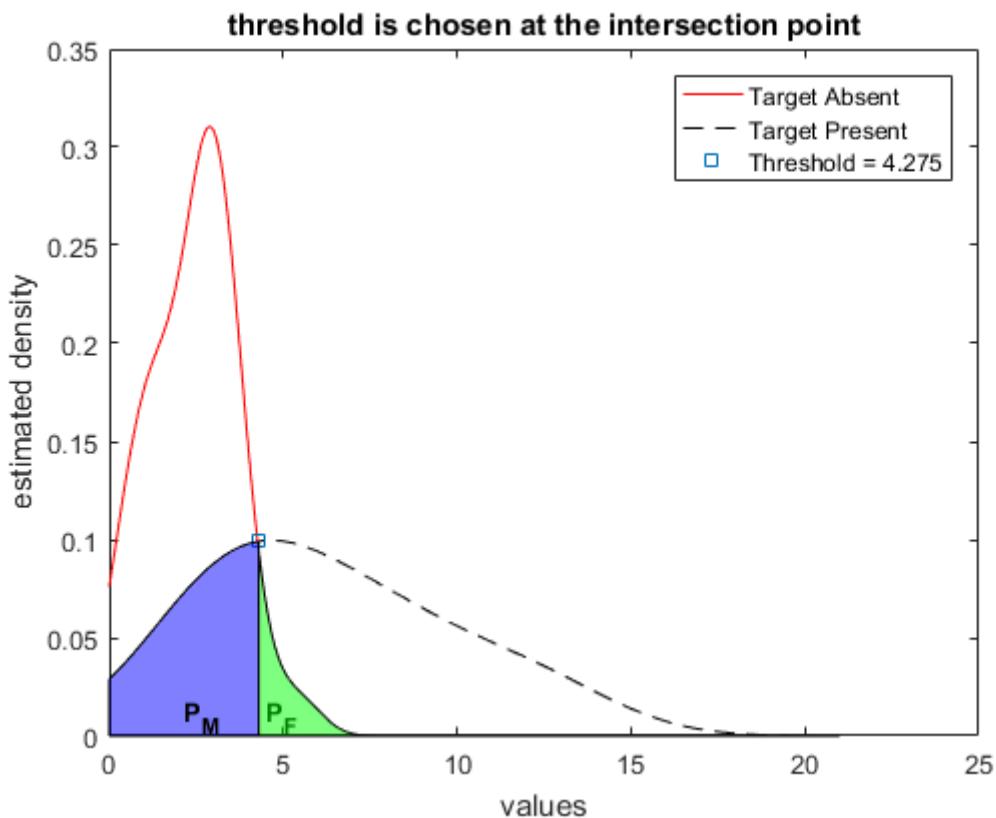
**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 4.275**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.535	3.275	2.767	2.437	1.162	14.022	9.05	6.337	4.899	3
4.563	3.178	2.703	1.98	0.922	12.295	8.661	5.787	3.944	2.624
3.733	3.175	2.691	1.877	0.906	12.015	8.392	5.744	3.881	2.491
3.73	3.165	2.628	1.56	0.868	11.989	7.791	5.682	3.734	2.388
3.633	3.142	2.55	1.539	0.628	10.349	7.514	5.467	3.72	2.108
3.578	3.035	2.541	1.531	0.48	9.975	7.415	5.307	3.285	0.606
3.553	2.913	2.49	1.477	0.313					
3.323	2.862	2.441	1.421	0.158					

**Number of samples above threshold = 2**

**Number of samples above threshold = 19**

False Alarm rate : 2 in 40

Miss rate : 11 in 30

**(c) P. M. Shankar**

## Summary of the analysis

Li

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.275**

Probability of correct TARGET detection (sensitivity) = 0.63333

**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.90476**

Overall Accuracy = 0.81429

### Confusion Matrix (Threshold Value = 4.275)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	19	11	30
Total Counts	21	49	70

$$P_F = \frac{1}{20} \quad P_M = \frac{11}{30} \quad PPV = \frac{19}{21} \quad \text{err} = \frac{13}{70} \quad \text{acc} = \frac{57}{70}$$

## Summary of the analysis

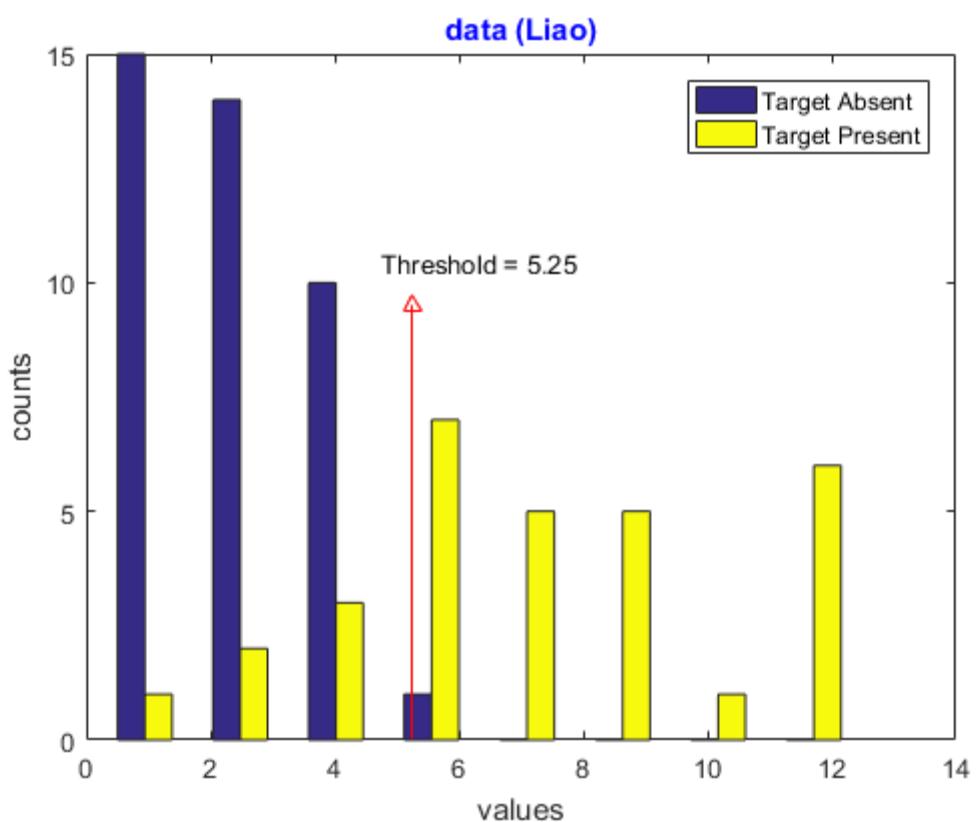
Li

p m shankar

data (Liao)

Target Absent					Target Present				
2.94	1.621	4.601	4.17	0.984	4.8	5.372	8.132	11.308	9.632
3.939	4.087	1.548	1.752	0.987	6.628	6.44	4.153	12.246	3.282
0.466	1.289	2.652	0.173	1.659	8.58	6.215	8.037	6.06	6.049
4.031	2.717	1.488	5.708	2.848	5.285	12.226	12.196	2.719	7.924
2.758	4.324	0.845	0.974	2.288	2.08	8.172	3.399	4.862	0.736
1.996	1.601	1.255	3.243	3.67	12.483	11.052	7.745	7.807	7.089
1.891	3.858	1.015	2.938	1.828					
1.242	3.263	2.498	2.507	3.5					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.25

Target Absent					Target Present				
<b>5.708</b>	3.67	2.717	1.752	1.242	<b>12.483</b>	<b>9.632</b>	<b>7.807</b>	<b>6.06</b>	4.153
4.601	3.5	2.652	1.659	1.015	<b>12.246</b>	<b>8.58</b>	<b>7.745</b>	<b>6.049</b>	3.399
4.324	3.263	2.507	1.621	0.987	<b>12.226</b>	<b>8.172</b>	<b>7.089</b>	<b>5.372</b>	3.282
4.17	3.243	2.498	1.601	0.984	<b>12.196</b>	<b>8.132</b>	<b>6.628</b>	<b>5.285</b>	2.719
4.087	2.94	2.288	1.548	0.974	<b>11.308</b>	<b>8.037</b>	<b>6.44</b>	4.862	2.08
4.031	2.938	1.996	1.488	0.845	<b>11.052</b>	<b>7.924</b>	<b>6.215</b>	4.8	0.736
3.939	2.848	1.891	1.289	0.466					
3.858	2.758	1.828	1.255	0.173					

Number of samples above threshold = 1

Number of samples above threshold = 22

False Alarm rate : 1 in 40

Miss rate : 8 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.25

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.25**

Probability of correct TARGET detection (sensitivity) = 0.73333

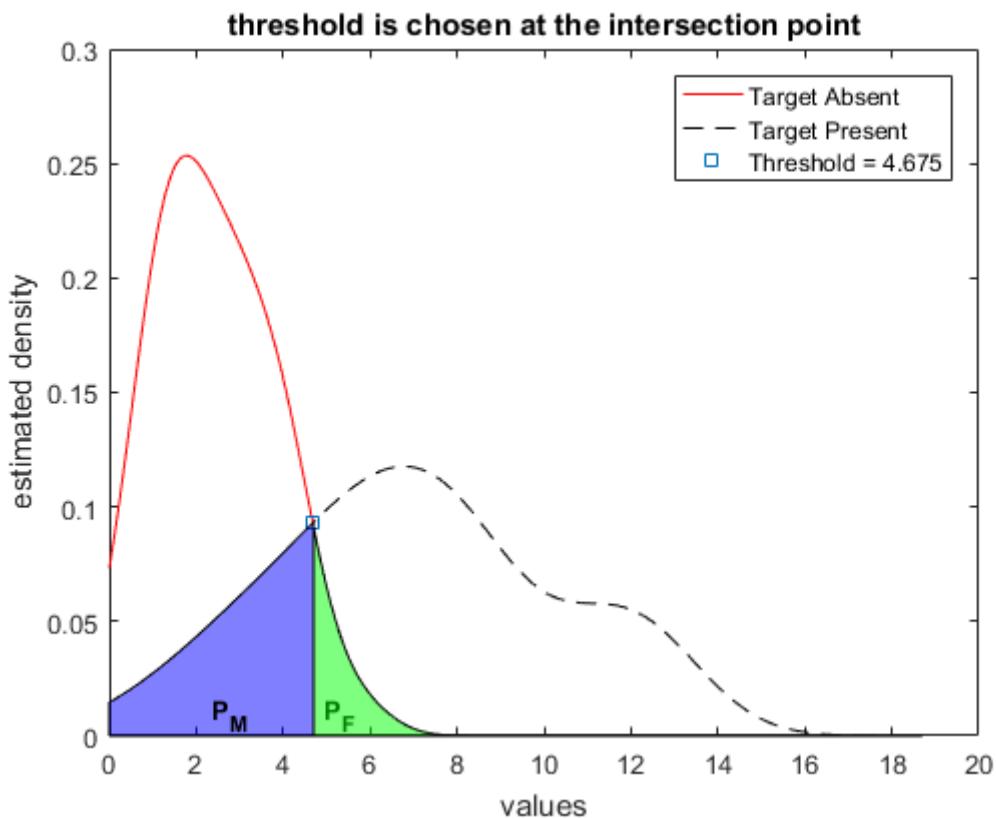
**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95652**

Overall Accuracy = 0.87143



**Sorted and Partitioned Data : Threshold at 4.675**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.708	3.67	2.717	1.752	1.242	12.483	9.632	7.807	6.06	4.153
4.601	3.5	2.652	1.659	1.015	12.246	8.58	7.745	6.049	3.399
4.324	3.263	2.507	1.621	0.987	12.226	8.172	7.089	5.372	3.282
4.17	3.243	2.498	1.601	0.984	12.196	8.132	6.628	5.285	2.719
4.087	2.94	2.288	1.548	0.974	11.308	8.037	6.44	4.862	2.08
4.031	2.938	1.996	1.488	0.845	11.052	7.924	6.215	4.8	0.736
3.939	2.848	1.891	1.289	0.466					
3.858	2.758	1.828	1.255	0.173					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 24**

Miss rate : 6 in 30

(c) P. M. Shankar

## Summary of the analysis

Liao

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.675**

Probability of correct TARGET detection (sensitivity) = 0.8

**Probability of Miss = 1 - sensitivity = 0.2**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.96**

Overall Accuracy = 0.9

### Confusion Matrix (Threshold Value = 4.675)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	24	6	30
Total Counts	25	45	70

$$P_F = \frac{1}{40} \quad P_M = \frac{1}{5} \quad PPV = \frac{24}{25} \quad \text{err} = \frac{1}{10} \quad \text{acc} = \frac{9}{10}$$

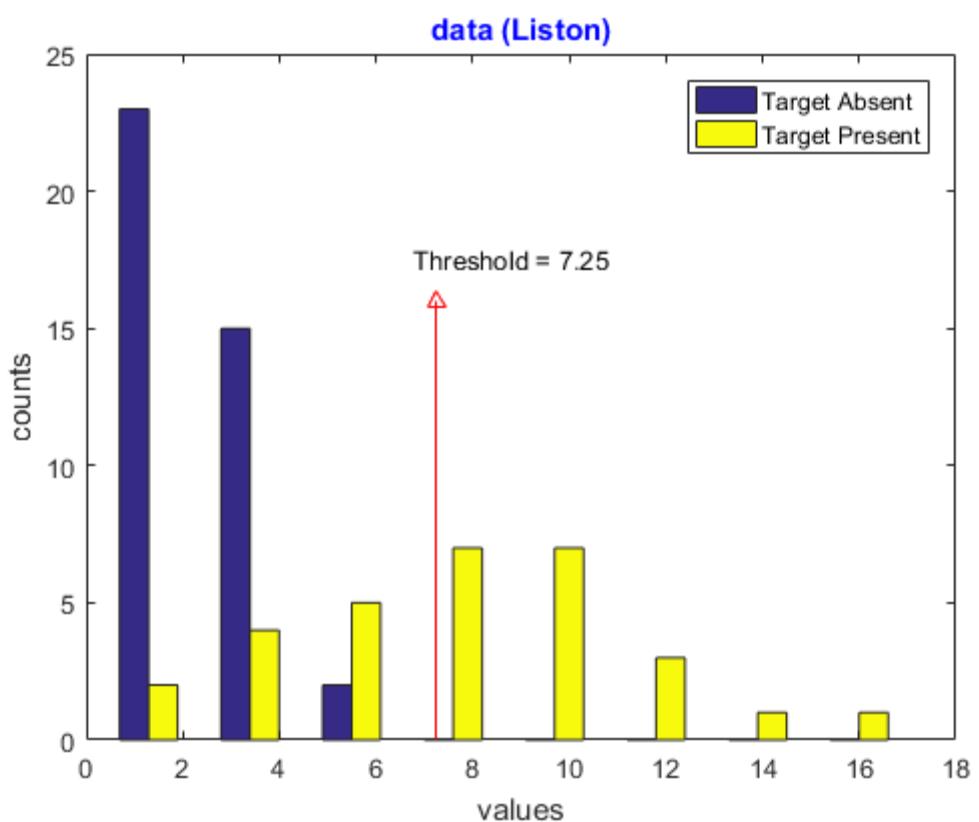
## Summary of the analysis

Liao

data (Liston)

Target Absent					Target Present				
2.337	2.879	1.479	2.255	0.582	12.912	6.421	5.144	7.582	9.451
2.847	2.646	3.11	2.593	2.44	8.368	9.1	11.635	4.179	0.896
0.595	0.24	0.876	3.479	1.88	9.226	8.755	11.91	4.093	9.224
3.945	2.663	1.795	1.414	1.341	4.865	10.051	6.948	3.084	4.688
2.843	2.347	0.656	1.049	0.791	7.948	1.016	7.211	7.632	5.203
1.797	2.99	4.583	3.987	0.816	17.05	3.33	10.819	7.023	10.448
0.367	4.575	0.97	0.438	0.908					
2.473	1.301	3.447	2.182	0.714					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 7.25

Target Absent					Target Present				
4.583	2.879	2.347	1.414	0.791	17.05	10.051	8.368	6.948	4.179
4.575	2.847	2.337	1.341	0.714	12.912	9.451	7.948	6.421	4.093
3.987	2.843	2.255	1.301	0.656	11.91	9.226	7.632	5.203	3.33
3.945	2.663	2.182	1.049	0.595	11.635	9.224	7.582	5.144	3.084
3.479	2.646	1.88	0.97	0.582	10.819	9.1	7.211	4.865	1.016
3.447	2.593	1.797	0.908	0.438	10.448	8.755	7.023	4.688	0.896
3.11	2.473	1.795	0.876	0.367					
2.99	2.44	1.479	0.816	0.24					

Number of samples above threshold = 0

Number of samples above threshold = 16

False Alarm rate : 0 in 40

Miss rate : 14 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 7.25

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 7.25**

Probability of correct TARGET detection (sensitivity) = 0.53333

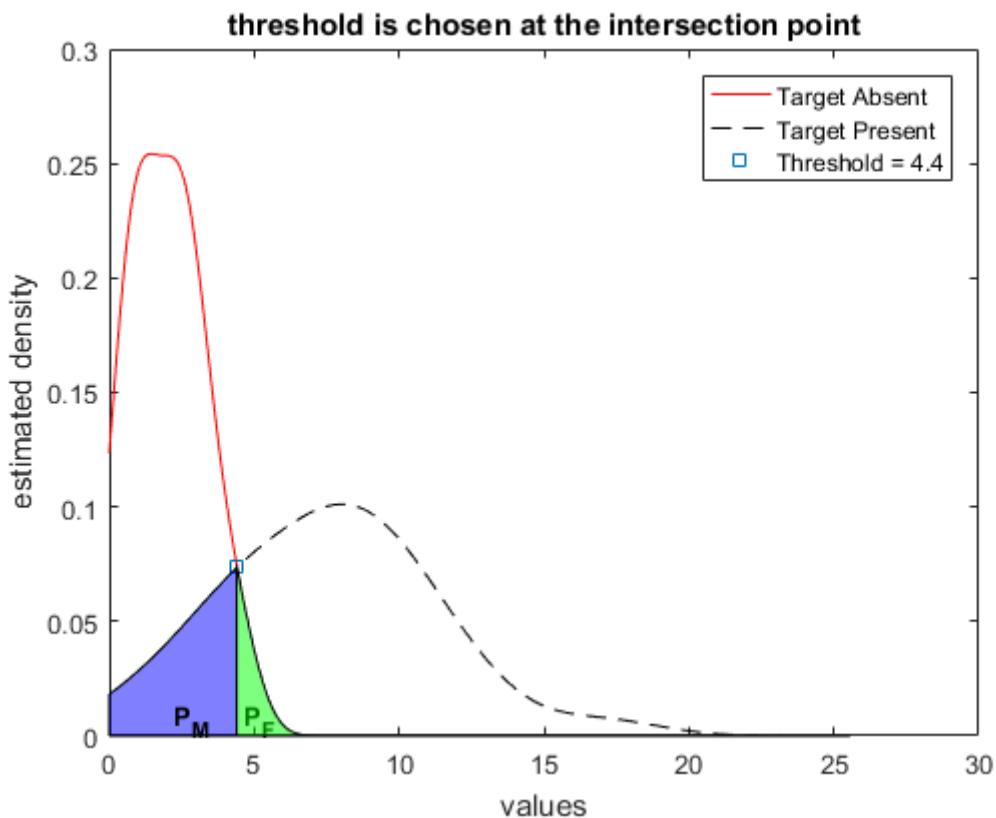
**Probability of Miss = 1 - sensitivity = 0.46667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 4.4**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.583	2.879	2.347	1.414	0.791	17.05	10.051	8.368	6.948	4.179
4.575	2.847	2.337	1.341	0.714	12.912	9.451	7.948	6.421	4.093
3.987	2.843	2.255	1.301	0.656	11.91	9.226	7.632	5.203	3.33
3.945	2.663	2.182	1.049	0.595	11.635	9.224	7.582	5.144	3.084
3.479	2.646	1.88	0.97	0.582	10.819	9.1	7.211	4.865	1.016
3.447	2.593	1.797	0.908	0.438	10.448	8.755	7.023	4.688	0.896
3.11	2.473	1.795	0.876	0.367					
2.99	2.44	1.479	0.816	0.24					

**Number of samples above threshold = 2**

False Alarm rate : 2 in 40

**Number of samples above threshold = 24**

Miss rate : 6 in 30

(c) P. M. Shankar

## Summary of the analysis Liston

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.4**

Probability of correct TARGET detection (sensitivity) = 0.8

**Probability of Miss = 1 - sensitivity = 0.2**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.92308**

Overall Accuracy = 0.88571

### Confusion Matrix (Threshold Value = 4.4)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	24	6	30
Total Counts	26	44	70

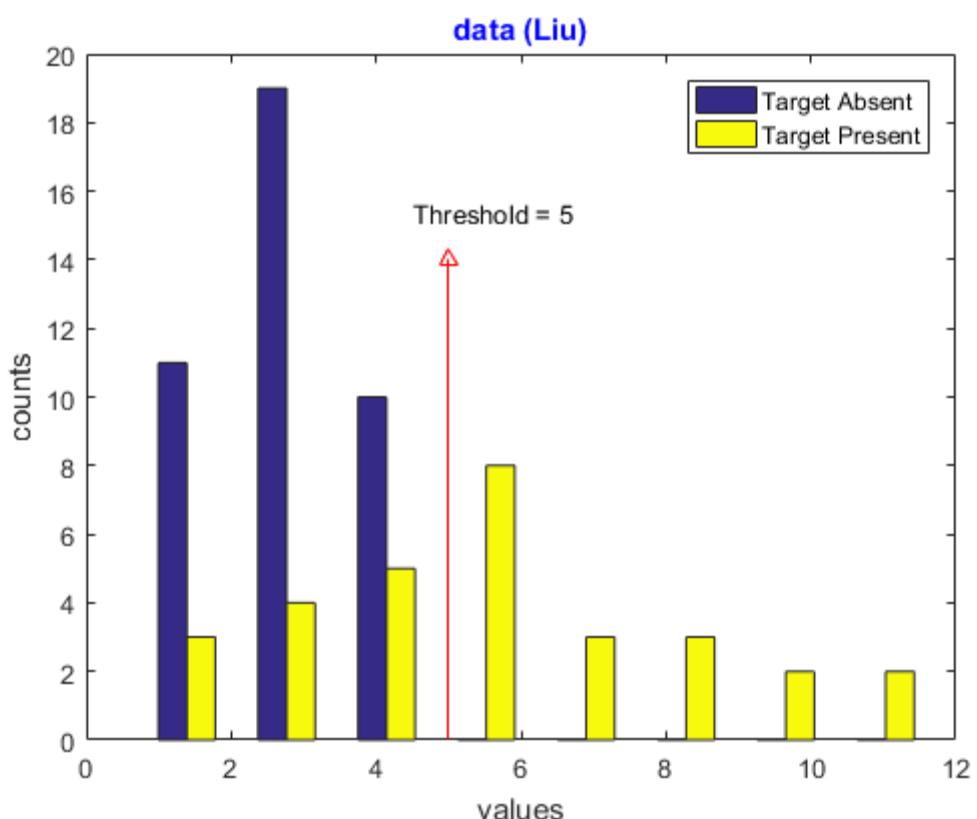
$$P_F = \frac{1}{20} \quad P_M = \frac{1}{5} \quad \text{PPV} = \frac{12}{13} \quad \text{err} = \frac{4}{35} \quad \text{acc} = \frac{31}{35}$$

## Summary of the analysis Liston

data (Liu)

Target Absent					Target Present				
3.619	3.077	2.56	1.417	1.825	8.198	6.623	1.445	10.127	11.697
3.469	1.628	2.273	2.676	3.695	2.471	6.87	4.882	8.441	3.346
4.604	3.136	4.202	3.004	0.742	11.721	5.702	2.613	7.35	2.865
2.319	2.826	2.833	2.334	3.327	0.705	4.638	4.881	4.175	5.68
3.843	1.161	2.498	3.556	0.699	4.891	1.746	4.578	6.127	5.984
2.019	3.56	2.374	1.596	3.325	6.196	7.901	3.739	9.72	4.118
3.816	1.914	2.119	2.55	2.728					
3.99	1.895	2.113	1.11	3.278					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5

Target Absent					Target Present				
4.604	3.556	2.833	2.334	1.825	<b>11.721</b>	<b>7.901</b>	<b>5.984</b>	4.638	2.865
4.202	3.469	2.826	2.319	1.628	<b>11.697</b>	<b>7.35</b>	<b>5.702</b>	4.578	2.613
3.99	3.327	2.728	2.273	1.596	<b>10.127</b>	<b>6.87</b>	<b>5.68</b>	4.175	2.471
3.843	3.325	2.676	2.119	1.417	<b>9.72</b>	<b>6.623</b>	4.891	4.118	1.746
3.816	3.278	2.56	2.113	1.161	<b>8.441</b>	<b>6.196</b>	4.882	3.739	1.445
3.695	3.136	2.55	2.019	1.11	<b>8.198</b>	<b>6.127</b>	4.881	3.346	0.705
3.619	3.077	2.498	1.914	0.742					
3.56	3.004	2.374	1.895	0.699					

**Number of samples above threshold = 0**

**Number of samples above threshold = 15**

False Alarm rate : 0 in 40

Miss rate : 15 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 5

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5**

Probability of correct TARGET detection (sensitivity) = 0.5

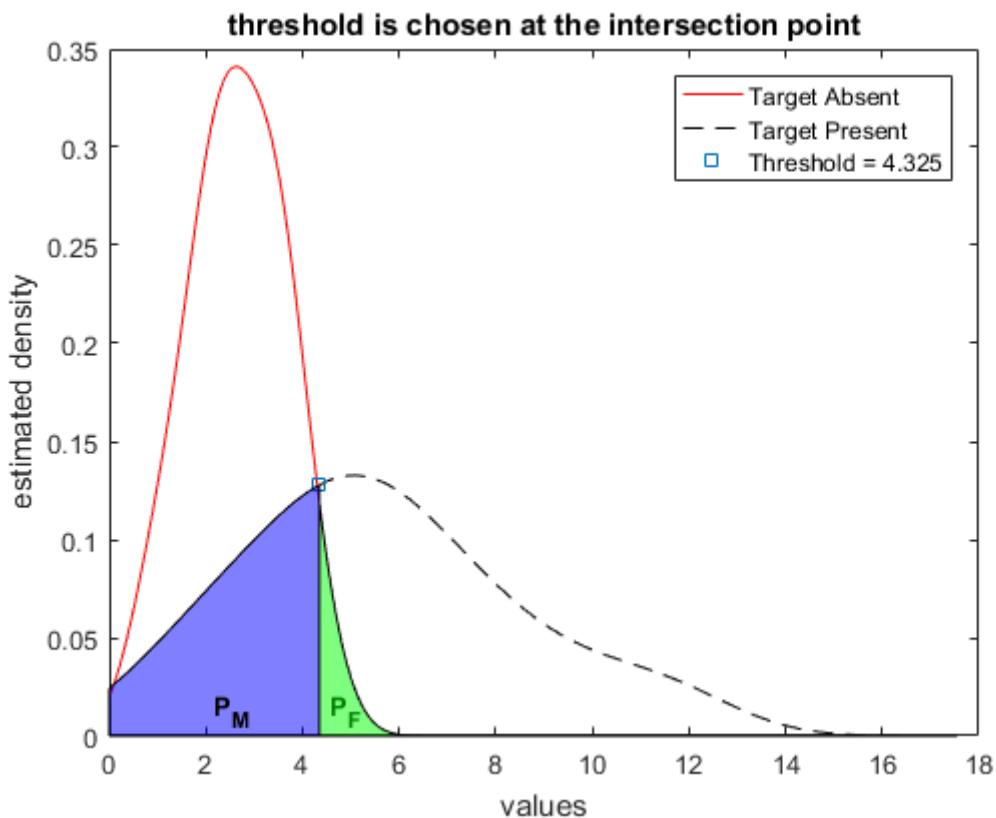
**Probability of Miss = 1 - sensitivity = 0.5**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.78571



**Sorted and Partitioned Data : Threshold at 4.325**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.604	3.556	2.833	2.334	1.825	11.721	7.901	5.984	4.638	2.865
4.202	3.469	2.826	2.319	1.628	11.697	7.35	5.702	4.578	2.613
3.99	3.327	2.728	2.273	1.596	10.127	6.87	5.68	4.175	2.471
3.843	3.325	2.676	2.119	1.417	9.72	6.623	4.891	4.118	1.746
3.816	3.278	2.56	2.113	1.161	8.441	6.196	4.882	3.739	1.445
3.695	3.136	2.55	2.019	1.11	8.198	6.127	4.881	3.346	0.705
3.619	3.077	2.498	1.914	0.742					
3.56	3.004	2.374	1.895	0.699					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 20**

Miss rate : 10 in 30

(c) P. M. Shankar

## Summary of the analysis Liu

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.325**

Probability of correct TARGET detection (sensitivity) = 0.66667

**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95238**

Overall Accuracy = 0.84286

### Confusion Matrix (Threshold Value = 4.325)

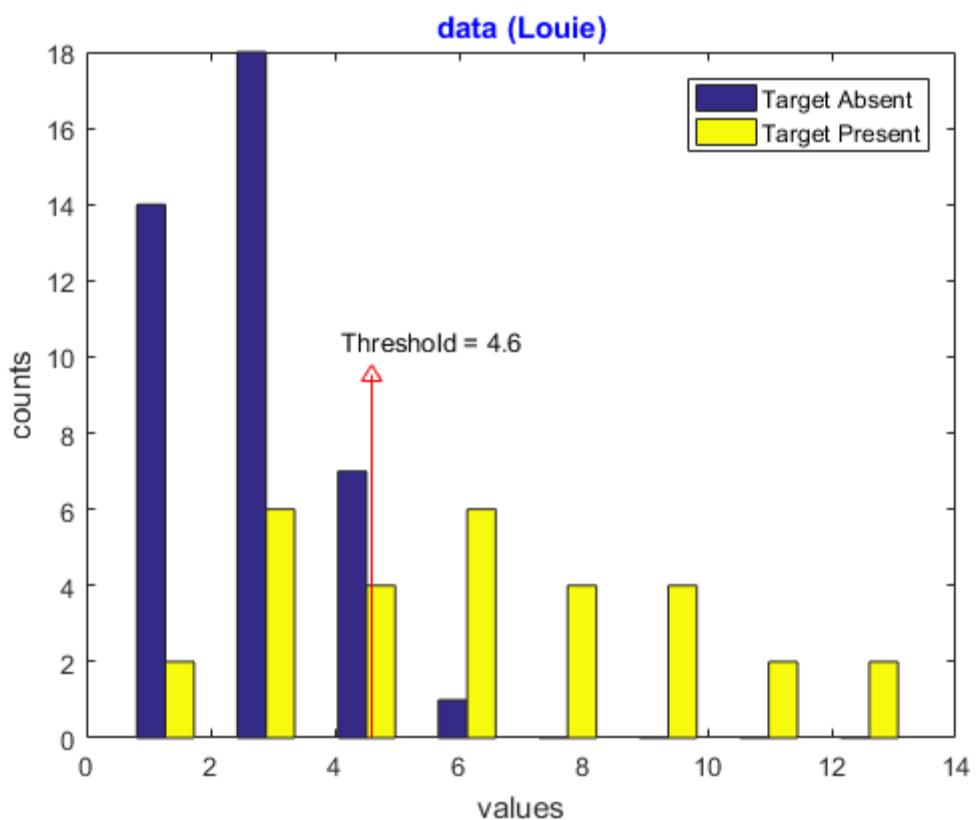
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	20	10	30
Total Counts	21	49	70

$$P_F = \frac{1}{40} \quad P_M = \frac{1}{3} \quad PPV = \frac{20}{21} \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

## Summary of the analysis Liu

data (Louie)									
Target Absent					Target Present				
1.882	2.524	2.845	1.961	2.728	5.634	2.955	2.283	5.049	7.526
2.328	3.616	2.908	0.812	2.407	4.338	9.131	2.084	8.992	11.334
4.71	2.556	3.939	4.55	2.112	12.138	5.792	5.349	10.052	7.097
6.283	3.986	2.172	3.592	0.893	3.17	3.963	6.162	3.204	0.486
2.826	1.23	2.469	2.628	2.601	8.59	6.102	13.417	4.065	7.777
1.812	1.199	0.978	1.221	4.659	11.233	2.893	6.736	2.348	8.235
4.536	2.184	3.424	1.828	1.261					
0.466	1.891	2.924	5.254	0.944					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.6

Target Absent					Target Present				
<b>6.283</b>	3.616	2.628	2.172	1.23	<b>13.417</b>	<b>8.992</b>	<b>6.736</b>	<b>5.049</b>	2.955
<b>5.254</b>	3.592	2.601	2.112	1.221	<b>12.138</b>	<b>8.59</b>	<b>6.162</b>	4.338	2.893
<b>4.71</b>	3.424	2.556	1.961	1.199	<b>11.334</b>	<b>8.235</b>	<b>6.102</b>	4.065	2.348
<b>4.659</b>	2.924	2.524	1.891	0.978	<b>11.233</b>	<b>7.777</b>	<b>5.792</b>	3.963	2.283
4.55	2.908	2.469	1.882	0.944	<b>10.052</b>	<b>7.526</b>	<b>5.634</b>	3.204	2.084
4.536	2.845	2.407	1.828	0.893	<b>9.131</b>	<b>7.097</b>	<b>5.349</b>	3.17	0.486
3.986	2.826	2.328	1.812	0.812					
3.939	2.728	2.184	1.261	0.466					

Number of samples above threshold = 4

Number of samples above threshold = 19

False Alarm rate : 4 in 40

Miss rate : 11 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.6

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.6**

Probability of correct TARGET detection (sensitivity) = 0.63333

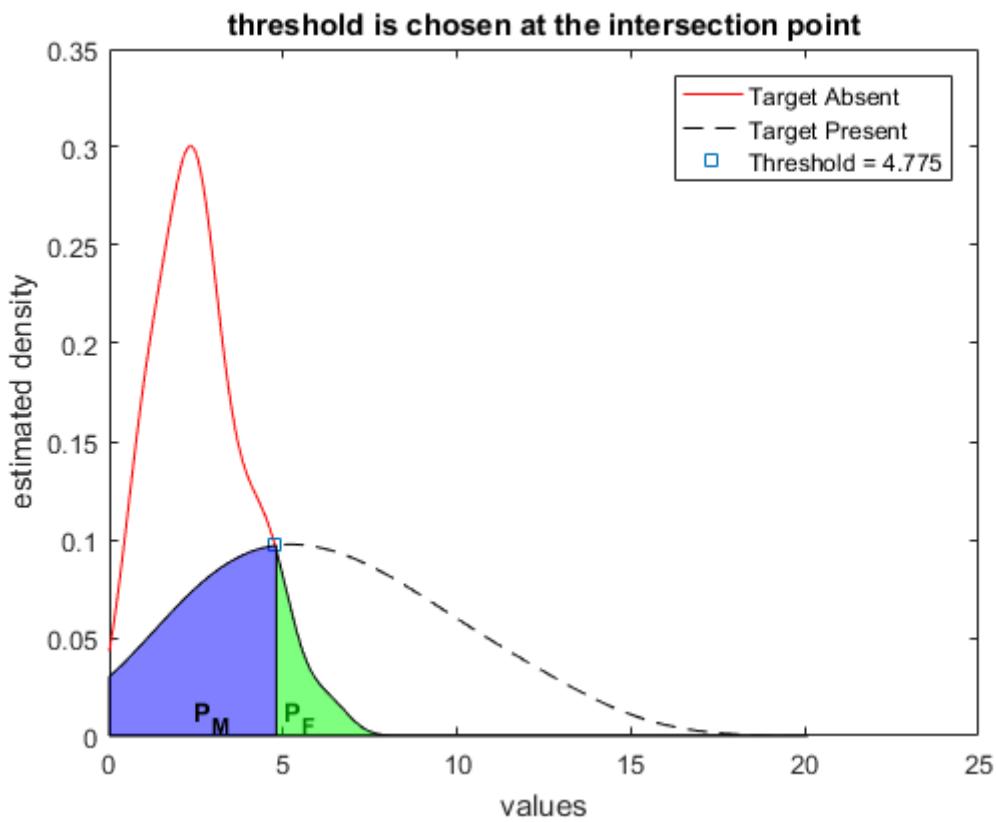
**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.82609**

Overall Accuracy = 0.78571



**Sorted and Partitioned Data : Threshold at 4.775**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
6.283	3.616	2.628	2.172	1.23	13.417	8.992	6.736	5.049	2.955
5.254	3.592	2.601	2.112	1.221	12.138	8.59	6.162	4.338	2.893
4.71	3.424	2.556	1.961	1.199	11.334	8.235	6.102	4.065	2.348
4.659	2.924	2.524	1.891	0.978	11.233	7.777	5.792	3.963	2.283
4.55	2.908	2.469	1.882	0.944	10.052	7.526	5.634	3.204	2.084
4.536	2.845	2.407	1.828	0.893	9.131	7.097	5.349	3.17	0.486
3.986	2.826	2.328	1.812	0.812					
3.939	2.728	2.184	1.261	0.466					

**Number of samples above threshold = 2**

False Alarm rate : 2 in 40

**Number of samples above threshold = 19**

Miss rate : 11 in 30

(c) P. M. Shankar

## Summary of the analysis Louie

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.775**

Probability of correct TARGET detection (sensitivity) = 0.63333

**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.90476**

Overall Accuracy = 0.81429

### Confusion Matrix (Threshold Value = 4.775)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	19	11	30
Total Counts	21	49	70

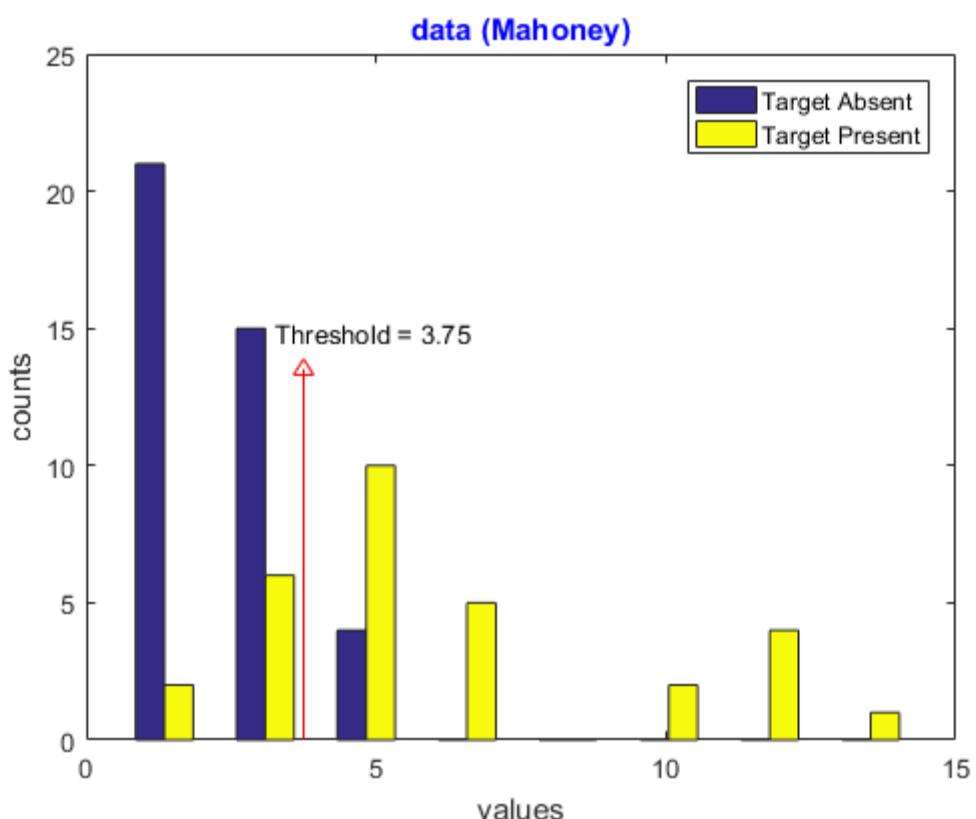
$$P_F = \frac{1}{20} \quad P_M = \frac{11}{30} \quad PPV = \frac{19}{21} \quad \text{err} = \frac{13}{70} \quad \text{acc} = \frac{57}{70}$$

## Summary of the analysis Louie

**data (Mahoney)**

Target Absent					Target Present				
2.661	2.071	2.048	3.695	1.869	12.034	4.47	4.581	2.476	4.626
3.636	2.477	2.51	4.655	0.477	5.885	3.383	4.426	5.043	11.484
4.075	0.507	2.259	1.652	2.162	9.199	5.443	2.806	11.812	14.401
1.987	0.97	1.954	2.394	1.82	5.787	1.018	2.295	4.211	6.44
3.523	1.687	3.376	2.34	2.799	4.917	3.826	5.793	3.127	6.303
1.294	2.109	2.382	4.178	2.36	1.885	12.413	10.413	5.49	5.412
1.389	1.284	1.992	1.655	2.76					
4.044	1.213	2.682	1.335	1.812					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 3.75

Target Absent					Target Present				
<b>4.655</b>	2.799	2.36	1.987	1.389	<b>14.401</b>	<b>9.199</b>	<b>5.49</b>	<b>4.581</b>	3.127
<b>4.178</b>	2.76	2.34	1.954	1.335	<b>12.413</b>	<b>6.44</b>	<b>5.443</b>	<b>4.47</b>	2.806
<b>4.075</b>	2.682	2.259	1.869	1.294	<b>12.034</b>	<b>6.303</b>	<b>5.412</b>	<b>4.426</b>	2.476
<b>4.044</b>	2.661	2.162	1.82	1.284	<b>11.812</b>	<b>5.885</b>	<b>5.043</b>	<b>4.211</b>	2.295
3.695	2.51	2.109	1.812	1.213	<b>11.484</b>	<b>5.793</b>	<b>4.917</b>	<b>3.826</b>	1.885
3.636	2.477	2.071	1.687	0.97	<b>10.413</b>	<b>5.787</b>	<b>4.626</b>	3.383	1.018
3.523	2.394	2.048	1.655	0.507					
3.376	2.382	1.992	1.652	0.477					

Number of samples above threshold = 4

Number of samples above threshold = 23

False Alarm rate : 4 in 40

Miss rate : 7 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 3.75

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.75**

Probability of correct TARGET detection (sensitivity) = 0.76667

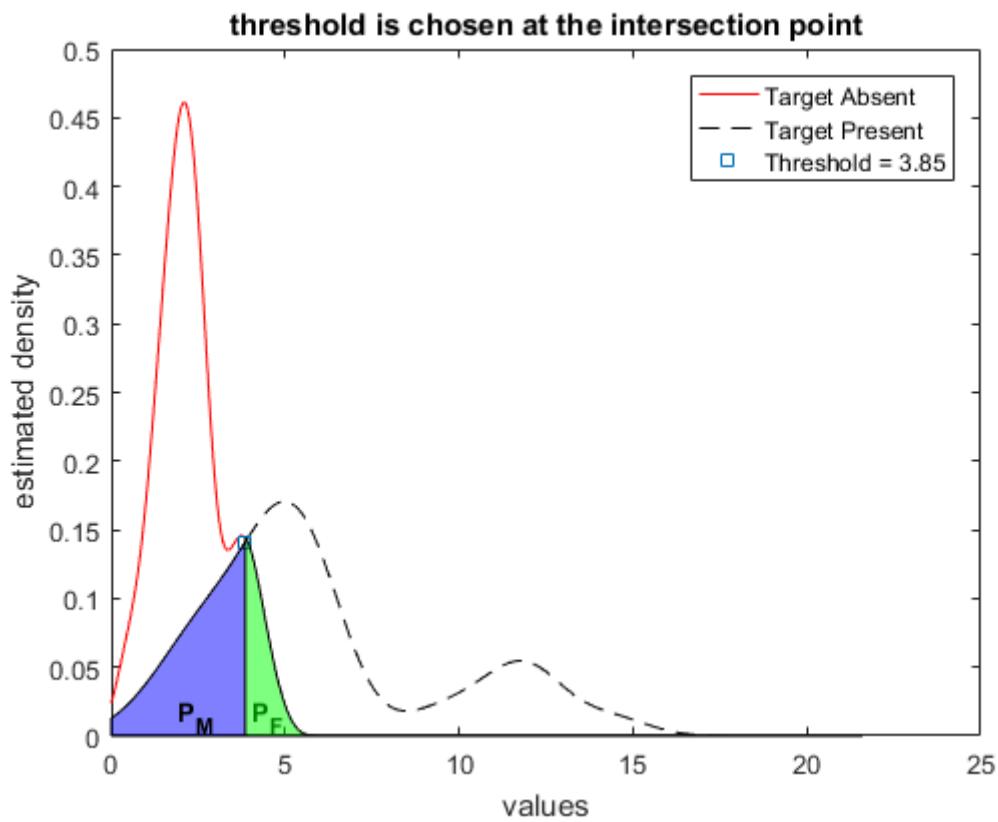
**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.85185**

Overall Accuracy = 0.84286



**Sorted and Partitioned Data : Threshold at 3.85**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.655	2.799	2.36	1.987	1.389	14.401	9.199	5.49	4.581	3.127
4.178	2.76	2.34	1.954	1.335	12.413	6.44	5.443	4.47	2.806
4.075	2.682	2.259	1.869	1.294	12.034	6.303	5.412	4.426	2.476
4.044	2.661	2.162	1.82	1.284	11.812	5.885	5.043	4.211	2.295
3.695	2.51	2.109	1.812	1.213	11.484	5.793	4.917	3.826	1.885
3.636	2.477	2.071	1.687	0.97	10.413	5.787	4.626	3.383	1.018
3.523	2.394	2.048	1.655	0.507					
3.376	2.382	1.992	1.652	0.477					

Number of samples above threshold = 4

Number of samples above threshold = 22

False Alarm rate : 4 in 40

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis Mahoney

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.85**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.84615**

Overall Accuracy = 0.82857

### Confusion Matrix (Threshold Value = 3.85)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	22	8	30
Total Counts	26	44	70

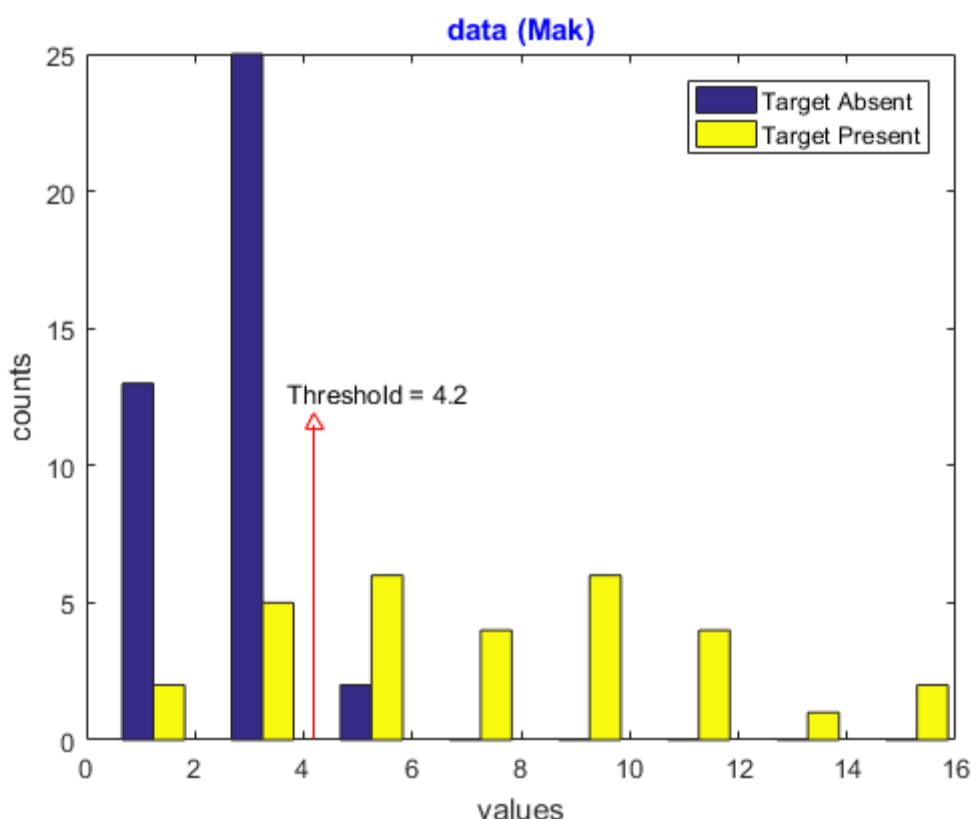
$$P_F = \frac{1}{10} \quad P_M = \frac{4}{15} \quad PPV = \frac{11}{13} \quad \text{err} = \frac{6}{35} \quad \text{acc} = \frac{29}{35}$$

## Summary of the analysis Mahoney

data (Mak)

Target Absent					Target Present				
2.997	2.888	3.699	3.058	2.346	4.93	8.877	3.296	10.33	5.595
2.324	2.259	2.276	0.234	2.77	4.563	13.555	6.31	8.479	8.601
1.563	2.441	4.204	0.982	0.392	1.986	3.124	3.274	8.36	11.072
3.302	4.766	1.587	2.01	0.684	7	3.975	6.456	8.968	7.017
2.334	3.011	0.845	5.836	3.526	15.35	11.056	16.287	5.021	11.077
2.836	2.153	3.53	2.317	2.012	0.483	5.754	9.054	3.791	4.576
2.233	2.365	2.383	0.961	3.737					
3.545	3.1	3.952	1.846	3.204					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.2

Target Absent					Target Present				
<b>5.836</b>	3.526	2.836	2.317	1.587	<b>16.287</b>	<b>10.33</b>	<b>8.36</b>	<b>5.595</b>	3.791
<b>4.766</b>	3.302	2.77	2.276	1.563	<b>15.35</b>	<b>9.054</b>	<b>7.017</b>	<b>5.021</b>	3.296
<b>4.204</b>	3.204	2.441	2.259	0.982	<b>13.555</b>	<b>8.968</b>	<b>7</b>	<b>4.93</b>	3.274
3.952	3.1	2.383	2.233	0.961	<b>11.077</b>	<b>8.877</b>	<b>6.456</b>	<b>4.576</b>	3.124
3.737	3.058	2.365	2.153	0.845	<b>11.072</b>	<b>8.601</b>	<b>6.31</b>	<b>4.563</b>	1.986
3.699	3.011	2.346	2.012	0.684	<b>11.056</b>	<b>8.479</b>	<b>5.754</b>	3.975	0.483
3.545	2.997	2.334	2.01	0.392					
3.53	2.888	2.324	1.846	0.234					

Number of samples above threshold = 3

Number of samples above threshold = 23

False Alarm rate : 3 in 40

Miss rate : 7 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.2

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.2**

Probability of correct TARGET detection (sensitivity) = 0.76667

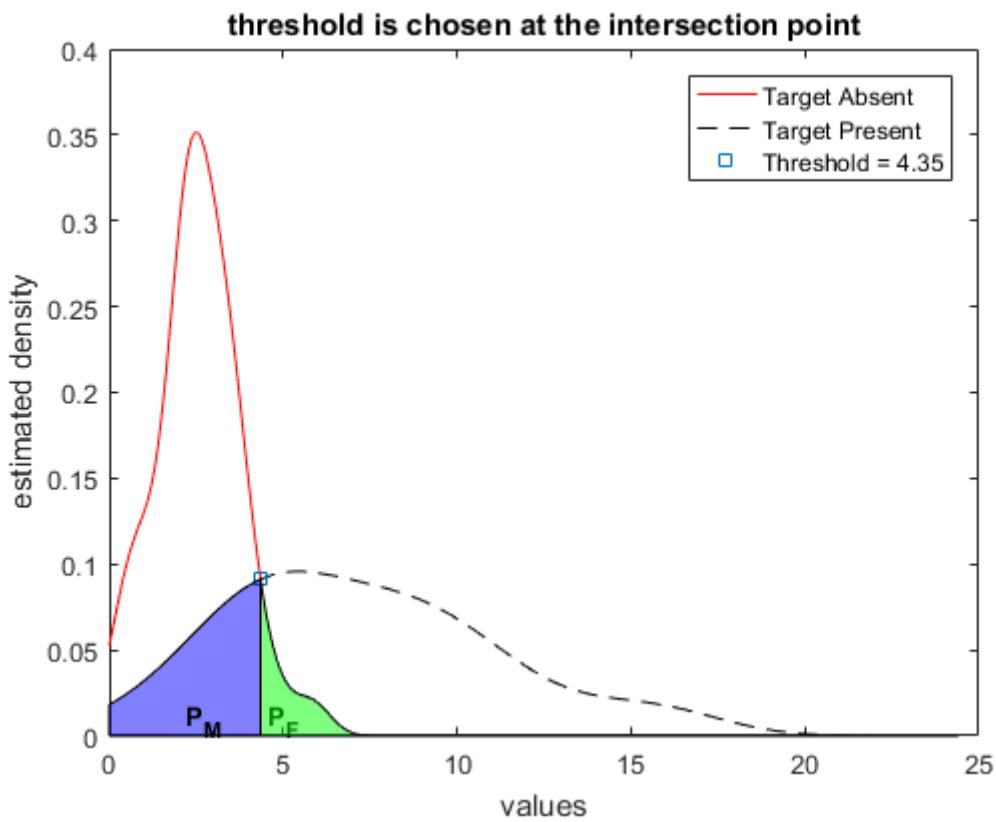
**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.88462**

Overall Accuracy = 0.85714



**Sorted and Partitioned Data : Threshold at 4.35**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.836	3.526	2.836	2.317	1.587	16.287	10.33	8.36	5.595	3.791
4.766	3.302	2.77	2.276	1.563	15.35	9.054	7.017	5.021	3.296
4.204	3.204	2.441	2.259	0.982	13.555	8.968	7	4.93	3.274
3.952	3.1	2.383	2.233	0.961	11.077	8.877	6.456	4.576	3.124
3.737	3.058	2.365	2.153	0.845	11.072	8.601	6.31	4.563	1.986
3.699	3.011	2.346	2.012	0.684	11.056	8.479	5.754	3.975	0.483
3.545	2.997	2.334	2.01	0.392					
3.53	2.888	2.324	1.846	0.234					

**Number of samples above threshold = 2**

False Alarm rate : 2 in 40

**Number of samples above threshold = 23**

Miss rate : 7 in 30

**(c) P. M. Shankar**

## Summary of the analysis

Mak

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.35**

Probability of correct TARGET detection (sensitivity) = 0.76667

**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.92**

Overall Accuracy = 0.87143

### Confusion Matrix (Threshold Value = 4.35)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	23	7	30
Total Counts	25	45	70

$$P_F = \frac{1}{20} \quad P_M = \frac{7}{30} \quad PPV = \frac{23}{25} \quad \text{err} = \frac{9}{70} \quad \text{acc} = \frac{61}{70}$$

## Summary of the analysis

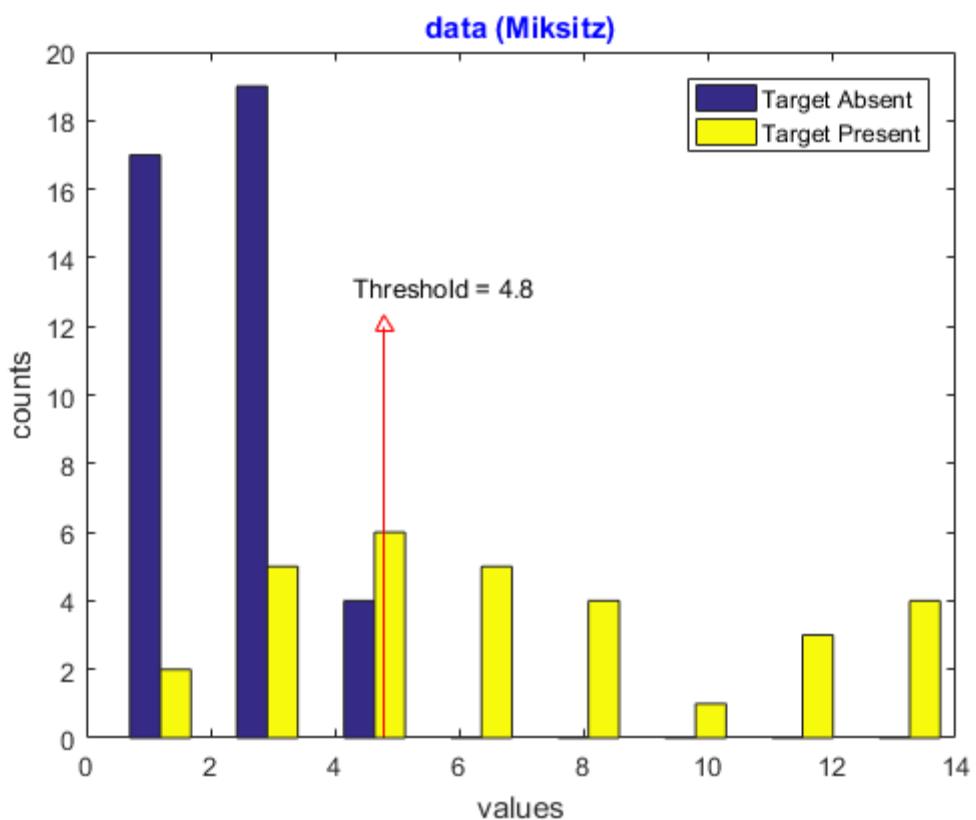
Mak

p m shankar

*Published with MATLAB® R2016a*

data (Miksitz)									
Target Absent					Target Present				
3.966	2.626	1.994	4.068	0.331	5.102	6.402	8.006	2.835	6.625
1.153	1.965	5.43	2.094	1.706	4.892	2.091	4.919	2.026	10.137
3.126	1.367	2.029	2.778	3.899	6.29	4.722	7.344	13.206	8.627
2.932	1.602	2.294	1.429	1.88	6.886	8.03	3.727	12.4	10.872
1.056	2.132	3.319	3.593	3.605	0.831	3.678	11.438	4.101	3.036
2.324	1.808	1.894	3.591	2.704	14.072	5.344	6.981	14.119	11.243
1.285	2.881	3.16	2.103	1.23					
3.596	2.185	1.502	2.293	0.717					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.8

Target Absent					Target Present				
<b>5.43</b>	3.319	2.324	1.994	1.429	<b>14.119</b>	<b>10.872</b>	<b>6.981</b>	<b>5.102</b>	3.678
4.068	3.16	2.294	1.965	1.367	<b>14.072</b>	<b>10.137</b>	<b>6.886</b>	<b>4.919</b>	3.036
3.966	3.126	2.293	1.894	1.285	<b>13.206</b>	<b>8.627</b>	<b>6.625</b>	<b>4.892</b>	2.835
3.899	2.932	2.185	1.88	1.23	<b>12.4</b>	<b>8.03</b>	<b>6.402</b>	4.722	2.091
3.605	2.881	2.132	1.808	1.153	<b>11.438</b>	<b>8.006</b>	<b>6.29</b>	4.101	2.026
3.596	2.778	2.103	1.706	1.056	<b>11.243</b>	<b>7.344</b>	<b>5.344</b>	3.727	0.831
3.593	2.704	2.094	1.602	0.717					
3.591	2.626	2.029	1.502	0.331					

**Number of samples above threshold = 1**

**Number of samples above threshold = 21**

False Alarm rate : 1 in 40

Miss rate : 9 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 4.8

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.8**

Probability of correct TARGET detection (sensitivity) = 0.7

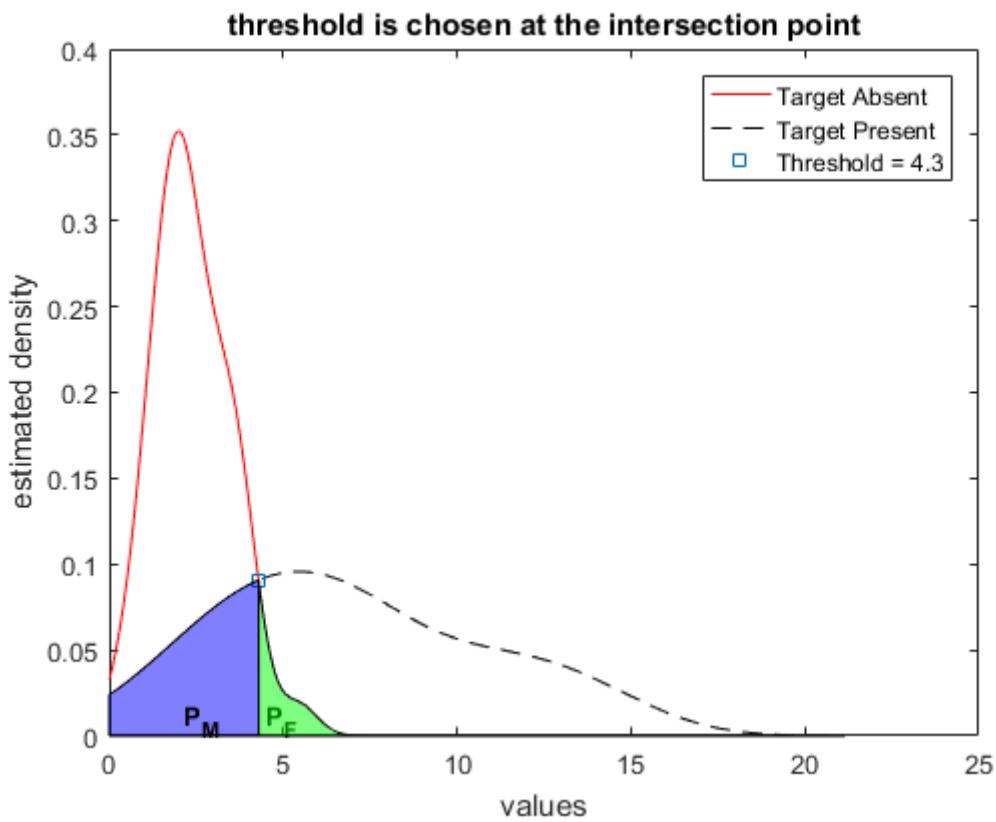
**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95455**

Overall Accuracy = 0.85714



**Sorted and Partitioned Data : Threshold at 4.3**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>5.43</b>	3.319	2.324	1.994	1.429	<b>14.119</b>	<b>10.872</b>	<b>6.981</b>	<b>5.102</b>	3.678
4.068	3.16	2.294	1.965	1.367	<b>14.072</b>	<b>10.137</b>	<b>6.886</b>	<b>4.919</b>	3.036
3.966	3.126	2.293	1.894	1.285	<b>13.206</b>	<b>8.627</b>	<b>6.625</b>	<b>4.892</b>	2.835
3.899	2.932	2.185	1.88	1.23	<b>12.4</b>	<b>8.03</b>	<b>6.402</b>	<b>4.722</b>	2.091
3.605	2.881	2.132	1.808	1.153	<b>11.438</b>	<b>8.006</b>	<b>6.29</b>	4.101	2.026
3.596	2.778	2.103	1.706	1.056	<b>11.243</b>	<b>7.344</b>	<b>5.344</b>	3.727	0.831
3.593	2.704	2.094	1.602	0.717					
3.591	2.626	2.029	1.502	0.331					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 22**

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis Miksitz

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.3**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95652**

Overall Accuracy = 0.87143

### Confusion Matrix (Threshold Value = 4.3)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	22	8	30
Total Counts	23	47	70

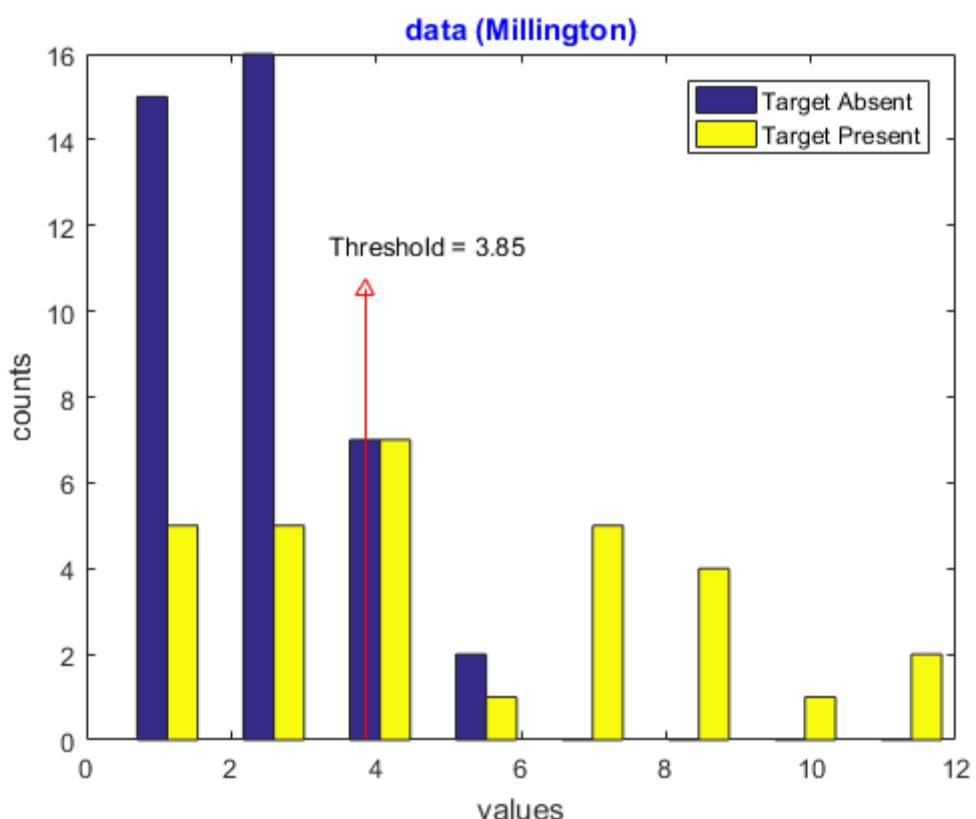
$$P_F = \frac{1}{40} \quad P_M = \frac{4}{15} \quad PPV = \frac{22}{23} \quad \text{err} = \frac{9}{70} \quad \text{acc} = \frac{61}{70}$$

## Summary of the analysis Miksitz

data (Millington)

Target Absent					Target Present				
1.686	1.343	1.668	1.797	4.317	3.506	7.072	11.386	6.483	1.661
2.78	2.452	1.276	2.62	1.532	3.629	8.499	7.094	1.276	1.743
3.596	3.042	5.434	4.362	2.652	7.561	3.307	3.692	8.041	2.924
3.26	0.387	3.703	1.833	0.982	1.424	2.56	4.694	1.56	4.671
4.658	4.481	2.975	5.421	1.771	12.121	4.538	3.172	4.238	5.15
1.426	0.91	1.861	2.193	0.67	8.95	10.406	2.903	6.79	8.419
3.009	1.162	2.151	4.68	3.19					
2.618	1.322	3.003	1.872	2.194					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 3.85

	Target Absent					Target Present				
<b>5.434</b>	3.596	2.652	1.861	1.343		<b>12.121</b>	<b>8.041</b>	<b>5.15</b>	3.629	2.56
<b>5.421</b>	3.26	2.62	1.833	1.322		<b>11.386</b>	<b>7.561</b>	<b>4.694</b>	3.506	1.743
<b>4.68</b>	3.19	2.618	1.797	1.276		<b>10.406</b>	<b>7.094</b>	<b>4.671</b>	3.307	1.661
<b>4.658</b>	3.042	2.452	1.771	1.162		<b>8.95</b>	<b>7.072</b>	<b>4.538</b>	3.172	1.56
<b>4.481</b>	3.009	2.194	1.686	0.982		<b>8.499</b>	<b>6.79</b>	<b>4.238</b>	2.924	1.424
<b>4.362</b>	3.003	2.193	1.668	0.91		<b>8.419</b>	<b>6.483</b>	3.692	2.903	1.276
<b>4.317</b>	2.975	2.151	1.532	0.67						
3.703	2.78	1.872	1.426	0.387						

Number of samples above threshold = 7

Number of samples above threshold = 17

False Alarm rate : 7 in 40

Miss rate : 13 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 3.85

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.85**

Probability of correct TARGET detection (sensitivity) = 0.56667

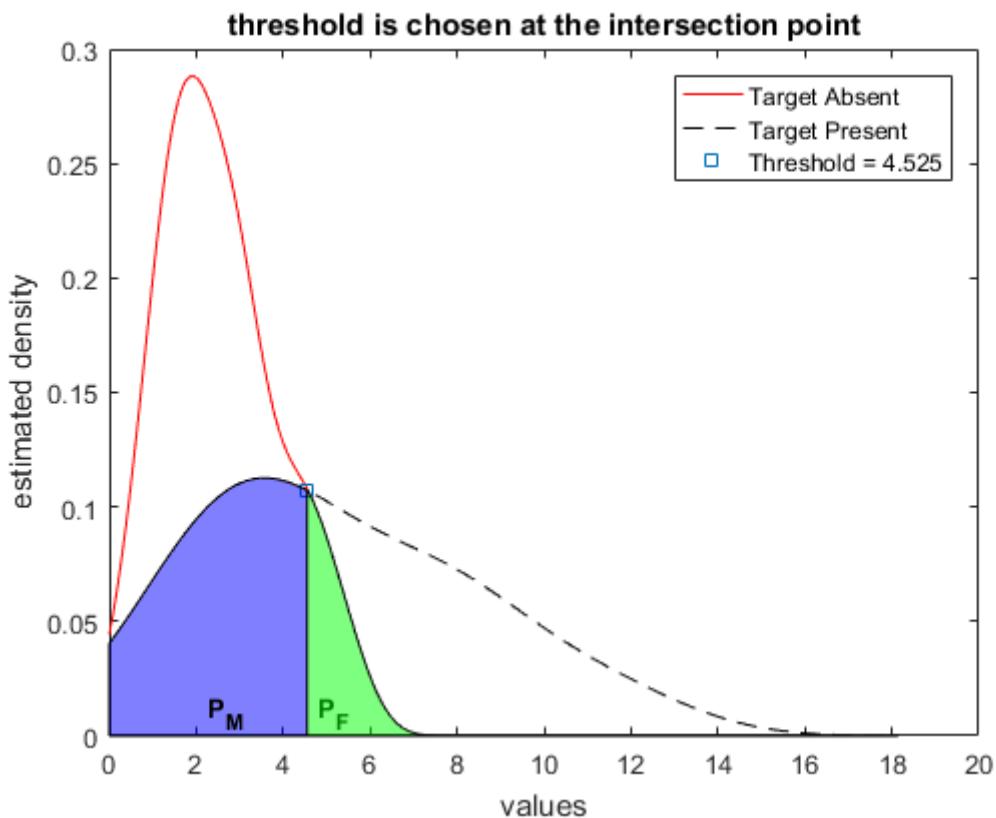
**Probability of Miss = 1 - sensitivity = 0.43333**

Probability of correct NO TARGET detection (specificity) = 0.825

**Probability of False Alarm = 1 - specificity = 0.175**

**Positive Predictive Value (PPV) = a posteriori probability = 0.70833**

Overall Accuracy = 0.71429



**Sorted and Partitioned Data : Threshold at 4.525**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>5.434</b>	3.596	2.652	1.861	1.343	<b>12.121</b>	<b>8.041</b>	<b>5.15</b>	3.629	2.56
<b>5.421</b>	3.26	2.62	1.833	1.322	<b>11.386</b>	<b>7.561</b>	<b>4.694</b>	3.506	1.743
<b>4.68</b>	3.19	2.618	1.797	1.276	<b>10.406</b>	<b>7.094</b>	<b>4.671</b>	3.307	1.661
<b>4.658</b>	3.042	2.452	1.771	1.162	<b>8.95</b>	<b>7.072</b>	<b>4.538</b>	3.172	1.56
4.481	3.009	2.194	1.686	0.982	<b>8.499</b>	<b>6.79</b>	4.238	2.924	1.424
4.362	3.003	2.193	1.668	0.91	<b>8.419</b>	<b>6.483</b>	3.692	2.903	1.276
4.317	2.975	2.151	1.532	0.67					
3.703	2.78	1.872	1.426	0.387					

**Number of samples above threshold = 4**

False Alarm rate : 4 in 40

**Number of samples above threshold = 16**

Miss rate : 14 in 30

(c) P. M. Shankar

## Summary of the analysis Millington

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.525**

Probability of correct TARGET detection (sensitivity) = 0.53333

**Probability of Miss = 1 - sensitivity = 0.46667**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.8**

Overall Accuracy = 0.74286

### Confusion Matrix (Threshold Value = 4.525)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	16	14	30
Total Counts	20	50	70

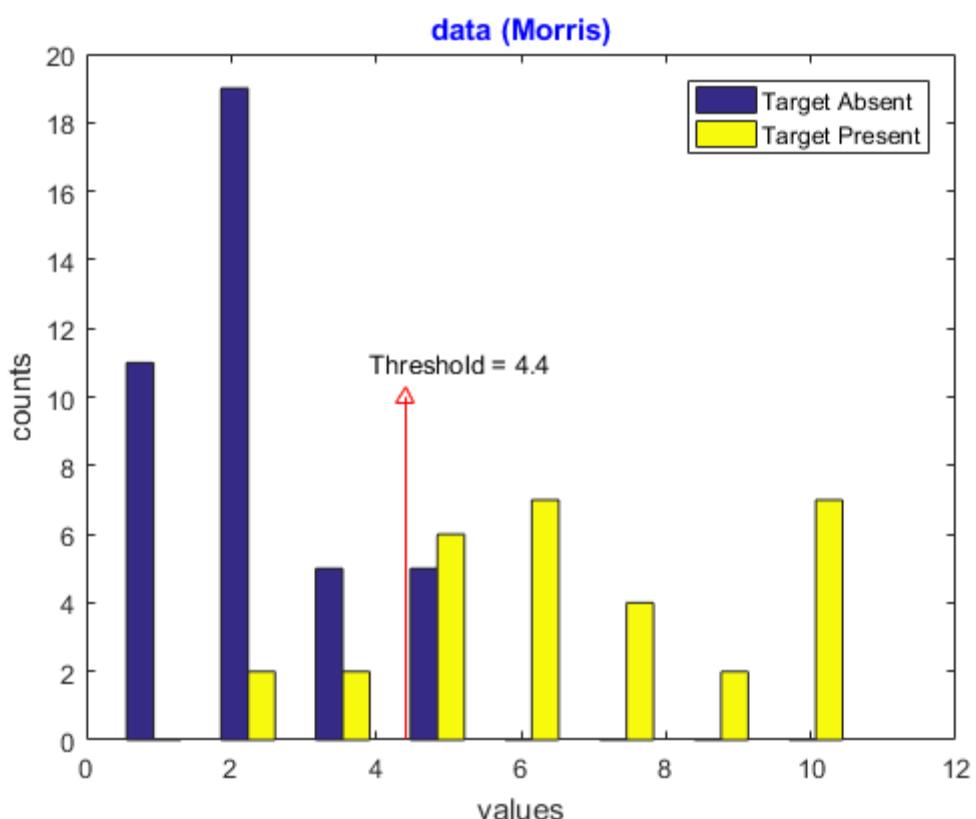
$$P_F = \frac{1}{10} \quad P_M = \frac{7}{15} \quad PPV = \frac{4}{5} \quad \text{err} = \frac{9}{35} \quad \text{acc} = \frac{26}{35}$$

## Summary of the analysis Millington

data (Morris)

Target Absent					Target Present				
2.15	2.29	1.691	1.412	1.588	5.727	4.5	5.079	7.879	6.428
3.197	2.619	1.585	0.855	4.133	6.947	7.527	4.009	8.454	7.22
2.83	1.012	4.779	2.789	3.543	4.331	5.105	3.414	10.179	5.662
4.783	2.157	1.25	0.963	1.671	9.057	6.162	10.275	9.793	9.678
2.899	3.889	5.438	1.349	2.502	5.939	5.884	5.473	5.963	10.022
2.852	1.947	4.729	4.534	0.886	4.262	2.843	10.719	10.053	1.876
0.353	1.709	2.277	0.783	2.601					
0.276	2.481	0.924	2.221	1.718					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.4

Target Absent					Target Present				
<b>5.438</b>	3.197	2.481	1.709	1.012	<b>10.719</b>	<b>9.678</b>	<b>6.947</b>	<b>5.727</b>	4.331
<b>4.783</b>	2.899	2.29	1.691	0.963	<b>10.275</b>	<b>9.057</b>	<b>6.428</b>	<b>5.662</b>	4.262
<b>4.779</b>	2.852	2.277	1.671	0.924	<b>10.179</b>	<b>8.454</b>	<b>6.162</b>	<b>5.473</b>	4.009
<b>4.729</b>	2.83	2.221	1.588	0.886	<b>10.053</b>	<b>7.879</b>	<b>5.963</b>	<b>5.105</b>	3.414
<b>4.534</b>	2.789	2.157	1.585	0.855	<b>10.022</b>	<b>7.527</b>	<b>5.939</b>	<b>5.079</b>	2.843
4.133	2.619	2.15	1.412	0.783	<b>9.793</b>	<b>7.22</b>	<b>5.884</b>	<b>4.5</b>	1.876
3.889	2.601	1.947	1.349	0.353					
3.543	2.502	1.718	1.25	0.276					

Number of samples above threshold = 5

Number of samples above threshold = 24

False Alarm rate : 5 in 40

Miss rate : 6 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.4**

Probability of correct TARGET detection (sensitivity) = 0.8

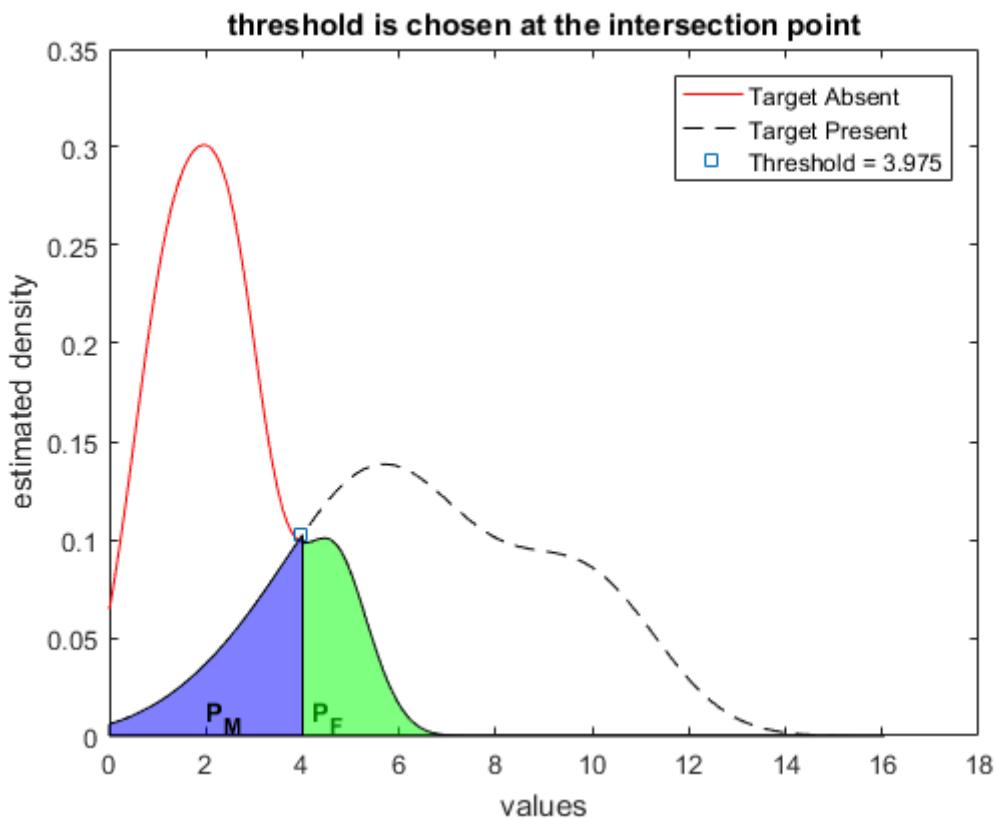
**Probability of Miss = 1 - sensitivity = 0.2**

Probability of correct NO TARGET detection (specificity) = 0.875

**Probability of False Alarm = 1 - specificity = 0.125**

**Positive Predictive Value (PPV) = a posteriori probability = 0.82759**

Overall Accuracy = 0.84286



**Sorted and Partitioned Data : Threshold at 3.975**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.438	3.197	2.481	1.709	1.012	10.719	9.678	6.947	5.727	4.331
4.783	2.899	2.29	1.691	0.963	10.275	9.057	6.428	5.662	4.262
4.779	2.852	2.277	1.671	0.924	10.179	8.454	6.162	5.473	4.009
4.729	2.83	2.221	1.588	0.886	10.053	7.879	5.963	5.105	3.414
4.534	2.789	2.157	1.585	0.855	10.022	7.527	5.939	5.079	2.843
4.133	2.619	2.15	1.412	0.783	9.793	7.22	5.884	4.5	1.876
3.889	2.601	1.947	1.349	0.353					
3.543	2.502	1.718	1.25	0.276					

Number of samples above threshold = 6

Number of samples above threshold = 27

False Alarm rate : 6 in 40

Miss rate : 3 in 30

(c) P. M. Shankar

## Summary of the analysis Morris

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.975**

Probability of correct TARGET detection (sensitivity) = 0.9

**Probability of Miss = 1 - sensitivity = 0.1**

Probability of correct NO TARGET detection (specificity) = 0.85

**Probability of False Alarm = 1 - specificity = 0.15**

**Positive Predictive Value (PPV) = a posteriori probability = 0.81818**

Overall Accuracy = 0.87143

### Confusion Matrix (Threshold Value = 3.975)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	6	34	40
Target Present	27	3	30
Total Counts	33	37	70

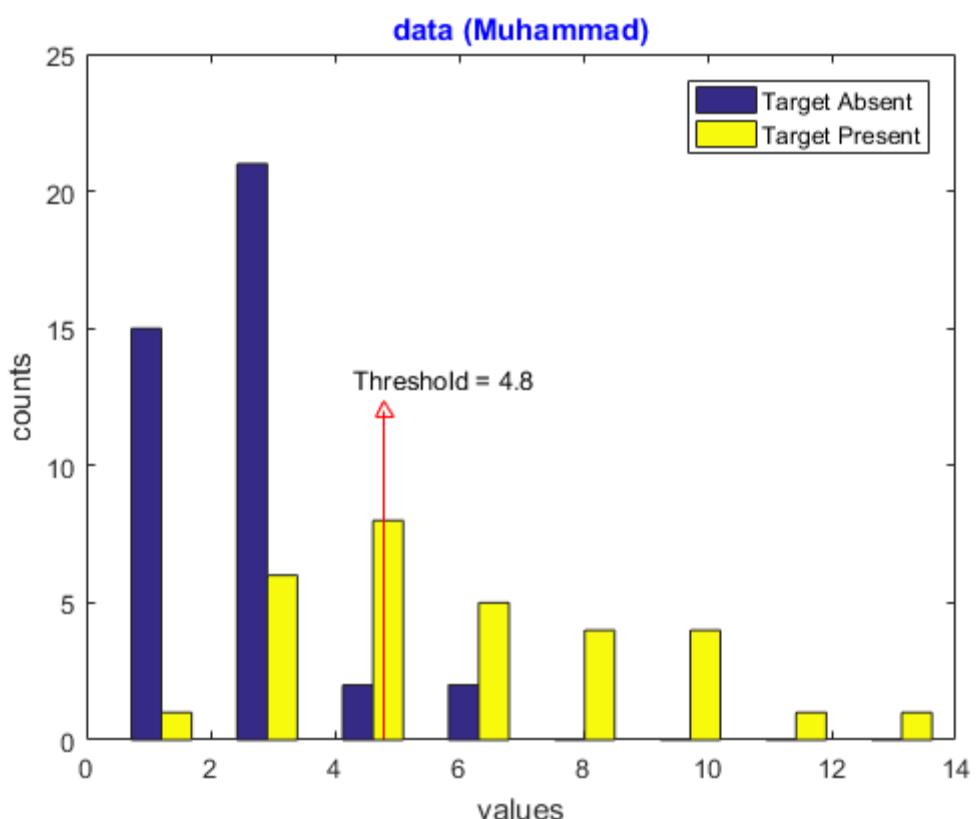
$$P_F = \frac{3}{20} \quad P_M = \frac{1}{10} \quad PPV = \frac{9}{11} \quad \text{err} = \frac{9}{70} \quad \text{acc} = \frac{61}{70}$$

## Summary of the analysis Morris

**data (Muhammad)**

Target Absent					Target Present				
1.037	2.135	3.215	2.14	1.995	6.496	2.178	2.694	2.57	5.023
1.35	2.071	6.118	1.392	1.173	4.981	6.906	8.241	3.647	9.738
3.353	2.291	2.788	2.5	5.671	7.254	6.98	5.667	6.206	8.982
4.134	0.722	4.595	3.024	2.287	4.47	2.329	8.23	5.054	10.306
0.36	3.044	1.967	3.436	1.459	0.95	8.068	4.398	13.982	2.336
2.276	1.201	2.009	2.322	2.989	11.979	5.136	4.92	5.199	9.369
1.077	2.299	0.731	2.235	2.014					
2.897	2.796	2.782	1.414	3.299					

**(c) P. M. Shankar**



### Sorted and Partitioned Data : Threshold at 4.8

Target Absent					Target Present				
<b>6.118</b>	3.044	2.322	2.071	1.35	<b>13.982</b>	<b>8.241</b>	<b>6.496</b>	<b>5.023</b>	2.694
<b>5.671</b>	3.024	2.299	2.014	1.201	<b>11.979</b>	<b>8.23</b>	<b>6.206</b>	<b>4.981</b>	2.57
4.595	2.989	2.291	2.009	1.173	<b>10.306</b>	<b>8.068</b>	<b>5.667</b>	<b>4.92</b>	2.336
4.134	2.897	2.287	1.995	1.077	<b>9.738</b>	<b>7.254</b>	<b>5.199</b>	4.47	2.329
3.436	2.796	2.276	1.967	1.037	<b>9.369</b>	<b>6.98</b>	<b>5.136</b>	4.398	2.178
3.353	2.788	2.235	1.459	0.731	<b>8.982</b>	<b>6.906</b>	<b>5.054</b>	3.647	0.95
3.299	2.782	2.14	1.414	0.722					
3.215	2.5	2.135	1.392	0.36					

**Number of samples above threshold = 2**

**Number of samples above threshold = 21**

False Alarm rate : 2 in 40

Miss rate : 9 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 4.8

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.8**

Probability of correct TARGET detection (sensitivity) = 0.7

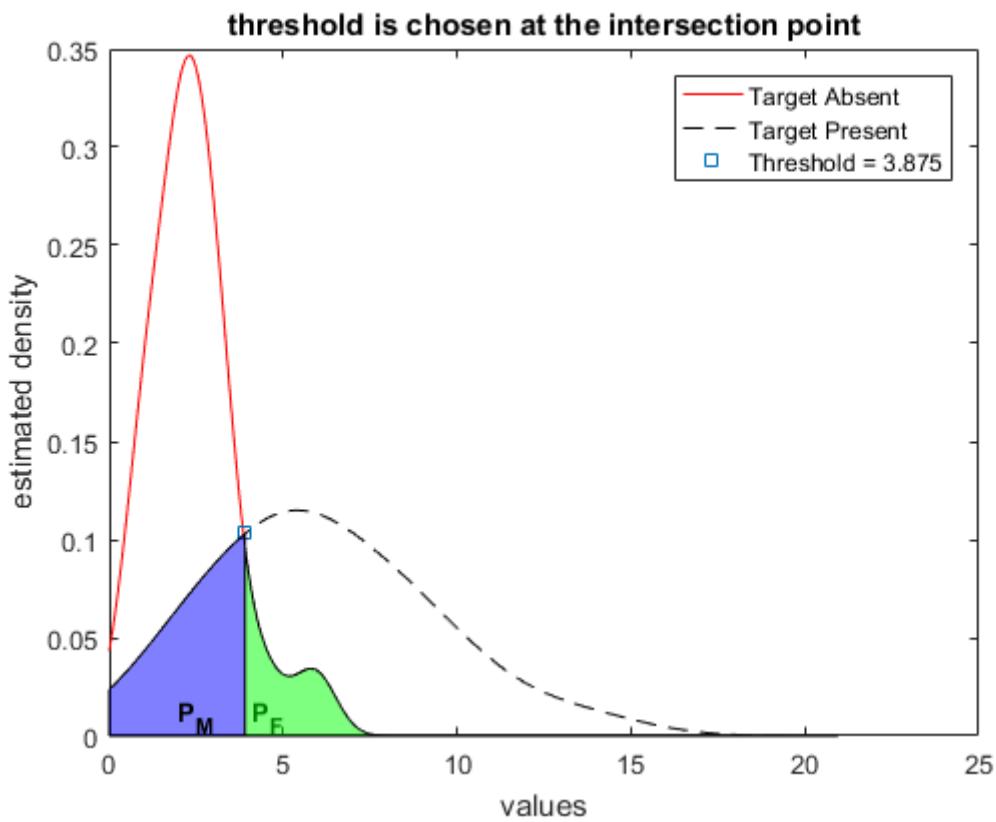
**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.91304**

Overall Accuracy = 0.84286



**Sorted and Partitioned Data : Threshold at 3.875**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>6.118</b>	3.044	2.322	2.071	1.35	<b>13.982</b>	<b>8.241</b>	<b>6.496</b>	<b>5.023</b>	2.694
<b>5.671</b>	3.024	2.299	2.014	1.201	<b>11.979</b>	<b>8.23</b>	<b>6.206</b>	<b>4.981</b>	2.57
<b>4.595</b>	2.989	2.291	2.009	1.173	<b>10.306</b>	<b>8.068</b>	<b>5.667</b>	<b>4.92</b>	2.336
<b>4.134</b>	2.897	2.287	1.995	1.077	<b>9.738</b>	<b>7.254</b>	<b>5.199</b>	<b>4.47</b>	2.329
3.436	2.796	2.276	1.967	1.037	<b>9.369</b>	<b>6.98</b>	<b>5.136</b>	<b>4.398</b>	2.178
3.353	2.788	2.235	1.459	0.731	<b>8.982</b>	<b>6.906</b>	<b>5.054</b>	3.647	0.95
3.299	2.782	2.14	1.414	0.722					
3.215	2.5	2.135	1.392	0.36					

**Number of samples above threshold = 4**

False Alarm rate : 4 in 40

**Number of samples above threshold = 23**

Miss rate : 7 in 30

(c) P. M. Shankar

## Summary of the analysis Muhammad

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.875**

Probability of correct TARGET detection (sensitivity) = 0.76667

**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.85185**

Overall Accuracy = 0.84286

### Confusion Matrix (Threshold Value = 3.875)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	23	7	30
Total Counts	27	43	70

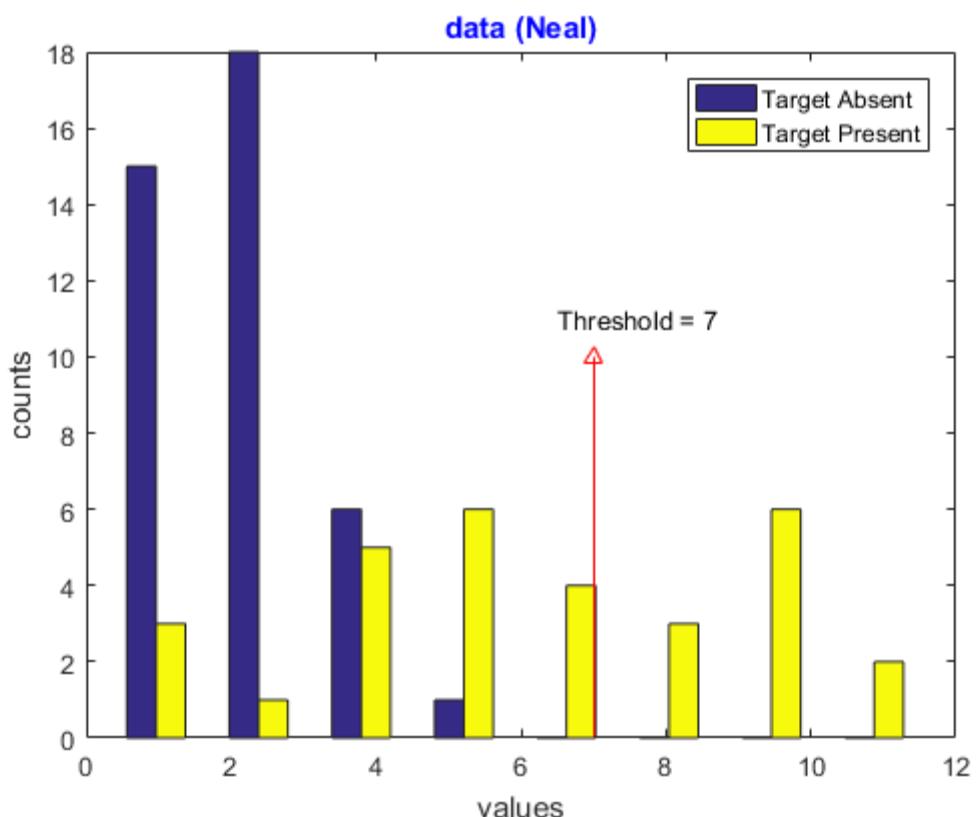
$$P_F = \frac{1}{10} \quad P_M = \frac{7}{30} \quad PPV = \frac{23}{27} \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

## Summary of the analysis Muhammad

data (Neal)

Target Absent					Target Present				
1.398	2.9	1.417	2.427	2.336	9.226	3.941	4.167	10.051	3.339
2.618	1.886	0.64	2.633	2.338	5.287	6.28	3.528	6.519	6.038
1.318	1.262	1.208	2.506	3.248	5.656	4.662	8.999	8.786	11.272
2.2	2.201	2.666	0.492	1.452	9.918	5.154	8.521	9.39	1.519
1.645	1.775	3.589	2.679	4.708	2.379	0.256	4.934	6.001	8.036
3.221	3.432	1.567	1.546	2.671	3.272	5.726	7.597	1.454	11.581
2.624	0.639	3.746	3.354	3.084					
1.458	1.797	1.277	1.472	1.957					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 7

Target Absent					Target Present				
4.708	2.9	2.427	1.775	1.398	<b>11.581</b>	<b>8.999</b>	6.28	5.154	3.339
3.746	2.679	2.338	1.645	1.318	<b>11.272</b>	<b>8.786</b>	6.038	4.934	3.272
3.589	2.671	2.336	1.567	1.277	<b>10.051</b>	<b>8.521</b>	6.001	4.662	2.379
3.432	2.666	2.201	1.546	1.262	<b>9.918</b>	<b>8.036</b>	5.726	4.167	1.519
3.354	2.633	2.2	1.472	1.208	<b>9.39</b>	<b>7.597</b>	5.656	3.941	1.454
3.248	2.624	1.957	1.458	0.64	<b>9.226</b>	6.519	5.287	3.528	0.256
3.221	2.618	1.886	1.452	0.639					
3.084	2.506	1.797	1.417	0.492					

**Number of samples above threshold = 0**

**Number of samples above threshold = 11**

False Alarm rate : 0 in 40

Miss rate : 19 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 7

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 7**

Probability of correct TARGET detection (sensitivity) = 0.36667

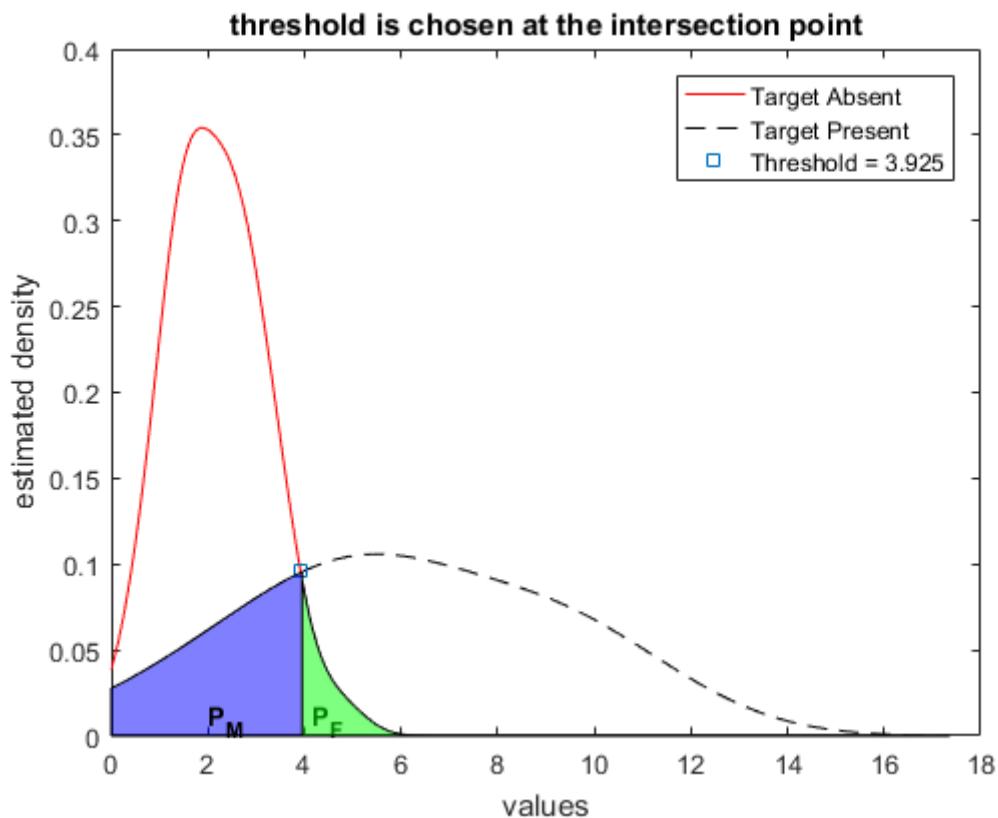
**Probability of Miss = 1 - sensitivity = 0.63333**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.72857



**Sorted and Partitioned Data : Threshold at 3.925**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>4.708</b>	2.9	2.427	1.775	1.398	<b>11.581</b>	<b>8.999</b>	<b>6.28</b>	<b>5.154</b>	3.339
3.746	2.679	2.338	1.645	1.318	<b>11.272</b>	<b>8.786</b>	<b>6.038</b>	<b>4.934</b>	3.272
3.589	2.671	2.336	1.567	1.277	<b>10.051</b>	<b>8.521</b>	<b>6.001</b>	<b>4.662</b>	2.379
3.432	2.666	2.201	1.546	1.262	<b>9.918</b>	<b>8.036</b>	<b>5.726</b>	<b>4.167</b>	1.519
3.354	2.633	2.2	1.472	1.208	<b>9.39</b>	<b>7.597</b>	<b>5.656</b>	<b>3.941</b>	1.454
3.248	2.624	1.957	1.458	0.64	<b>9.226</b>	<b>6.519</b>	<b>5.287</b>	3.528	0.256
3.221	2.618	1.886	1.452	0.639					
3.084	2.506	1.797	1.417	0.492					

**Number of samples above threshold = 1**

**Number of samples above threshold = 23**

False Alarm rate : 1 in 40

Miss rate : 7 in 30

**(c) P. M. Shankar**

## Summary of the analysis Neal

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.925**

Probability of correct TARGET detection (sensitivity) = 0.76667

**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95833**

Overall Accuracy = 0.88571

### Confusion Matrix (Threshold Value = 3.925)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	23	7	30
Total Counts	24	46	70

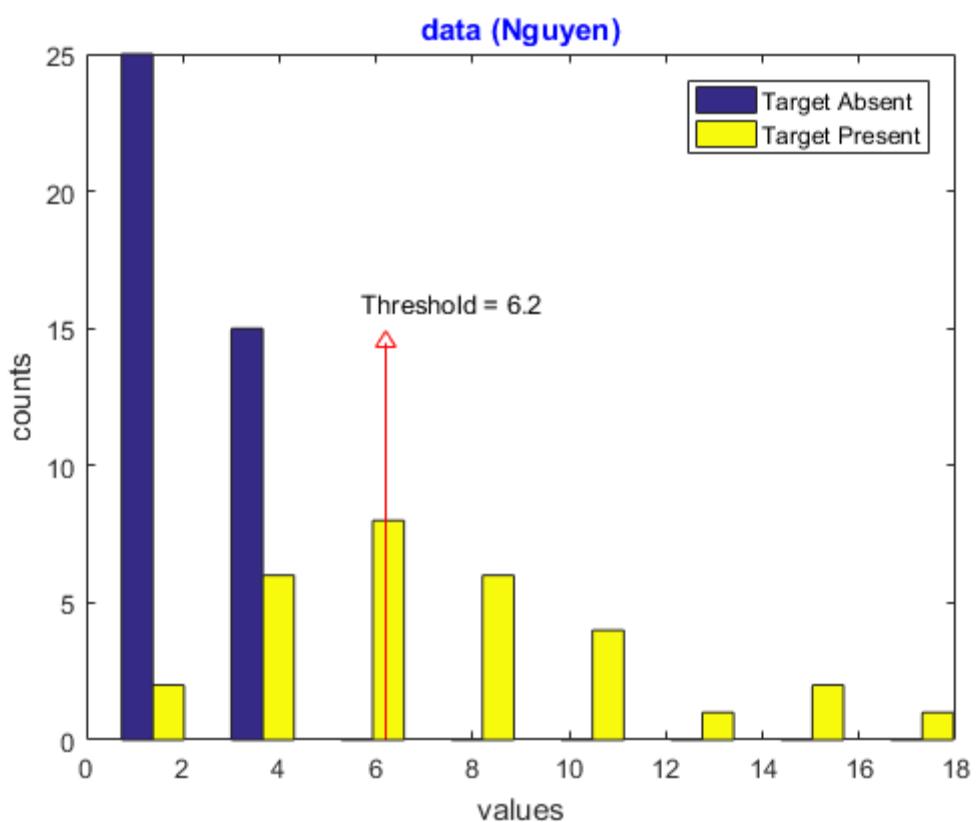
$$P_F = \frac{1}{40} \quad P_M = \frac{7}{30} \quad PPV = \frac{23}{24} \quad \text{err} = \frac{4}{35} \quad \text{acc} = \frac{31}{35}$$

## Summary of the analysis Neal

data (Nguyen)

Target Absent					Target Present				
4.102	2.582	1.401	2.701	0.43	3.688	15.789	3.066	7.155	6.388
0.536	1.61	4.231	0.905	3.933	3.028	6.13	5.859	8.437	9.459
2.468	3.14	1.365	2.506	2.661	4.95	4.477	3.494	6.863	15.615
1.243	3.957	1.315	4.251	2.28	18.441	5.858	9.14	5.795	10.815
1.362	4.283	2.074	0.369	1.063	8.937	1.775	1.915	10.239	10.306
3.499	1.961	0.292	0.242	1.633	8.259	7.367	13.569	6.317	2.694
4.408	1.984	1.016	2.43	1.944					
3.086	3.724	2.39	3.101	0.309					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 6.2

Target Absent					Target Present			
4.408	3.499	2.468	1.633	1.016	18.441	10.239	7.367	5.859
4.283	3.14	2.43	1.61	0.905	15.789	9.459	7.155	5.858
4.251	3.101	2.39	1.401	0.536	15.615	9.14	6.863	5.795
4.231	3.086	2.28	1.365	0.43	13.569	8.937	6.388	4.95
4.102	2.701	2.074	1.362	0.369	10.815	8.437	6.317	4.477
3.957	2.661	1.984	1.315	0.309	10.306	8.259	6.13	3.688
3.933	2.582	1.961	1.243	0.292				
3.724	2.506	1.944	1.063	0.242				

Number of samples above threshold = 0

Number of samples above threshold = 17

False Alarm rate : 0 in 40

Miss rate : 13 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 6.2

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6.2**

Probability of correct TARGET detection (sensitivity) = 0.56667

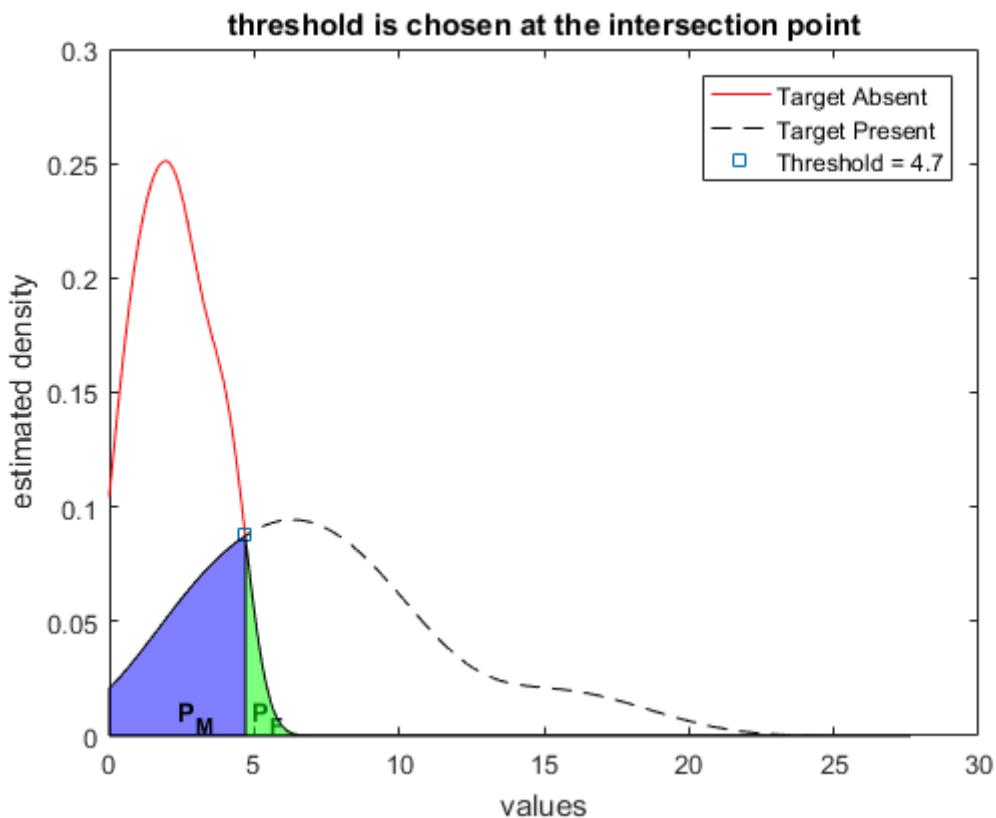
**Probability of Miss = 1 - sensitivity = 0.43333**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.81429



**Sorted and Partitioned Data : Threshold at 4.7**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.408	3.499	2.468	1.633	1.016	<b>18.441</b>	<b>10.239</b>	<b>7.367</b>	<b>5.859</b>	3.494
4.283	3.14	2.43	1.61	0.905	<b>15.789</b>	<b>9.459</b>	<b>7.155</b>	<b>5.858</b>	3.066
4.251	3.101	2.39	1.401	0.536	<b>15.615</b>	<b>9.14</b>	<b>6.863</b>	<b>5.795</b>	3.028
4.231	3.086	2.28	1.365	0.43	<b>13.569</b>	<b>8.937</b>	<b>6.388</b>	<b>4.95</b>	2.694
4.102	2.701	2.074	1.362	0.369	<b>10.815</b>	<b>8.437</b>	<b>6.317</b>	4.477	1.915
3.957	2.661	1.984	1.315	0.309	<b>10.306</b>	<b>8.259</b>	<b>6.13</b>	3.688	1.775
3.933	2.582	1.961	1.243	0.292					
3.724	2.506	1.944	1.063	0.242					

**Number of samples above threshold = 0**

False Alarm rate : 0 in 40

**Number of samples above threshold = 22**

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis Nguyen

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.7**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.88571

### Confusion Matrix (Threshold Value = 4.7)

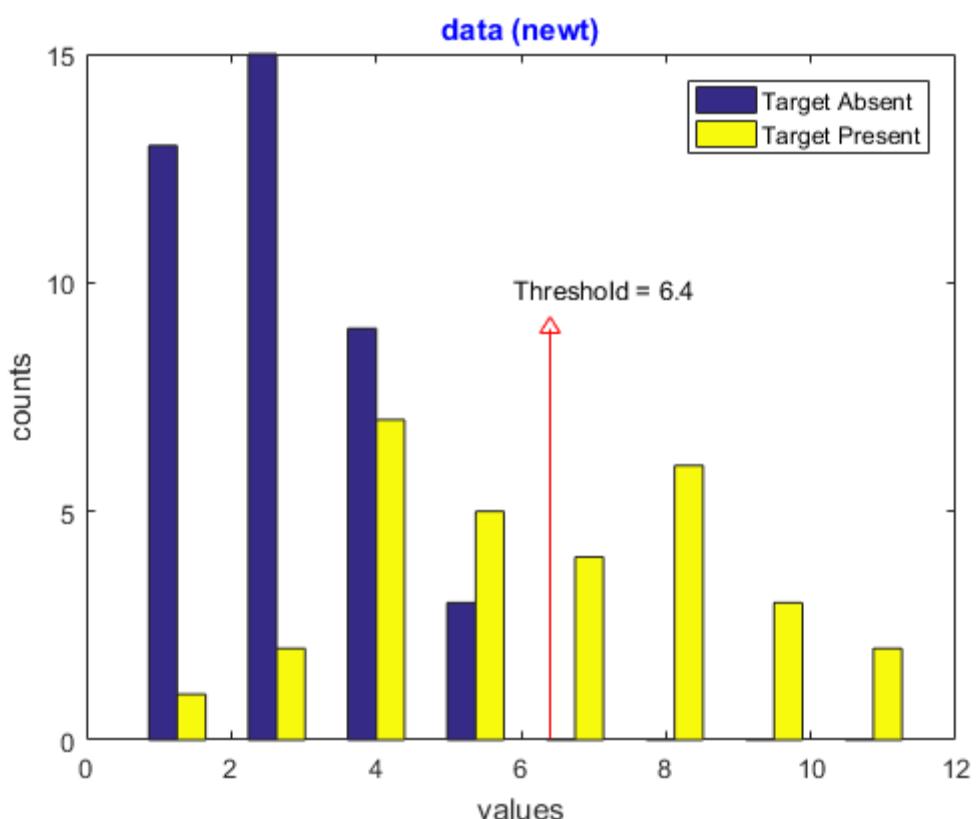
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	0	40	40
Target Present	22	8	30
Total Counts	22	48	70

$$P_F = 0 \quad P_M = \frac{4}{15} \quad PPV = 1 \quad \text{err} = \frac{4}{35} \quad \text{acc} = \frac{31}{35}$$

## Summary of the analysis Nguyen

data (newt)									
Target Absent					Target Present				
1.011	1.322	0.961	3.327	1.418	3.756	7.013	6.935	8.485	4.778
1.044	3.297	1.814	1.767	2.634	4.326	9.181	6	11.551	3.357
4.148	3.751	5.028	2.013	2.311	2.669	9.87	4.412	3.53	2.42
3.686	4.422	2.575	4.977	3.179	11.167	9.256	6.477	8.288	5.976
4.371	2.386	2.116	0.569	2.155	8.506	7.409	4.201	8.447	4.75
3.829	2.375	1.373	1.809	5.349	3.94	7.746	1.517	5.751	7.634
3.053	3.192	0.799	2.579	4.385					
0.619	0.987	2.915	2.73	3.871					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 6.4

Target Absent					Target Present				
5.349	3.829	2.915	2.155	1.322	11.551	8.485	7.013	4.778	3.756
5.028	3.751	2.73	2.116	1.044	11.167	8.447	6.935	4.75	3.53
4.977	3.686	2.634	2.013	1.011	9.87	8.288	6.477	4.412	3.357
4.422	3.327	2.579	1.814	0.987	9.256	7.746	6	4.326	2.669
4.385	3.297	2.575	1.809	0.961	9.181	7.634	5.976	4.201	2.42
4.371	3.192	2.386	1.767	0.799	8.506	7.409	5.751	3.94	1.517
4.148	3.179	2.375	1.418	0.619					
3.871	3.053	2.311	1.373	0.569					

Number of samples above threshold = 0

Number of samples above threshold = 15

False Alarm rate : 0 in 40

Miss rate : 15 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 6.4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6.4**

Probability of correct TARGET detection (sensitivity) = 0.5

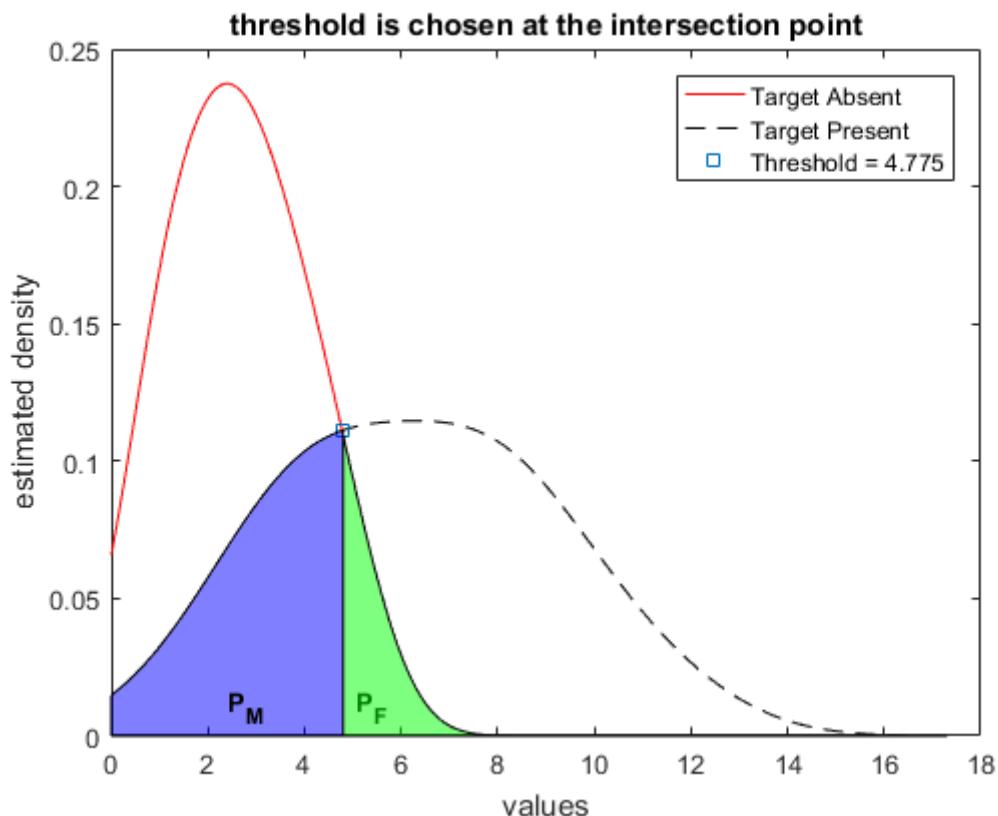
**Probability of Miss = 1 - sensitivity = 0.5**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.78571



**Sorted and Partitioned Data : Threshold at 4.775**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.349	3.829	2.915	2.155	1.322	11.551	8.485	7.013	4.778	3.756
5.028	3.751	2.73	2.116	1.044	11.167	8.447	6.935	4.75	3.53
4.977	3.686	2.634	2.013	1.011	9.87	8.288	6.477	4.412	3.357
4.422	3.327	2.579	1.814	0.987	9.256	7.746	6	4.326	2.669
4.385	3.297	2.575	1.809	0.961	9.181	7.634	5.976	4.201	2.42
4.371	3.192	2.386	1.767	0.799	8.506	7.409	5.751	3.94	1.517
4.148	3.179	2.375	1.418	0.619					
3.871	3.053	2.311	1.373	0.569					

Number of samples above threshold = 3

Number of samples above threshold = 19

False Alarm rate : 3 in 40

Miss rate : 11 in 30

(c) P. M. Shankar

## Summary of the analysis newt

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.775**

Probability of correct TARGET detection (sensitivity) = 0.63333

**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.86364**

Overall Accuracy = 0.8

### Confusion Matrix (Threshold Value = 4.775)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	19	11	30
Total Counts	22	48	70

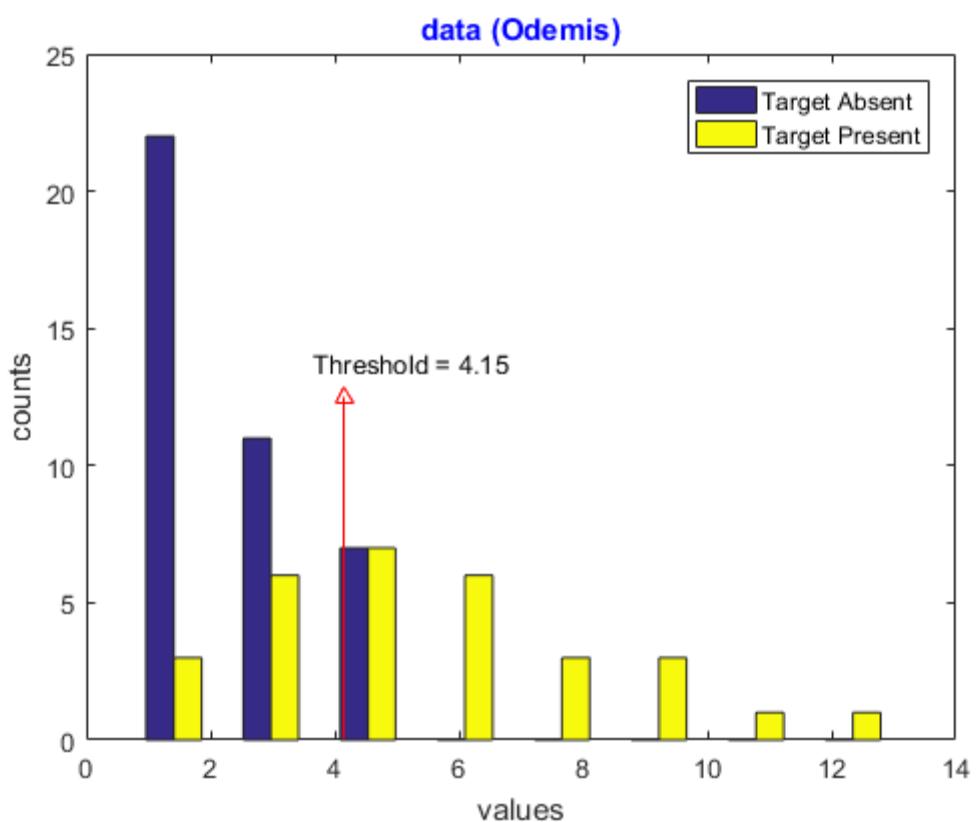
$$P_F = \frac{3}{40} \quad P_M = \frac{11}{30} \quad \text{PPV} = \frac{19}{22} \quad \text{err} = \frac{1}{5} \quad \text{acc} = \frac{4}{5}$$

## Summary of the analysis newt

data (Odemis)

Target Absent					Target Present				
3.374	2.373	0.982	1.694	4.549	1.572	3.719	4.743	3.743	4.894
2.552	2.128	2.046	4.966	1.466	5.63	3.405	6.033	7.158	6.001
1.874	3.164	2.889	2.176	0.996	4.228	4.924	11.104	8.319	13.125
1.105	3.411	2.827	3.073	1.746	5.775	6.567	5.26	1.934	8.703
2.039	2.063	0.891	1.12	3.094	3.585	6.138	1.778	8.967	9.119
1.665	2.846	1.377	1.462	1.372	2.538	4.632	4.362	3.196	7.453
2.957	4.451	1.464	4.161	0.972					
3.842	0.63	3.771	4.013	1.15					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.15

Target Absent					Target Present				
<b>4.966</b>	3.374	2.552	1.746	1.15	<b>13.125</b>	<b>7.453</b>	<b>5.775</b>	<b>4.632</b>	3.405
<b>4.549</b>	3.164	2.373	1.694	1.12	<b>11.104</b>	<b>7.158</b>	<b>5.63</b>	<b>4.362</b>	3.196
<b>4.451</b>	3.094	2.176	1.665	1.105	<b>9.119</b>	<b>6.567</b>	<b>5.26</b>	<b>4.228</b>	2.538
<b>4.161</b>	3.073	2.128	1.466	0.996	<b>8.967</b>	<b>6.138</b>	<b>4.924</b>	3.743	1.934
4.013	2.957	2.063	1.464	0.982	<b>8.703</b>	<b>6.033</b>	<b>4.894</b>	3.719	1.778
3.842	2.889	2.046	1.462	0.972	<b>8.319</b>	<b>6.001</b>	<b>4.743</b>	3.585	1.572
3.771	2.846	2.039	1.377	0.891					
3.411	2.827	1.874	1.372	0.63					

Number of samples above threshold = 4

Number of samples above threshold = 21

False Alarm rate : 4 in 40

Miss rate : 9 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.15

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.15**

Probability of correct TARGET detection (sensitivity) = 0.7

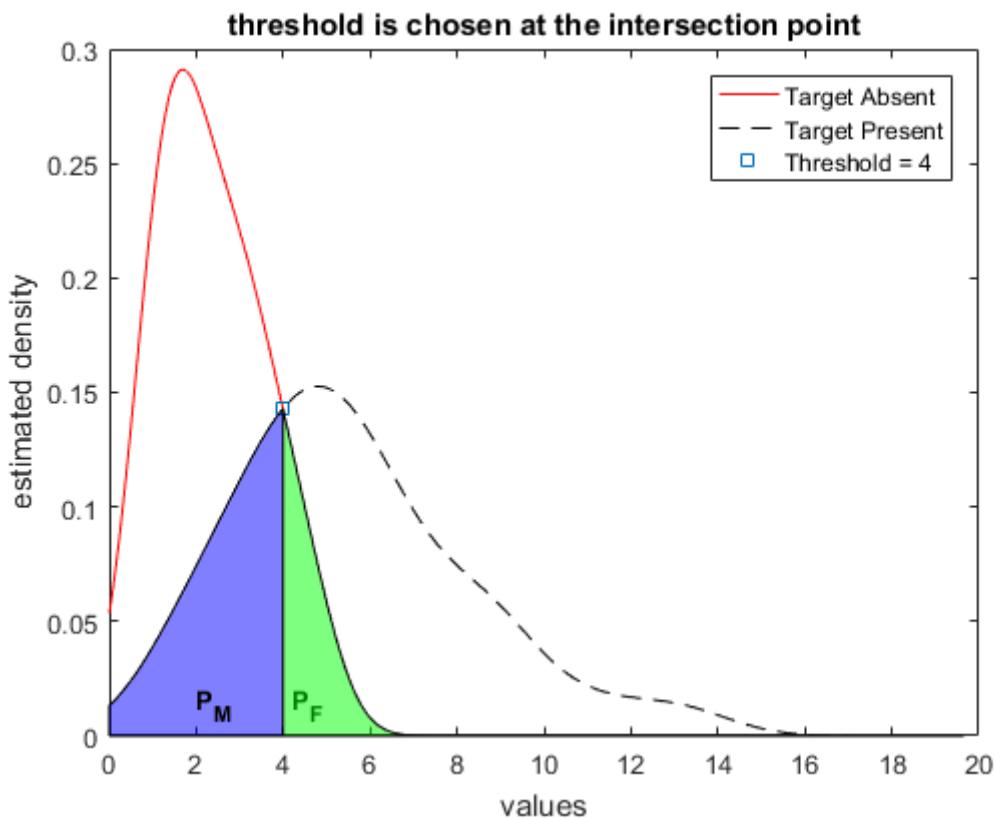
**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.84**

Overall Accuracy = 0.81429



**Sorted and Partitioned Data : Threshold at 4**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>4.966</b>	3.374	2.552	1.746	1.15	<b>13.125</b>	<b>7.453</b>	<b>5.775</b>	<b>4.632</b>	3.405
<b>4.549</b>	3.164	2.373	1.694	1.12	<b>11.104</b>	<b>7.158</b>	<b>5.63</b>	<b>4.362</b>	3.196
<b>4.451</b>	3.094	2.176	1.665	1.105	<b>9.119</b>	<b>6.567</b>	<b>5.26</b>	<b>4.228</b>	2.538
<b>4.161</b>	3.073	2.128	1.466	0.996	<b>8.967</b>	<b>6.138</b>	<b>4.924</b>	3.743	1.934
<b>4.013</b>	2.957	2.063	1.464	0.982	<b>8.703</b>	<b>6.033</b>	<b>4.894</b>	3.719	1.778
3.842	2.889	2.046	1.462	0.972	<b>8.319</b>	<b>6.001</b>	<b>4.743</b>	3.585	1.572
3.771	2.846	2.039	1.377	0.891					
3.411	2.827	1.874	1.372	0.63					

Number of samples above threshold = 5

Number of samples above threshold = 21

False Alarm rate : 5 in 40

Miss rate : 9 in 30

(c) P. M. Shankar

## Summary of the analysis Odemis

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4**

Probability of correct TARGET detection (sensitivity) = 0.7

**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.875

**Probability of False Alarm = 1 - specificity = 0.125**

**Positive Predictive Value (PPV) = a posteriori probability = 0.80769**

Overall Accuracy = 0.8

### Confusion Matrix (Threshold Value = 4)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	5	35	40
Target Present	21	9	30
Total Counts	26	44	70

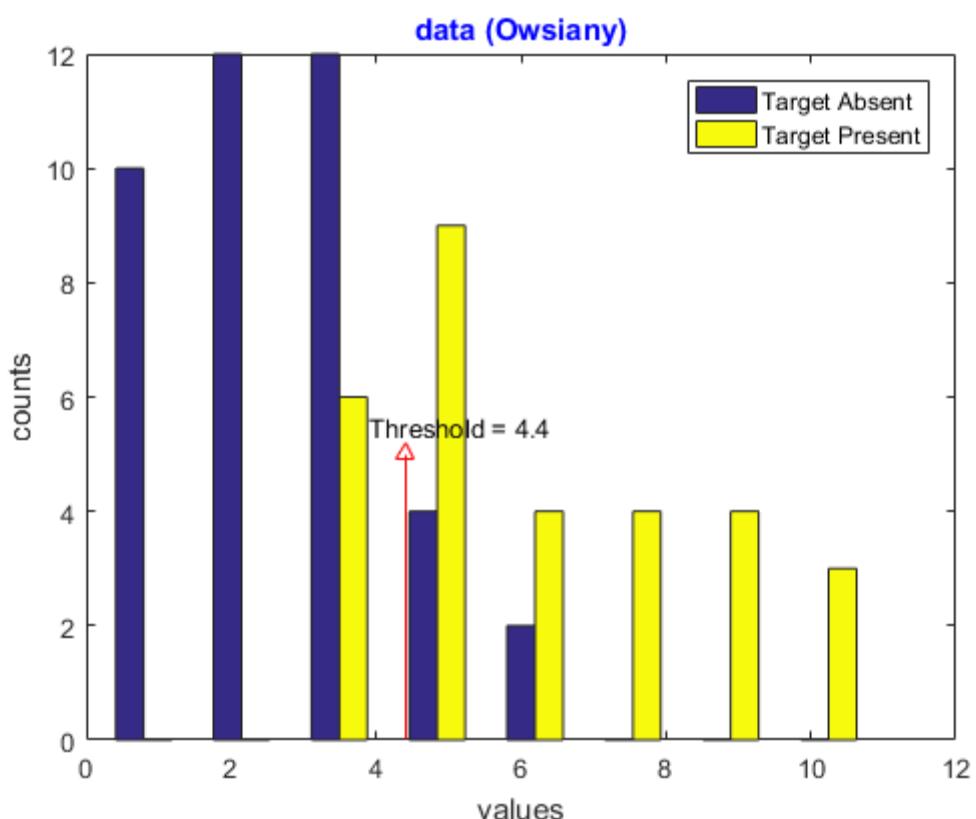
$$P_F = \frac{1}{8} \quad P_M = \frac{3}{10} \quad PPV = \frac{21}{26} \quad \text{err} = \frac{1}{5} \quad \text{acc} = \frac{4}{5}$$

## Summary of the analysis Odemis

data (Owsiany)

Target Absent					Target Present				
4.597	5.169	2.891	1.18	3.216	7.557	4.37	4.015	10.839	4.311
2.983	3.63	1.416	0.649	1.912	8.899	10.92	8.83	7.849	9.361
2.264	3.256	1.741	3.258	5.809	4.834	6.427	3.249	3.567	4.234
0.117	4.169	2.418	3.182	1.31	5.84	6.052	7.485	3.318	9.96
1.666	2.168	5.917	1.953	0.877	5.141	5.11	4.497	9.203	5.503
2.13	3.237	4.684	0.202	1.686	5.175	4.001	3.361	7.39	6.188
1.903	3.337	1.047	0.686	1.812					
3.175	2.286	2.978	3.995	0.909					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.4

Target Absent					Target Present				
<b>5.917</b>	3.337	2.978	1.912	1.18	<b>10.92</b>	<b>8.83</b>	<b>6.188</b>	<b>5.11</b>	4.015
<b>5.809</b>	3.258	2.891	1.903	1.047	<b>10.839</b>	<b>7.849</b>	<b>6.052</b>	<b>4.834</b>	4.001
<b>5.169</b>	3.256	2.418	1.812	0.909	<b>9.96</b>	<b>7.557</b>	<b>5.84</b>	<b>4.497</b>	3.567
<b>4.684</b>	3.237	2.286	1.741	0.877	<b>9.361</b>	<b>7.485</b>	<b>5.503</b>	4.37	3.361
<b>4.597</b>	3.216	2.264	1.686	0.686	<b>9.203</b>	<b>7.39</b>	<b>5.175</b>	4.311	3.318
4.169	3.182	2.168	1.666	0.649	<b>8.899</b>	<b>6.427</b>	<b>5.141</b>	4.234	3.249
3.995	3.175	2.13	1.416	0.202					
3.63	2.983	1.953	1.31	0.117					

Number of samples above threshold = 5

Number of samples above threshold = 21

False Alarm rate : 5 in 40

Miss rate : 9 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.4**

Probability of correct TARGET detection (sensitivity) = 0.7

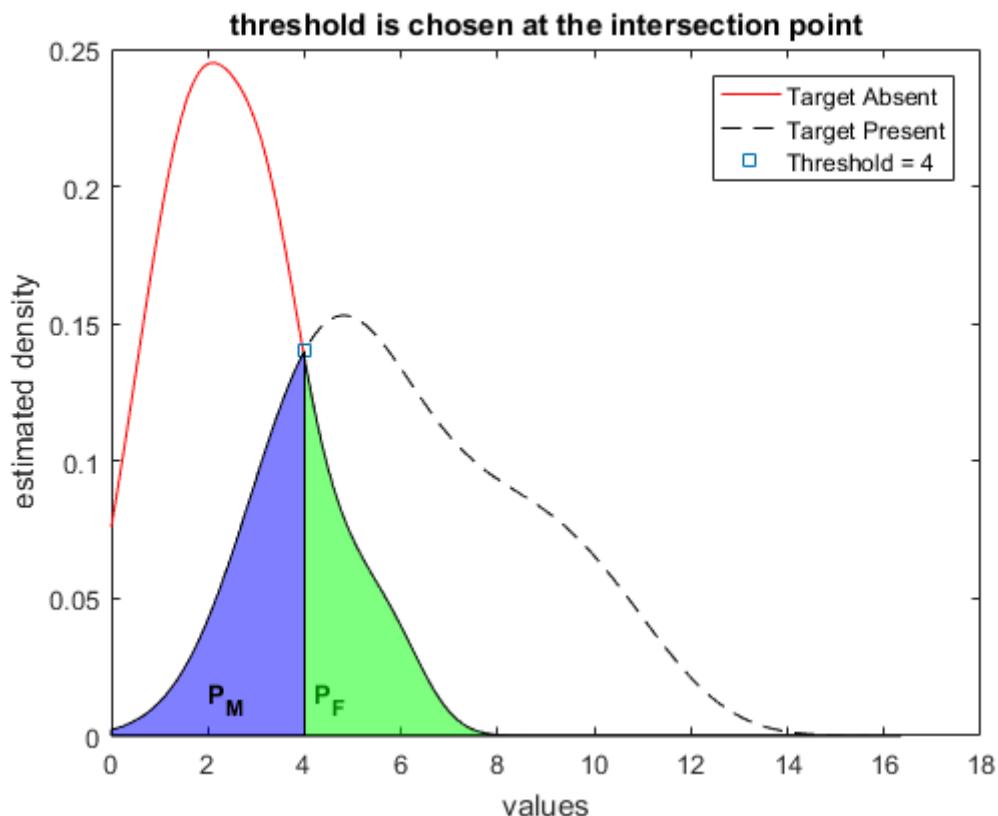
**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.875

**Probability of False Alarm = 1 - specificity = 0.125**

**Positive Predictive Value (PPV) = a posteriori probability = 0.80769**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 4**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.917	3.337	2.978	1.912	1.18	10.92	8.83	6.188	5.11	4.015
5.809	3.258	2.891	1.903	1.047	10.839	7.849	6.052	4.834	4.001
5.169	3.256	2.418	1.812	0.909	9.96	7.557	5.84	4.497	3.567
4.684	3.237	2.286	1.741	0.877	9.361	7.485	5.503	4.37	3.361
4.597	3.216	2.264	1.686	0.686	9.203	7.39	5.175	4.311	3.318
4.169	3.182	2.168	1.666	0.649	8.899	6.427	5.141	4.234	3.249
3.995	3.175	2.13	1.416	0.202					
3.63	2.983	1.953	1.31	0.117					

Number of samples above threshold = 6

Number of samples above threshold = 26

False Alarm rate : 6 in 40

Miss rate : 4 in 30

(c) P. M. Shankar

## Summary of the analysis Owsiany

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4**

Probability of correct TARGET detection (sensitivity) = 0.86667

**Probability of Miss = 1 - sensitivity = 0.13333**

Probability of correct NO TARGET detection (specificity) = 0.85

**Probability of False Alarm = 1 - specificity = 0.15**

**Positive Predictive Value (PPV) = a posteriori probability = 0.8125**

Overall Accuracy = 0.85714

**Confusion Matrix (Threshold Value = 4)**

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	6	34	40
Target Present	26	4	30
Total Counts	32	38	70

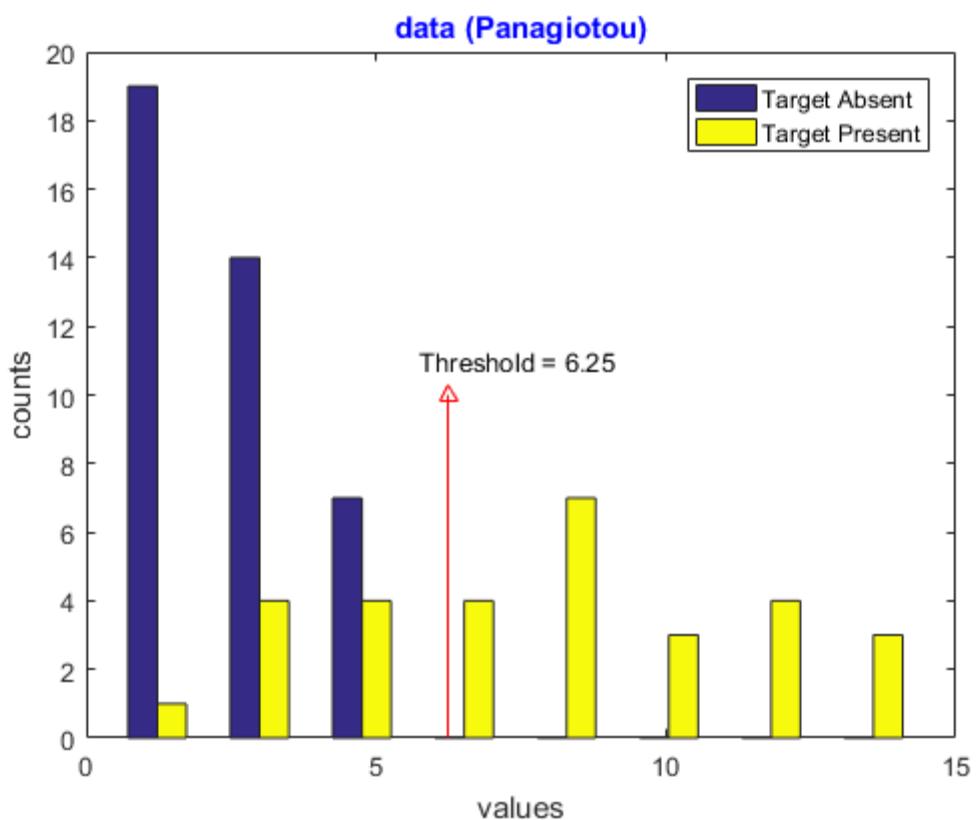
$$P_F = \frac{3}{20} \quad P_M = \frac{2}{15} \quad PPV = \frac{13}{16} \quad \text{err} = \frac{1}{7} \quad \text{acc} = \frac{6}{7}$$

## Summary of the analysis Owsiany

data (Panagiotou)

Target Absent					Target Present				
1.172	0.387	3.915	4.498	1.061	3.645	14.461	7.964	11.229	8.278
1.522	0.693	1.974	2.12	1.594	11.131	9.611	13.158	0.922	5.333
2.893	1.355	2.504	1.97	2.937	10.417	6.335	11.352	4.548	7.512
1.114	4.885	0.741	4.028	5.545	6.812	4.592	3.846	11.146	7.848
2.56	3.182	3.03	1.647	2.708	3.142	7.934	8.697	4.551	6.223
1.985	3.428	0.941	2.53	1.389	6.018	8.483	9.456	3.143	13.192
5.067	1.678	0.343	3.507	3.618					
1.03	2.867	2.627	1.286	5.188					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 6.25

Target Absent					Target Present				
5.545	3.507	2.627	1.678	1.114	14.461	11.131	8.278	6.335	4.548
5.188	3.428	2.56	1.647	1.061	13.192	10.417	7.964	6.223	3.846
5.067	3.182	2.53	1.594	1.03	13.158	9.611	7.934	6.018	3.645
4.885	3.03	2.504	1.522	0.941	11.352	9.456	7.848	5.333	3.143
4.498	2.937	2.12	1.389	0.741	11.229	8.697	7.512	4.592	3.142
4.028	2.893	1.985	1.355	0.693	11.146	8.483	6.812	4.551	0.922
3.915	2.867	1.974	1.286	0.387					
3.618	2.708	1.97	1.172	0.343					

Number of samples above threshold = 0

Number of samples above threshold = 19

False Alarm rate : 0 in 40

Miss rate : 11 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 6.25

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6.25**

Probability of correct TARGET detection (sensitivity) = 0.63333

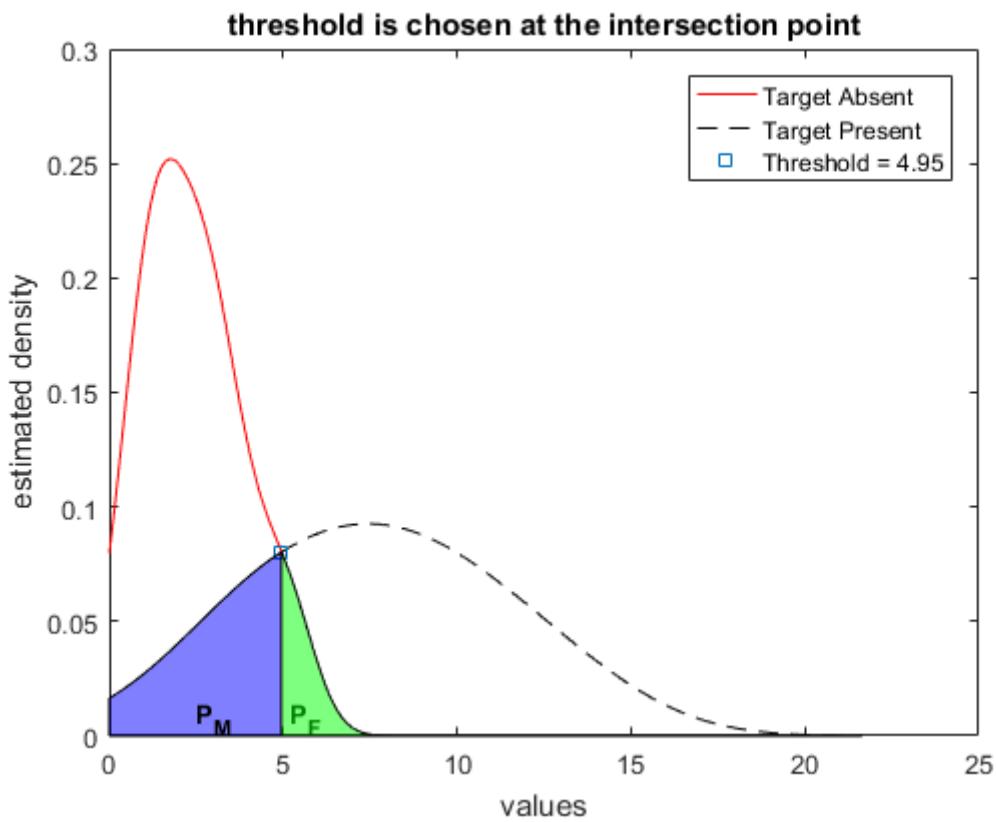
**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.84286



**Sorted and Partitioned Data : Threshold at 4.95**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.545	3.507	2.627	1.678	1.114	14.461	11.131	8.278	6.335	4.548
5.188	3.428	2.56	1.647	1.061	13.192	10.417	7.964	6.223	3.846
5.067	3.182	2.53	1.594	1.03	13.158	9.611	7.934	6.018	3.645
4.885	3.03	2.504	1.522	0.941	11.352	9.456	7.848	5.333	3.143
4.498	2.937	2.12	1.389	0.741	11.229	8.697	7.512	4.592	3.142
4.028	2.893	1.985	1.355	0.693	11.146	8.483	6.812	4.551	0.922
3.915	2.867	1.974	1.286	0.387					
3.618	2.708	1.97	1.172	0.343					

**Number of samples above threshold = 3**

False Alarm rate : 3 in 40

**Number of samples above threshold = 22**

Miss rate : 8 in 30

**(c) P. M. Shankar**

## Summary of the analysis Panagiotou

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.95**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.88**

Overall Accuracy = 0.84286

### Confusion Matrix (Threshold Value = 4.95)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	22	8	30
Total Counts	25	45	70

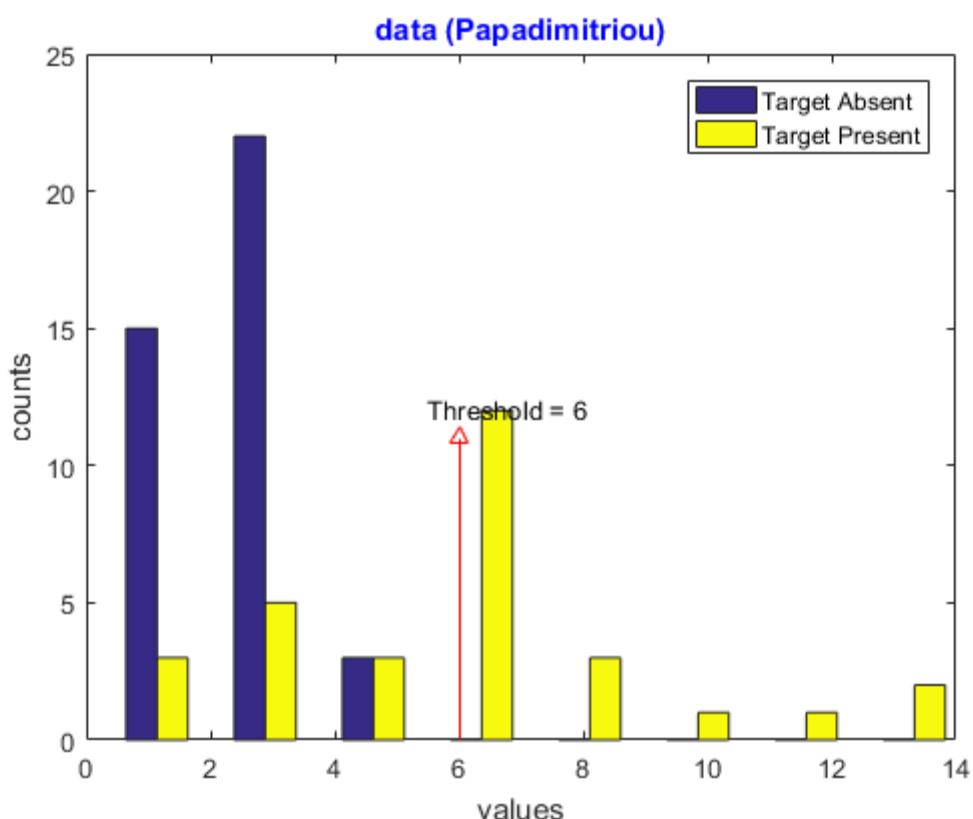
$$P_F = \frac{3}{40} \quad P_M = \frac{4}{15} \quad PPV = \frac{22}{25} \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

## Summary of the analysis Panagiotou

data (Papadimitriou)

Target Absent					Target Present				
2.547	1.613	2.034	2.562	3.395	8.771	2.516	4.368	14.205	6.22
1.375	2.892	2.024	2.864	2.692	4.895	9.802	3.073	5.907	11.579
3.12	0.378	1.803	2.571	2.808	8.219	5.736	3.36	1.06	7.221
1.831	3.131	0.532	1.927	2.562	6.319	3.287	7.895	6.432	6.587
1.969	2.632	1.123	0.824	5.267	12.484	1.989	6.686	5.787	3.268
2.909	1.472	2.879	3.711	2.784	6.322	4.562	1.448	6.135	6.927
2.542	4.043	0.882	0.269	1.556					
2.746	0.553	3.499	3.774	2.764					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 6

Target Absent					Target Present				
5.267	2.909	2.692	2.024	1.375	<b>14.205</b>	<b>7.895</b>	<b>6.322</b>	5.736	3.268
4.043	2.892	2.632	1.969	1.123	<b>12.484</b>	<b>7.221</b>	<b>6.319</b>	4.895	3.073
3.774	2.879	2.571	1.927	0.882	<b>11.579</b>	<b>6.927</b>	<b>6.22</b>	4.562	2.516
3.711	2.864	2.562	1.831	0.824	<b>9.802</b>	<b>6.686</b>	<b>6.135</b>	4.368	1.989
3.499	2.808	2.562	1.803	0.553	<b>8.771</b>	<b>6.587</b>	5.907	3.36	1.448
3.395	2.784	2.547	1.613	0.532	<b>8.219</b>	<b>6.432</b>	5.787	3.287	1.06
3.131	2.764	2.542	1.556	0.378					
3.12	2.746	2.034	1.472	0.269					

**Number of samples above threshold = 0**

**Number of samples above threshold = 16**

False Alarm rate : 0 in 40

Miss rate : 14 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 6

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6**

Probability of correct TARGET detection (sensitivity) = 0.53333

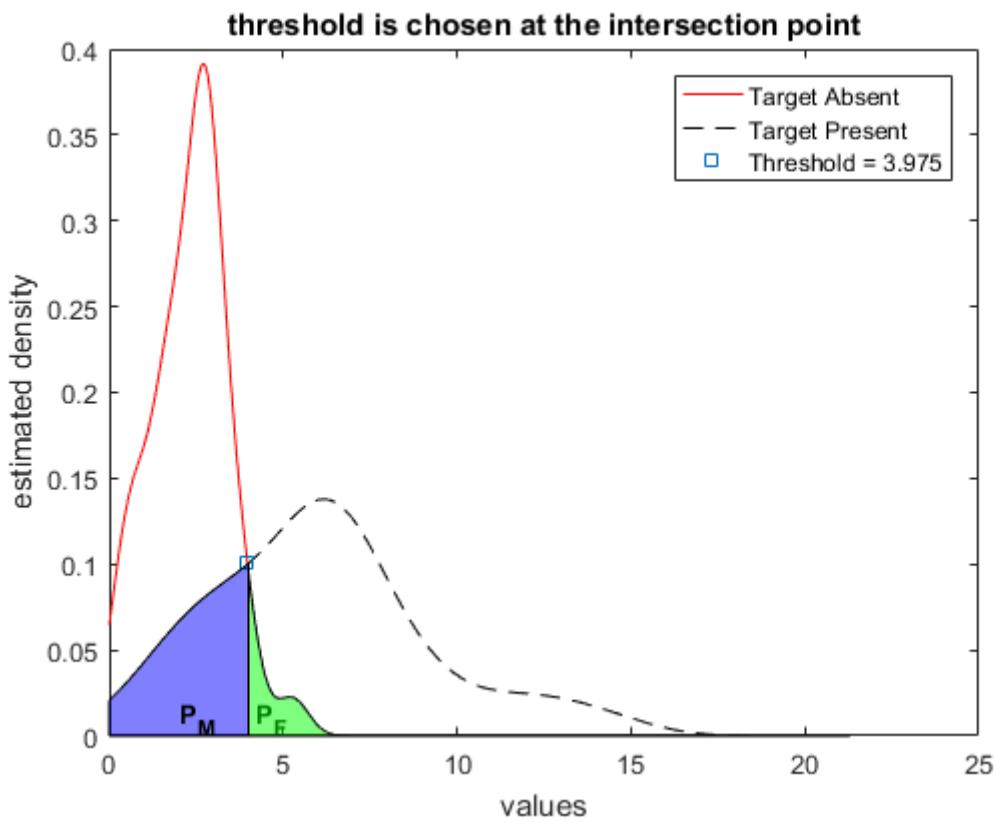
**Probability of Miss = 1 - sensitivity = 0.46667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 3.975**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.267	2.909	2.692	2.024	1.375	14.205	7.895	6.322	5.736	3.268
4.043	2.892	2.632	1.969	1.123	12.484	7.221	6.319	4.895	3.073
3.774	2.879	2.571	1.927	0.882	11.579	6.927	6.22	4.562	2.516
3.711	2.864	2.562	1.831	0.824	9.802	6.686	6.135	4.368	1.989
3.499	2.808	2.562	1.803	0.553	8.771	6.587	5.907	3.36	1.448
3.395	2.784	2.547	1.613	0.532	8.219	6.432	5.787	3.287	1.06
3.131	2.764	2.542	1.556	0.378					
3.12	2.746	2.034	1.472	0.269					

Number of samples above threshold = 2

Number of samples above threshold = 22

False Alarm rate : 2 in 40

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis Papadimitriou

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.975**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.91667**

Overall Accuracy = 0.85714

### Confusion Matrix (Threshold Value = 3.975)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	22	8	30
Total Counts	24	46	70

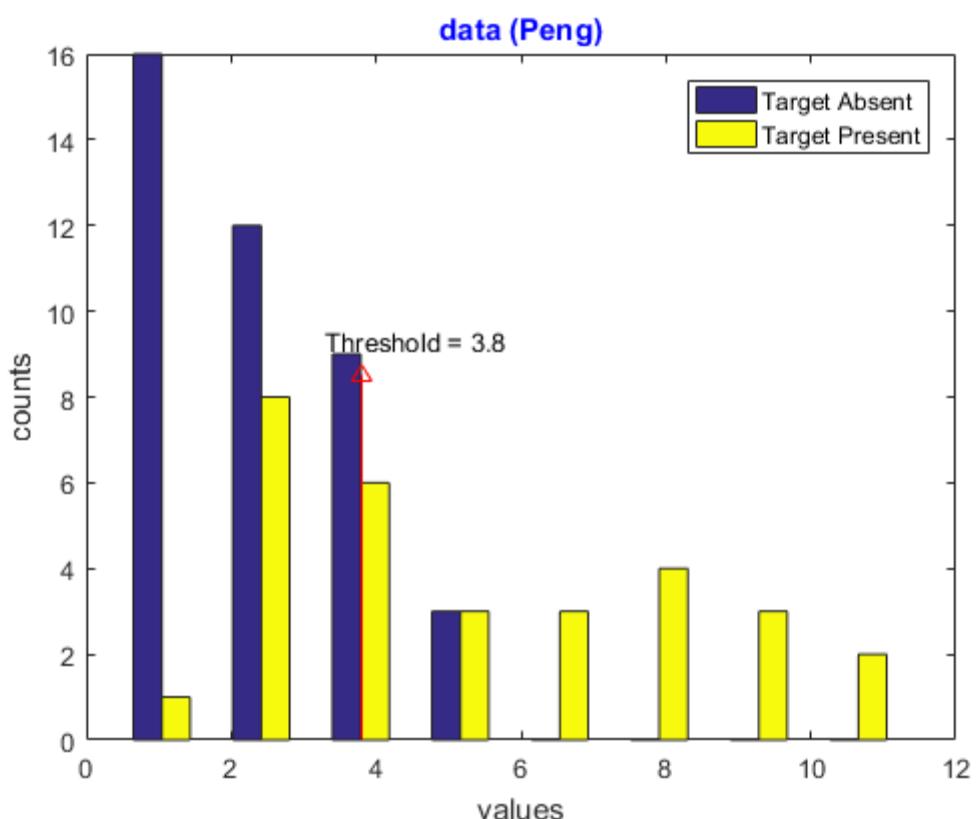
$$P_F = \frac{1}{20} \quad P_M = \frac{4}{15} \quad PPV = \frac{11}{12} \quad \text{err} = \frac{1}{7} \quad \text{acc} = \frac{6}{7}$$

## Summary of the analysis Papadimitriou

data (Peng)

Target Absent					Target Present				
1.959	0.822	3.463	1.261	2.224	2.324	3.767	7.289	8.71	2.437
1.393	1.622	2.451	3.392	3.772	0.644	3.871	2.442	8.146	2.854
3.082	3.994	2.045	1.323	3.922	3.301	4.522	3.41	8.039	6.082
2.399	3.65	4.263	0.961	0.356	7.446	9.44	11.342	6.661	2.096
3.021	1.551	1.621	5.274	1.081	11.096	2.305	5.302	1.765	5.01
3.769	1.612	2.151	4.534	1.042	1.903	3.704	9.018	4.142	5.981
0.715	2.581	1.989	4.065	1.273					
5.146	1.433	2.748	1.647	2.391					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 3.8

Target Absent					Target Present				
<b>5.274</b>	3.769	2.451	1.647	1.273	<b>11.342</b>	<b>8.039</b>	<b>5.302</b>	3.704	2.324
<b>5.146</b>	3.65	2.399	1.622	1.261	<b>11.096</b>	<b>7.446</b>	<b>5.01</b>	3.41	2.305
<b>4.534</b>	3.463	2.391	1.621	1.081	<b>9.44</b>	<b>7.289</b>	<b>4.522</b>	3.301	2.096
<b>4.263</b>	3.392	2.224	1.612	1.042	<b>9.018</b>	<b>6.661</b>	<b>4.142</b>	2.854	1.903
<b>4.065</b>	3.082	2.151	1.551	0.961	<b>8.71</b>	<b>6.082</b>	<b>3.871</b>	2.442	1.765
<b>3.994</b>	3.021	2.045	1.433	0.822	<b>8.146</b>	<b>5.981</b>	3.767	2.437	0.644
<b>3.922</b>	2.748	1.989	1.393	0.715					
3.772	2.581	1.959	1.323	0.356					

Number of samples above threshold = 7

Number of samples above threshold = 17

False Alarm rate : 7 in 40

Miss rate : 13 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 3.8

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.8**

Probability of correct TARGET detection (sensitivity) = 0.56667

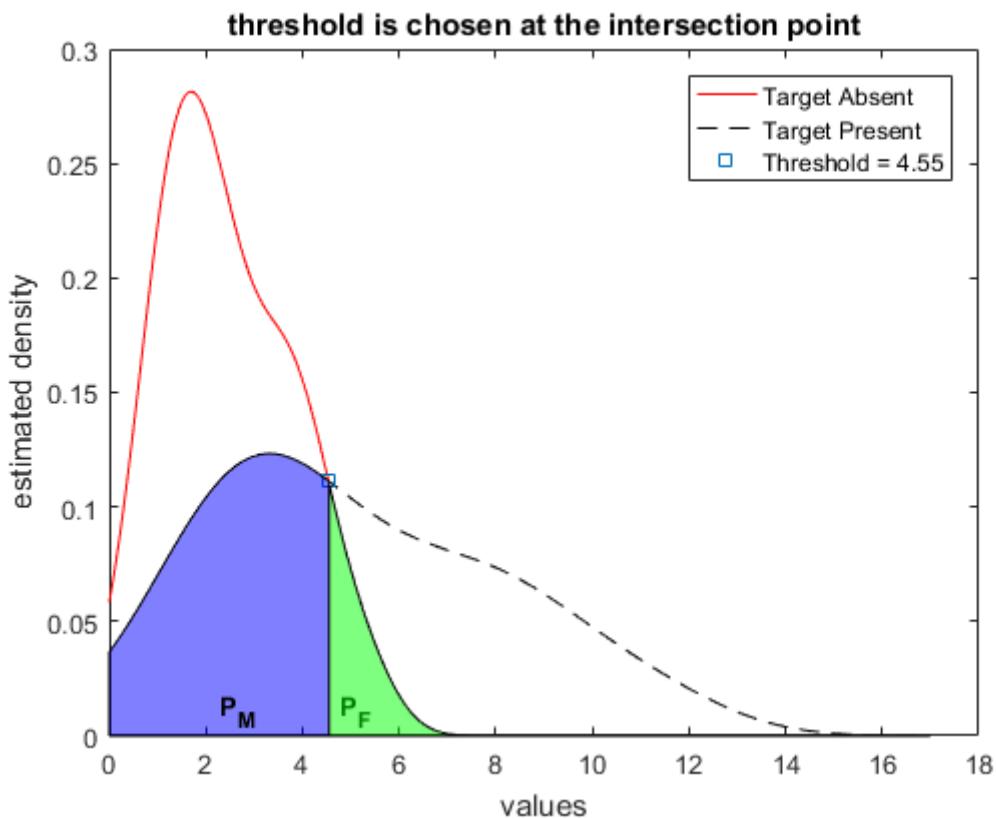
**Probability of Miss = 1 - sensitivity = 0.43333**

Probability of correct NO TARGET detection (specificity) = 0.825

**Probability of False Alarm = 1 - specificity = 0.175**

**Positive Predictive Value (PPV) = a posteriori probability = 0.70833**

Overall Accuracy = 0.71429



**Sorted and Partitioned Data : Threshold at 4.55**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.274	3.769	2.451	1.647	1.273	11.342	8.039	5.302	3.704	2.324
5.146	3.65	2.399	1.622	1.261	11.096	7.446	5.01	3.41	2.305
4.534	3.463	2.391	1.621	1.081	9.44	7.289	4.522	3.301	2.096
4.263	3.392	2.224	1.612	1.042	9.018	6.661	4.142	2.854	1.903
4.065	3.082	2.151	1.551	0.961	8.71	6.082	3.871	2.442	1.765
3.994	3.021	2.045	1.433	0.822	8.146	5.981	3.767	2.437	0.644
3.922	2.748	1.989	1.393	0.715					
3.772	2.581	1.959	1.323	0.356					

**Number of samples above threshold = 2**

False Alarm rate : 2 in 40

**Number of samples above threshold = 14**

Miss rate : 16 in 30

**(c) P. M. Shankar**

## Summary of the analysis

Peng

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.55**

Probability of correct TARGET detection (sensitivity) = 0.46667

**Probability of Miss = 1 - sensitivity = 0.53333**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.875**

Overall Accuracy = 0.74286

### Confusion Matrix (Threshold Value = 4.55)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	14	16	30
Total Counts	16	54	70

$$P_F = \frac{1}{20} \quad P_M = \frac{8}{15} \quad PPV = \frac{7}{8} \quad \text{err} = \frac{9}{35} \quad \text{acc} = \frac{26}{35}$$

## Summary of the analysis

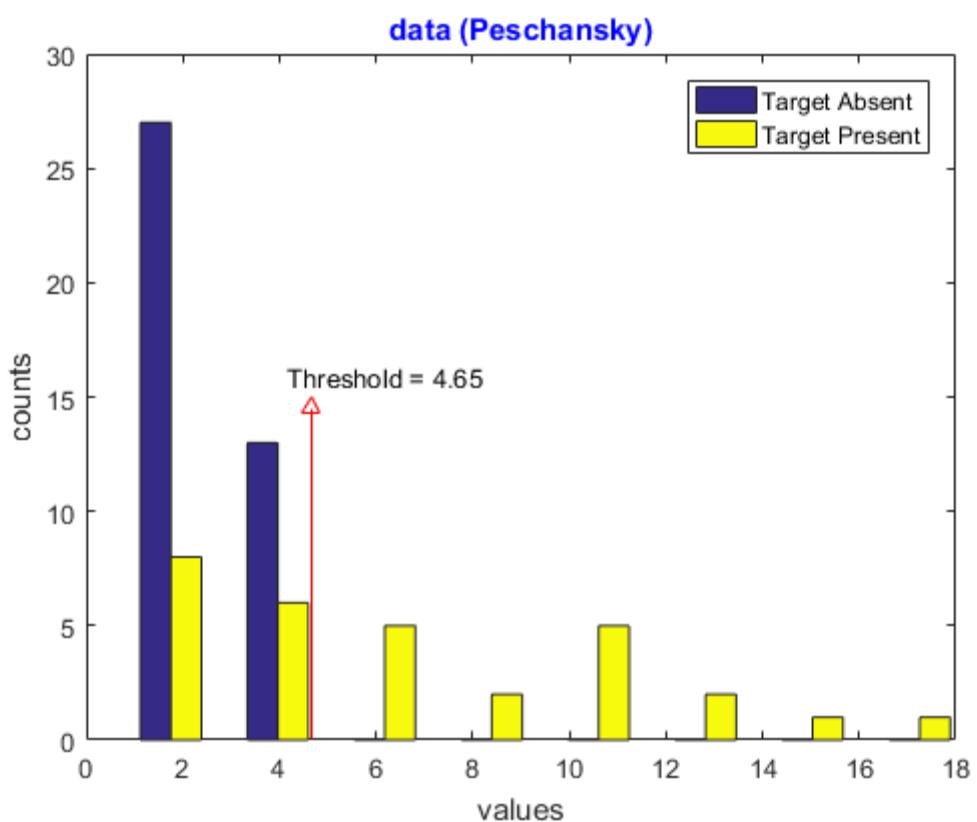
Peng

p m shankar

data (Peschansky)

Target Absent					Target Present				
4.278	2.11	2.412	0.983	2.662	2.546	1.998	8.222	2.114	6.747
2.39	0.646	2.724	3.256	1.647	9.701	11.798	3.642	11.831	10.2
1.992	1.383	0.841	4.416	2.374	4.351	7.9	2.612	3.651	3.367
2.764	1.73	3.065	1.144	1.207	2.109	1.77	4.117	10.857	1.333
4.076	1.778	2.849	1.697	4.356	10.389	9.862	5.167	2.093	5.466
3.949	1.631	1.4	4.301	4.288	5.652	18.358	5.377	15.167	4.058
1.063	2.575	2.562	1.354	0.666					
2.918	3.384	3.554	3.61	2.762					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.65

Target Absent					Target Present				
4.416	3.554	2.724	1.992	1.354	18.358	10.2	5.652	4.058	2.114
4.356	3.384	2.662	1.778	1.207	15.167	9.862	5.466	3.651	2.109
4.301	3.256	2.575	1.73	1.144	11.831	9.701	5.377	3.642	2.093
4.288	3.065	2.562	1.697	1.063	11.798	8.222	5.167	3.367	1.998
4.278	2.918	2.412	1.647	0.983	10.857	7.9	4.351	2.612	1.77
4.076	2.849	2.39	1.631	0.841	10.389	6.747	4.117	2.546	1.333
3.949	2.764	2.374	1.4	0.666					
3.61	2.762	2.11	1.383	0.646					

Number of samples above threshold = 0

Number of samples above threshold = 16

False Alarm rate : 0 in 40

Miss rate : 14 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.65

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.65**

Probability of correct TARGET detection (sensitivity) = 0.53333

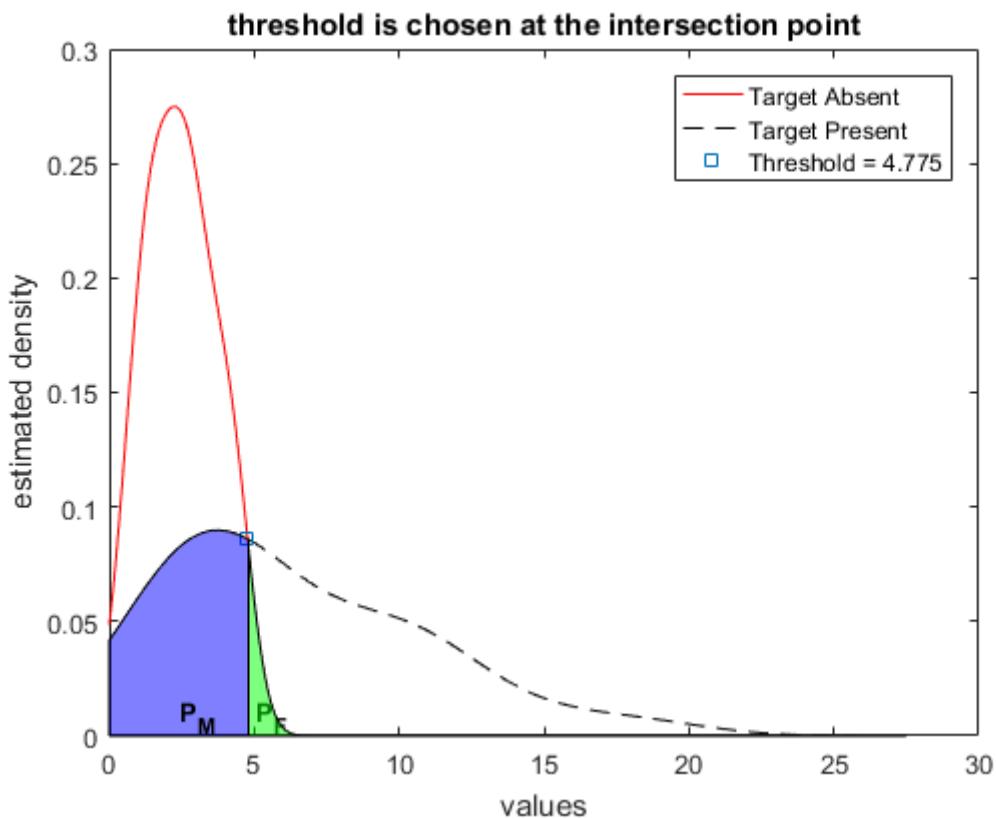
**Probability of Miss = 1 - sensitivity = 0.46667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 4.775**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.416	3.554	2.724	1.992	1.354	18.358	10.2	5.652	4.058	2.114
4.356	3.384	2.662	1.778	1.207	15.167	9.862	5.466	3.651	2.109
4.301	3.256	2.575	1.73	1.144	11.831	9.701	5.377	3.642	2.093
4.288	3.065	2.562	1.697	1.063	11.798	8.222	5.167	3.367	1.998
4.278	2.918	2.412	1.647	0.983	10.857	7.9	4.351	2.612	1.77
4.076	2.849	2.39	1.631	0.841	10.389	6.747	4.117	2.546	1.333
3.949	2.764	2.374	1.4	0.666					
3.61	2.762	2.11	1.383	0.646					

**Number of samples above threshold = 0**

**Number of samples above threshold = 16**

False Alarm rate : 0 in 40

Miss rate : 14 in 30

**(c) P. M. Shankar**

## Summary of the analysis Peschansky

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.775**

Probability of correct TARGET detection (sensitivity) = 0.53333

**Probability of Miss = 1 - sensitivity = 0.46667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.8

### Confusion Matrix (Threshold Value = 4.775)

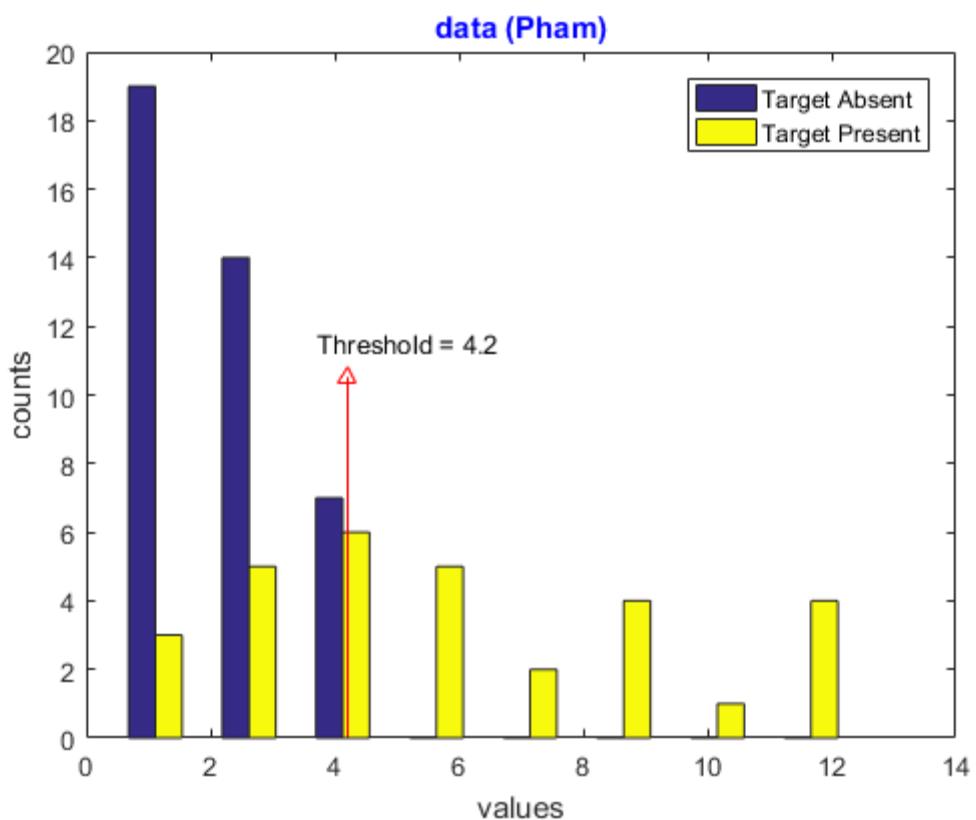
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	0	40	40
Target Present	16	14	30
Total Counts	16	54	70

$$P_F = 0 \quad P_M = \frac{7}{15} \quad PPV = 1 \quad \text{err} = \frac{1}{5} \quad \text{acc} = \frac{4}{5}$$

## Summary of the analysis Peschansky

data (Pham)									
Target Absent					Target Present				
1.934	0.568	0.48	1.277	0.843	4.999	1.953	4.653	11.264	4.139
1.303	1.441	1.06	1.541	1.034	2.817	7.183	2.893	4.538	4.684
3.954	4.748	1.579	0.785	3.209	3.157	1.637	5.084	5.012	12.425
2.235	1.675	3.881	3.568	2.64	2.276	8.529	4.357	4.451	5.373
2.452	2.599	2.194	4.59	1.779	12.18	10.065	11.923	1.653	8.1
1.716	3.455	0.589	2.934	2.664	7.277	5.416	0.564	8.968	8.398
3.001	2.418	1.999	0.36	2.518					
1.676	3.765	2.569	1.847	0.976					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.2

Target Absent					Target Present				
<b>4.748</b>	3.001	2.418	1.676	1.034	<b>12.425</b>	<b>8.529</b>	<b>5.373</b>	<b>4.538</b>	2.817
<b>4.59</b>	2.934	2.235	1.675	0.976	<b>12.18</b>	<b>8.398</b>	<b>5.084</b>	<b>4.451</b>	2.276
3.954	2.664	2.194	1.579	0.843	<b>11.923</b>	<b>8.1</b>	<b>5.012</b>	<b>4.357</b>	1.953
3.881	2.64	1.999	1.541	0.785	<b>11.264</b>	<b>7.277</b>	<b>4.999</b>	4.139	1.653
3.765	2.599	1.934	1.441	0.589	<b>10.065</b>	<b>7.183</b>	<b>4.684</b>	3.157	1.637
3.568	2.569	1.847	1.303	0.568	<b>8.968</b>	<b>5.416</b>	<b>4.653</b>	2.893	0.564
3.455	2.518	1.779	1.277	0.48					
3.209	2.452	1.716	1.06	0.36					

Number of samples above threshold = 2

Number of samples above threshold = 21

False Alarm rate : 2 in 40

Miss rate : 9 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.2

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.2**

Probability of correct TARGET detection (sensitivity) = 0.7

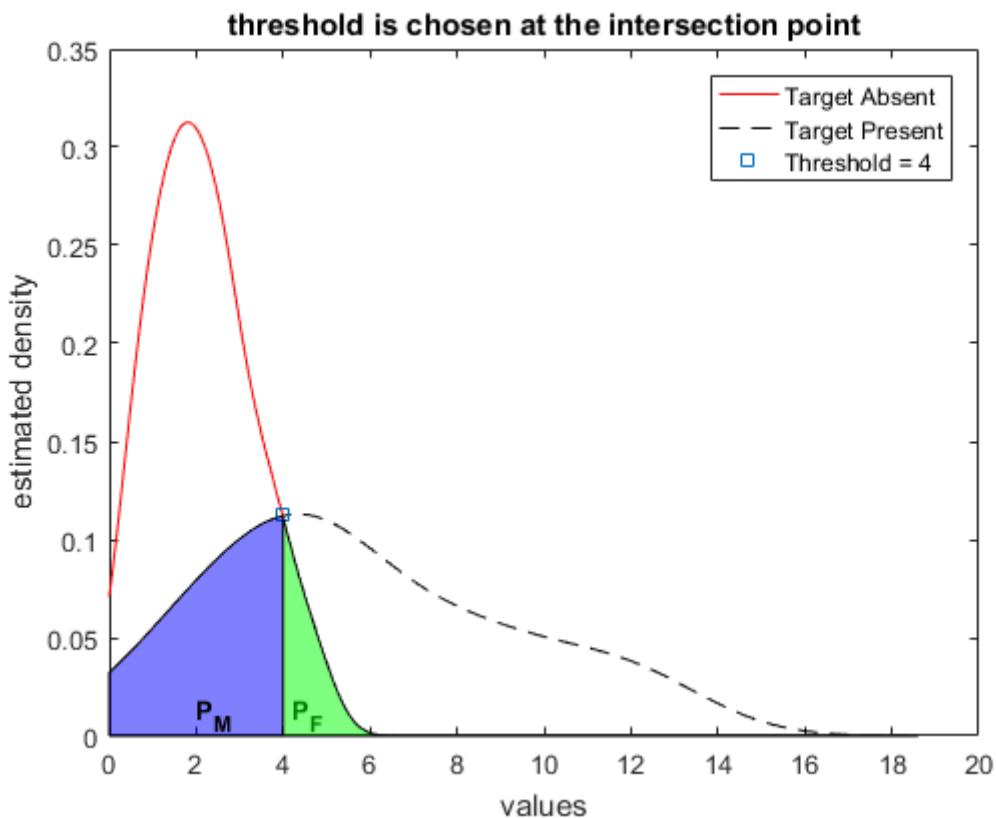
**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.91304**

Overall Accuracy = 0.84286



**Sorted and Partitioned Data : Threshold at 4**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.748	3.001	2.418	1.676	1.034	12.425	8.529	5.373	4.538	2.817
4.59	2.934	2.235	1.675	0.976	12.18	8.398	5.084	4.451	2.276
3.954	2.664	2.194	1.579	0.843	11.923	8.1	5.012	4.357	1.953
3.881	2.64	1.999	1.541	0.785	11.264	7.277	4.999	4.139	1.653
3.765	2.599	1.934	1.441	0.589	10.065	7.183	4.684	3.157	1.637
3.568	2.569	1.847	1.303	0.568	8.968	5.416	4.653	2.893	0.564
3.455	2.518	1.779	1.277	0.48					
3.209	2.452	1.716	1.06	0.36					

**Number of samples above threshold = 2**

False Alarm rate : 2 in 40

**Number of samples above threshold = 22**

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis Pham

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.91667**

Overall Accuracy = 0.85714

### Confusion Matrix (Threshold Value = 4)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	22	8	30
Total Counts	24	46	70

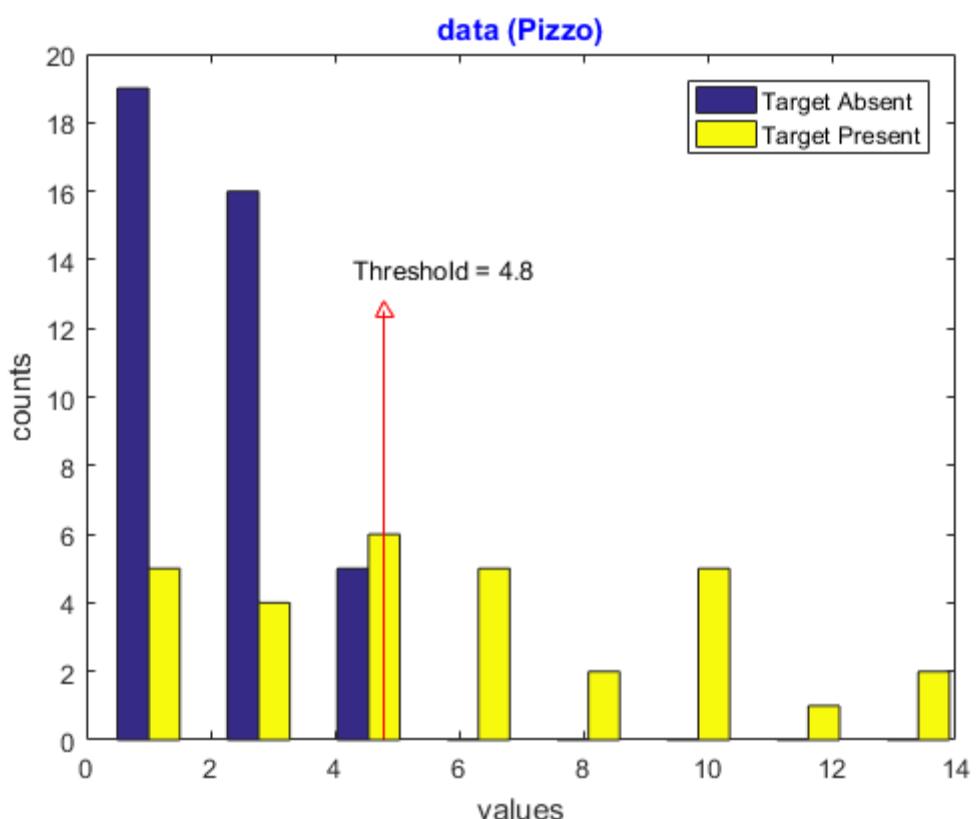
$$P_F = \frac{1}{20} \quad P_M = \frac{4}{15} \quad PPV = \frac{11}{12} \quad \text{err} = \frac{1}{7} \quad \text{acc} = \frac{6}{7}$$

## Summary of the analysis Pham

data (Pizzo)

Target Absent					Target Present				
1.605	0.317	2.403	2.581	1.154	1.864	3.086	0.621	6.923	2.349
2.859	3.583	2.444	3.357	0.431	11.453	4.029	9.643	3.203	6.475
3.569	4.923	1.425	3.805	5.351	10.217	8.482	4.666	10.465	7.584
2.642	0.761	1.706	2.491	0.924	5.525	9.444	4.887	7.102	4.182
4.222	0.512	2.35	2.063	2.204	14.28	1.496	1.981	5.305	4.307
0.422	2.898	0.119	2.351	1.434	1.19	9.974	13.543	5.736	1.171
0.216	0.534	0.316	1.788	3.779					
1.758	1.575	1.557	1.948	2.232					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.8

	Target Absent					Target Present				
<b>5.351</b>	2.898	2.35	1.605	0.534		<b>14.28</b>	<b>9.643</b>	<b>6.475</b>	4.307	1.981
<b>4.923</b>	2.859	2.232	1.575	0.512		<b>13.543</b>	<b>9.444</b>	<b>5.736</b>	4.182	1.864
4.222	2.642	2.204	1.557	0.431		<b>11.453</b>	<b>8.482</b>	<b>5.525</b>	4.029	1.496
3.805	2.581	2.063	1.434	0.422		<b>10.465</b>	<b>7.584</b>	<b>5.305</b>	3.203	1.19
3.779	2.491	1.948	1.425	0.317		<b>10.217</b>	<b>7.102</b>	<b>4.887</b>	3.086	1.171
3.583	2.444	1.788	1.154	0.316		<b>9.974</b>	<b>6.923</b>	4.666	2.349	0.621
3.569	2.403	1.758	0.924	0.216						
3.357	2.351	1.706	0.761	0.119						

**Number of samples above threshold = 2**

**Number of samples above threshold = 17**

False Alarm rate : 2 in 40

Miss rate : 13 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 4.8

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.8**

Probability of correct TARGET detection (sensitivity) = 0.56667

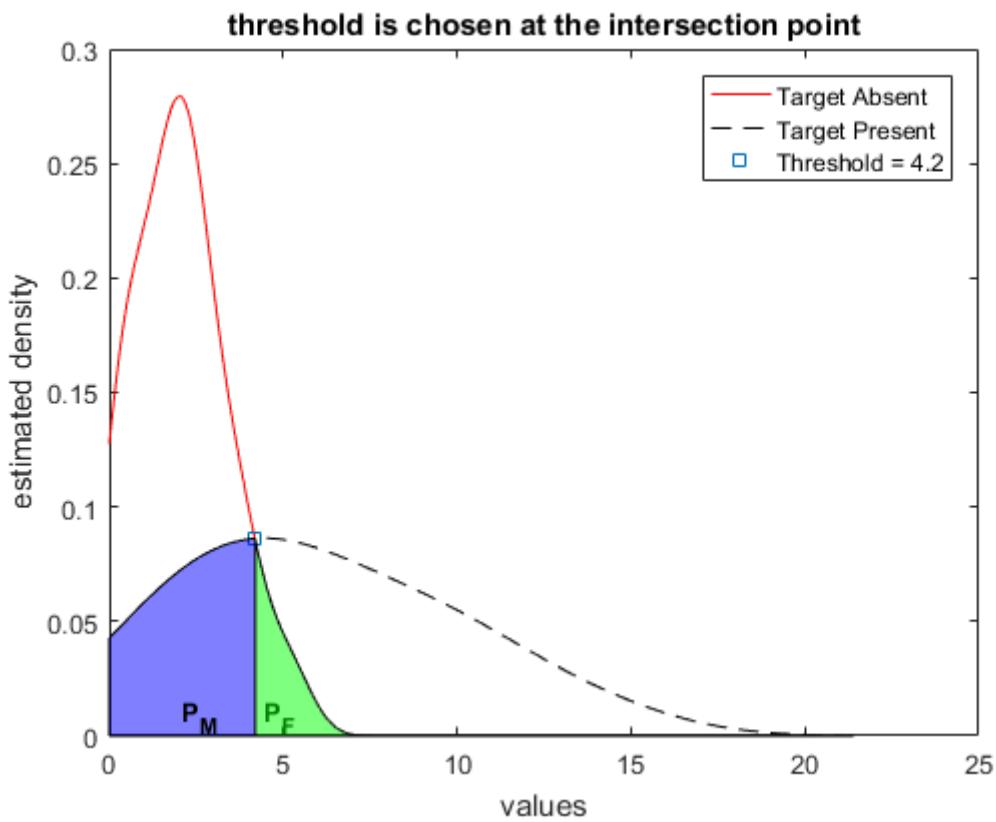
**Probability of Miss = 1 - sensitivity = 0.43333**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.89474**

Overall Accuracy = 0.78571



**Sorted and Partitioned Data : Threshold at 4.2**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.351	2.898	2.35	1.605	0.534	14.28	9.643	6.475	4.307	1.981
4.923	2.859	2.232	1.575	0.512	13.543	9.444	5.736	4.182	1.864
4.222	2.642	2.204	1.557	0.431	11.453	8.482	5.525	4.029	1.496
3.805	2.581	2.063	1.434	0.422	10.465	7.584	5.305	3.203	1.19
3.779	2.491	1.948	1.425	0.317	10.217	7.102	4.887	3.086	1.171
3.583	2.444	1.788	1.154	0.316	9.974	6.923	4.666	2.349	0.621
3.569	2.403	1.758	0.924	0.216					
3.357	2.351	1.706	0.761	0.119					

**Number of samples above threshold = 3**

False Alarm rate : 3 in 40

**Number of samples above threshold = 19**

Miss rate : 11 in 30

(c) P. M. Shankar

## Summary of the analysis Pizzo

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.2**

Probability of correct TARGET detection (sensitivity) = 0.63333

**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.86364**

Overall Accuracy = 0.8

### Confusion Matrix (Threshold Value = 4.2)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	19	11	30
Total Counts	22	48	70

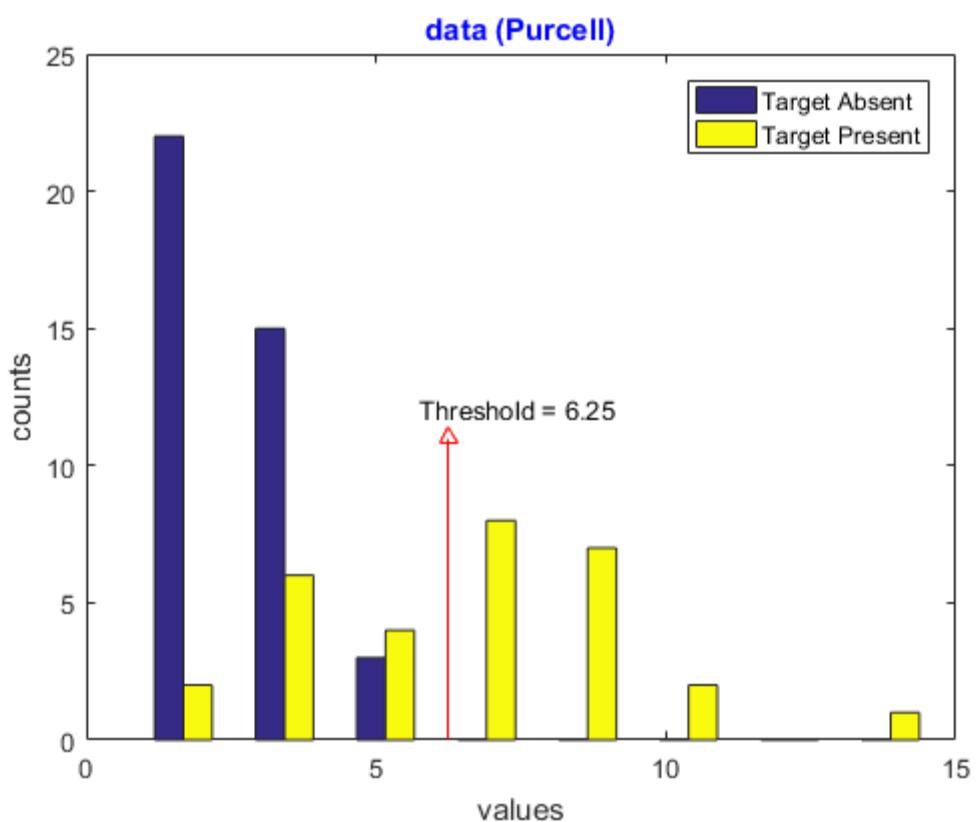
$$P_F = \frac{3}{40} \quad P_M = \frac{11}{30} \quad PPV = \frac{19}{22} \quad \text{err} = \frac{1}{5} \quad \text{acc} = \frac{4}{5}$$

## Summary of the analysis Pizzo

data (Purcell)

Target Absent					Target Present				
2.588	3.243	1.706	2.691	1.762	2.888	4.681	1.736	1.69	8.71
1.273	2.631	2.683	4.161	0.806	6.434	10.336	8.094	7.636	6.494
3.512	0.904	1.881	1.076	1.756	4.646	6.059	9.229	8.32	14.747
2.403	3.514	5.369	1.28	4.424	2.73	6.851	9.151	3.988	8.181
1.361	2.269	1.268	1.634	2.439	9.558	5.195	6.911	5.249	6.312
2.26	2.458	4.153	3.963	4.641	7.567	2.572	3.2	3.467	8.472
3.852	3.28	3.379	2.36	1.486					
3.862	1.951	4.205	0.83	1.388					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 6.25

Target Absent					Target Present				
5.369	3.852	2.631	1.951	1.361	<b>14.747</b>	<b>8.472</b>	<b>6.911</b>	5.249	3.2
4.641	3.514	2.588	1.881	1.28	<b>10.336</b>	<b>8.32</b>	<b>6.851</b>	5.195	2.888
4.424	3.512	2.458	1.762	1.273	<b>9.558</b>	<b>8.181</b>	<b>6.494</b>	4.681	2.73
4.205	3.379	2.439	1.756	1.268	<b>9.229</b>	<b>8.094</b>	<b>6.434</b>	4.646	2.572
4.161	3.28	2.403	1.706	1.076	<b>9.151</b>	<b>7.636</b>	<b>6.312</b>	3.988	1.736
4.153	3.243	2.36	1.634	0.904	<b>8.71</b>	<b>7.567</b>	6.059	3.467	1.69
3.963	2.691	2.269	1.486	0.83					
3.862	2.683	2.26	1.388	0.806					

Number of samples above threshold = 0

Number of samples above threshold = 17

False Alarm rate : 0 in 40

Miss rate : 13 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 6.25

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6.25**

Probability of correct TARGET detection (sensitivity) = 0.56667

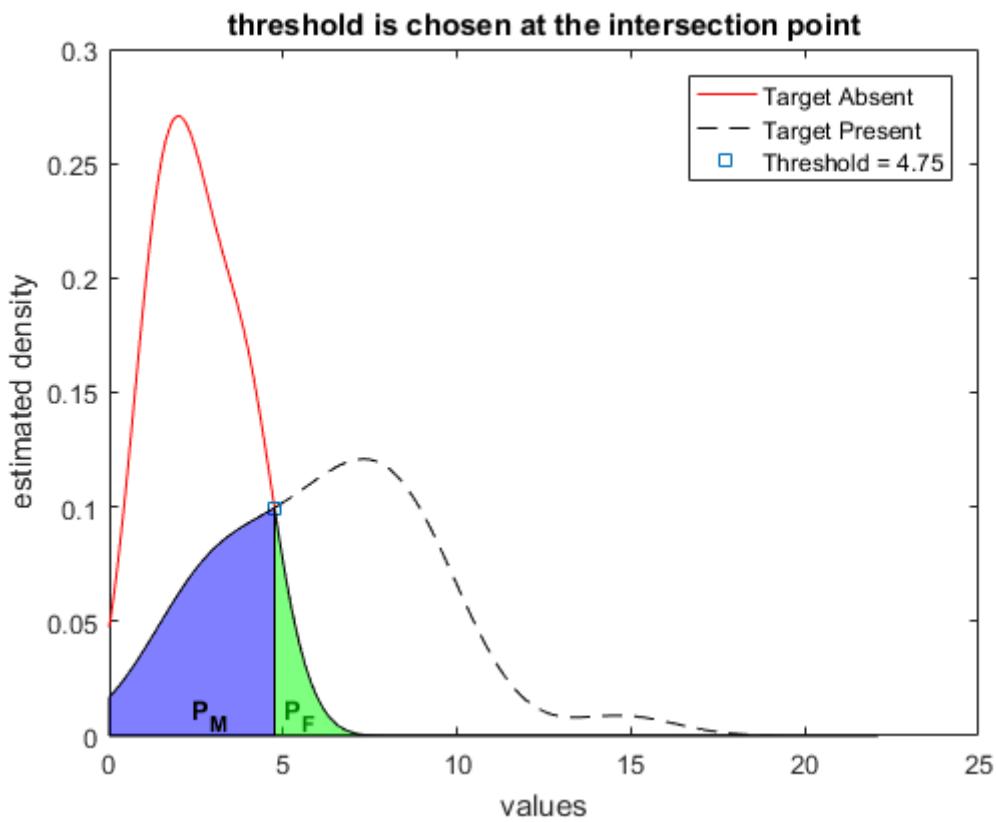
**Probability of Miss = 1 - sensitivity = 0.43333**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.81429



**Sorted and Partitioned Data : Threshold at 4.75**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.369	3.852	2.631	1.951	1.361	14.747	8.472	6.911	5.249	3.2
4.641	3.514	2.588	1.881	1.28	10.336	8.32	6.851	5.195	2.888
4.424	3.512	2.458	1.762	1.273	9.558	8.181	6.494	4.681	2.73
4.205	3.379	2.439	1.756	1.268	9.229	8.094	6.434	4.646	2.572
4.161	3.28	2.403	1.706	1.076	9.151	7.636	6.312	3.988	1.736
4.153	3.243	2.36	1.634	0.904	8.71	7.567	6.059	3.467	1.69
3.963	2.691	2.269	1.486	0.83					
3.862	2.683	2.26	1.388	0.806					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 20**

Miss rate : 10 in 30

(c) P. M. Shankar

## Summary of the analysis Purcell

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.75**

Probability of correct TARGET detection (sensitivity) = 0.66667

**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95238**

Overall Accuracy = 0.84286

### Confusion Matrix (Threshold Value = 4.75)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	20	10	30
Total Counts	21	49	70

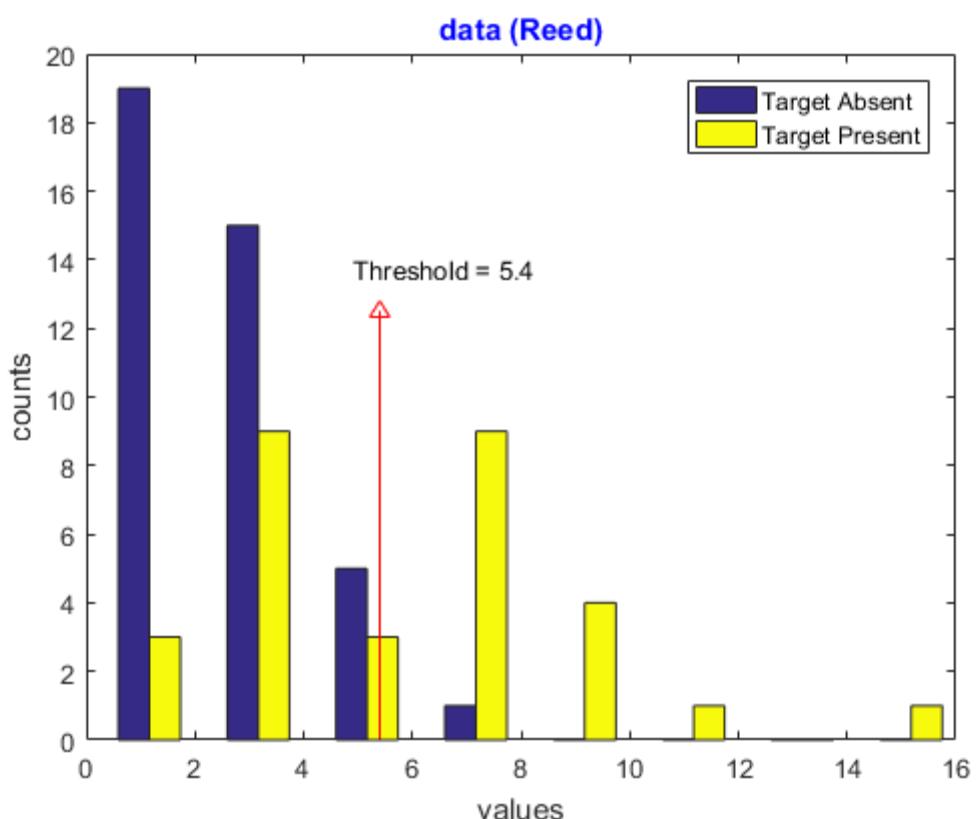
$$P_F = \frac{1}{40} \quad P_M = \frac{1}{3} \quad \text{PPV} = \frac{20}{21} \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

## Summary of the analysis Purcell

data (Reed)

Target Absent					Target Present				
2.534	2.804	2.885	0.733	0.244	6.292	10.782	5.627	3.343	6.699
2.044	4.953	3.975	0.161	2.152	5.167	2.749	8.045	0.552	8.112
0.5	6.227	2.838	0.496	1.268	6.076	3.425	6.902	16.181	2.123
2.397	1.162	2.235	0.618	2.946	3.804	3.969	2.962	7.133	8.47
0.749	2.88	3.56	1.218	4.388	3.039	6.552	7.313	7.274	3.679
5.8	4.106	1.808	5.37	4.471	1.429	8.465	9.141	8.229	2.539
2.108	3.034	0.551	2.599	2.002					
2.67	0.922	2.69	0.819	1.509					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.4

Target Absent					Target Present				
<b>6.227</b>	3.56	2.67	2.002	0.749	<b>16.181</b>	<b>8.112</b>	<b>6.699</b>	3.969	2.962
<b>5.8</b>	3.034	2.599	1.808	0.733	<b>10.782</b>	<b>8.045</b>	<b>6.552</b>	3.804	2.749
5.37	2.946	2.534	1.509	0.618	<b>9.141</b>	<b>7.313</b>	<b>6.292</b>	3.679	2.539
4.953	2.885	2.397	1.268	0.551	<b>8.47</b>	<b>7.274</b>	<b>6.076</b>	3.425	2.123
4.471	2.88	2.235	1.218	0.5	<b>8.465</b>	<b>7.133</b>	<b>5.627</b>	3.343	1.429
4.388	2.838	2.152	1.162	0.496	<b>8.229</b>	<b>6.902</b>	5.167	3.039	0.552
4.106	2.804	2.108	0.922	0.244					
3.975	2.69	2.044	0.819	0.161					

**Number of samples above threshold = 2**

**Number of samples above threshold = 17**

False Alarm rate : 2 in 40

Miss rate : 13 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 5.4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.4**

Probability of correct TARGET detection (sensitivity) = 0.56667

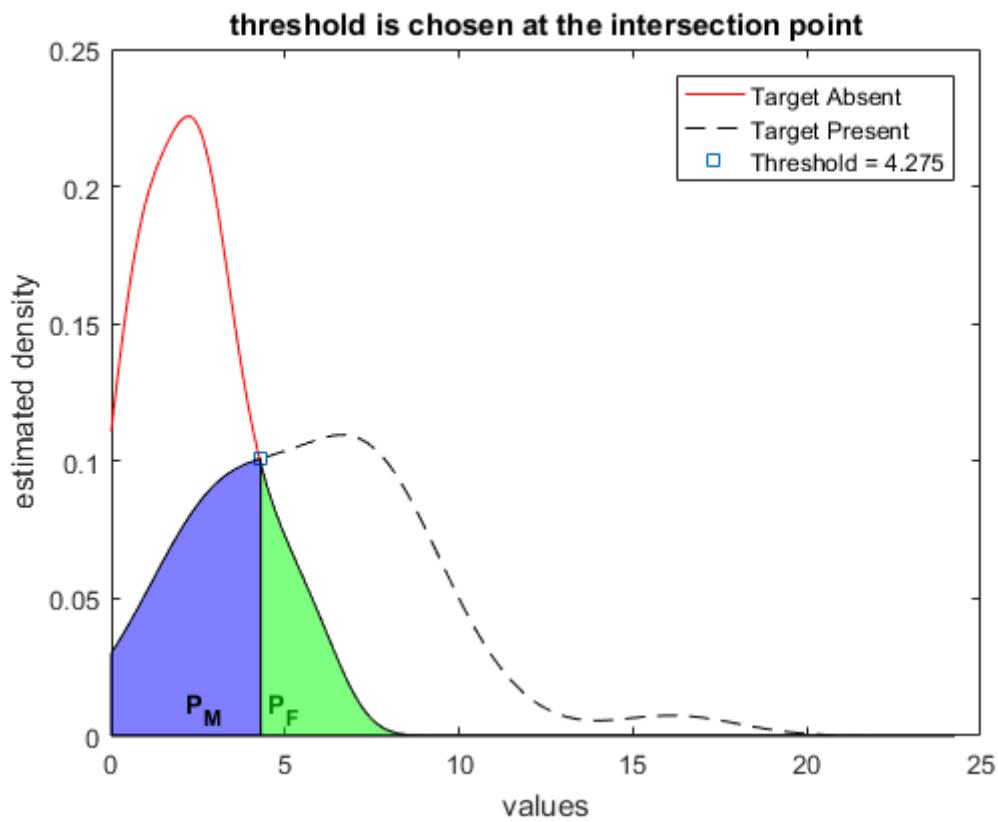
**Probability of Miss = 1 - sensitivity = 0.43333**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.89474**

Overall Accuracy = 0.78571



**Sorted and Partitioned Data : Threshold at 4.275**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>6.227</b>	3.56	2.67	2.002	0.749	<b>16.181</b>	<b>8.112</b>	<b>6.699</b>	3.969	2.962
<b>5.8</b>	3.034	2.599	1.808	0.733	<b>10.782</b>	<b>8.045</b>	<b>6.552</b>	3.804	2.749
<b>5.37</b>	2.946	2.534	1.509	0.618	<b>9.141</b>	<b>7.313</b>	<b>6.292</b>	3.679	2.539
<b>4.953</b>	2.885	2.397	1.268	0.551	<b>8.47</b>	<b>7.274</b>	<b>6.076</b>	3.425	2.123
<b>4.471</b>	2.88	2.235	1.218	0.5	<b>8.465</b>	<b>7.133</b>	<b>5.627</b>	3.343	1.429
<b>4.388</b>	2.838	2.152	1.162	0.496	<b>8.229</b>	<b>6.902</b>	<b>5.167</b>	3.039	0.552
4.106	2.804	2.108	0.922	0.244					
3.975	2.69	2.044	0.819	0.161					

Number of samples above threshold = 6

Number of samples above threshold = 18

False Alarm rate : 6 in 40

Miss rate : 12 in 30

(c) P. M. Shankar

## Summary of the analysis Reed

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.275**

Probability of correct TARGET detection (sensitivity) = 0.6

**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 0.85

**Probability of False Alarm = 1 - specificity = 0.15**

**Positive Predictive Value (PPV) = a posteriori probability = 0.75**

Overall Accuracy = 0.74286

### Confusion Matrix (Threshold Value = 4.275)

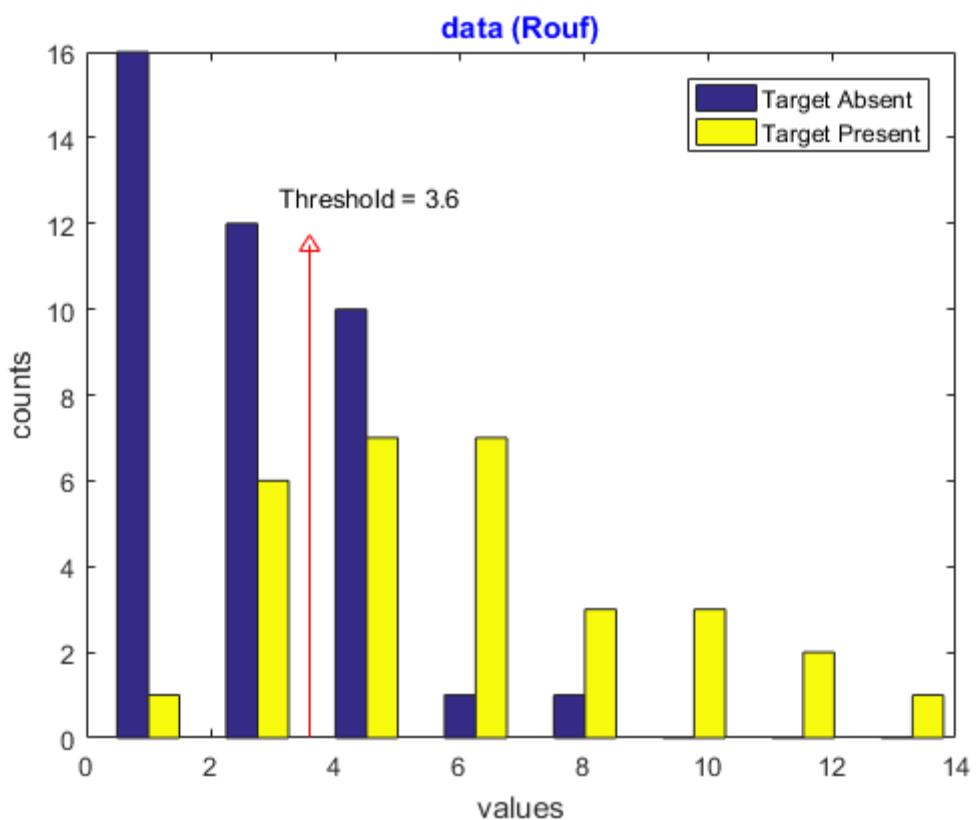
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	6	34	40
Target Present	18	12	30
Total Counts	24	46	70

$$P_F = \frac{3}{20} \quad P_M = \frac{2}{5} \quad PPV = \frac{3}{4} \quad \text{err} = \frac{9}{35} \quad \text{acc} = \frac{26}{35}$$

## Summary of the analysis Reed

data (Rouf)									
Target Absent					Target Present				
1.93	0.12	4.31	4.819	2.662	8.247	4.686	1.923	11.923	10.172
4.872	3.934	1.217	1.819	1.643	4.735	7.855	4.315	5.474	6.467
3.643	3.742	3.798	0.394	3.981	2.266	4.557	1.079	6.416	2.508
3.717	0.275	2.067	1.821	1.263	3.001	6.27	5.503	9.111	8.734
2.196	1.349	2.36	2.645	0.334	14.18	10.886	2.092	6.301	10.251
1.276	2.678	1.619	0.806	2.05	4.323	6.228	3.059	4.316	4.381
2.294	1.711	2.23	4.904	2.44					
5.536	2.581	7.295	1.079	1.075					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 3.6

Target Absent					Target Present				
7.295	3.798	2.44	1.821	1.217	14.18	8.734	6.27	4.557	3.001
5.536	3.742	2.36	1.819	1.079	11.923	8.247	6.228	4.381	2.508
4.904	3.717	2.294	1.711	1.075	10.886	7.855	5.503	4.323	2.266
4.872	3.643	2.23	1.643	0.806	10.251	6.467	5.474	4.316	2.092
4.819	2.678	2.196	1.619	0.394	10.172	6.416	4.735	4.315	1.923
4.31	2.662	2.067	1.349	0.334	9.111	6.301	4.686	3.059	1.079
3.981	2.645	2.05	1.276	0.275					
3.934	2.581	1.93	1.263	0.12					

**Number of samples above threshold = 12      Number of samples above threshold = 23**

False Alarm rate : 12 in 40

Miss rate : 7 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 3.6

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.6**

Probability of correct TARGET detection (sensitivity) = 0.76667

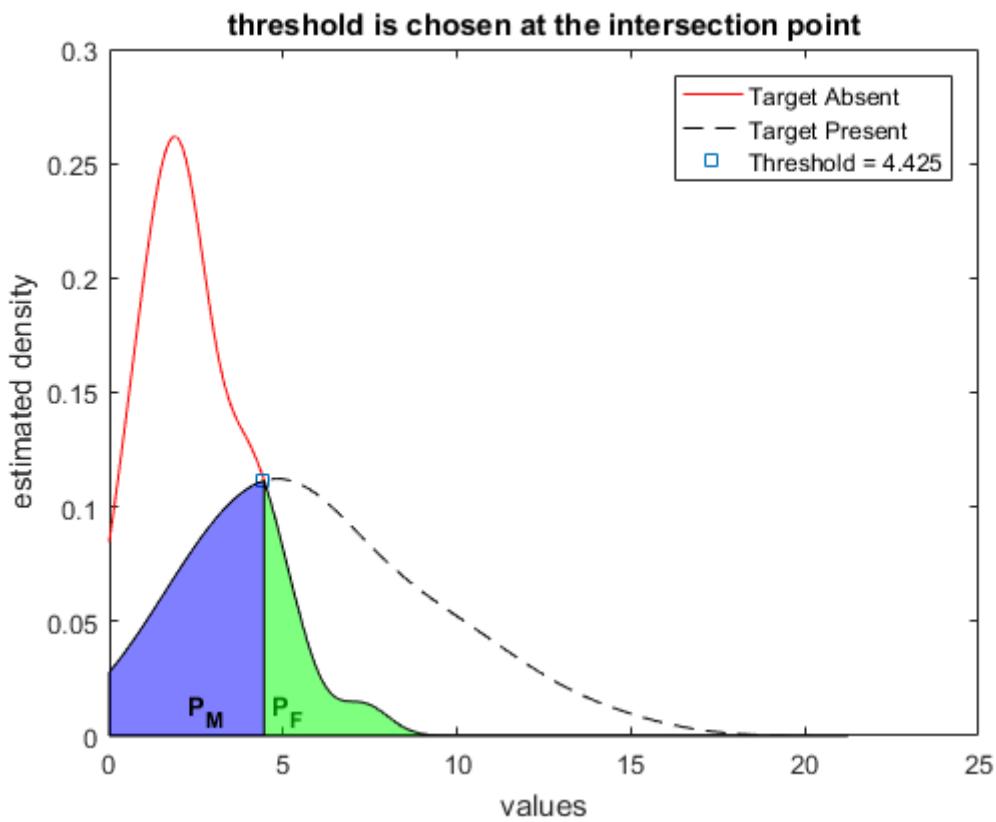
**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.7

**Probability of False Alarm = 1 - specificity = 0.3**

**Positive Predictive Value (PPV) = a posteriori probability = 0.65714**

Overall Accuracy = 0.72857



**Sorted and Partitioned Data : Threshold at 4.425**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
7.295	3.798	2.44	1.821	1.217	14.18	8.734	6.27	4.557	3.001
5.536	3.742	2.36	1.819	1.079	11.923	8.247	6.228	4.381	2.508
4.904	3.717	2.294	1.711	1.075	10.886	7.855	5.503	4.323	2.266
4.872	3.643	2.23	1.643	0.806	10.251	6.467	5.474	4.316	2.092
4.819	2.678	2.196	1.619	0.394	10.172	6.416	4.735	4.315	1.923
4.31	2.662	2.067	1.349	0.334	9.111	6.301	4.686	3.059	1.079
3.981	2.645	2.05	1.276	0.275					
3.934	2.581	1.93	1.263	0.12					

**Number of samples above threshold = 5**

False Alarm rate : 5 in 40

**Number of samples above threshold = 19**

Miss rate : 11 in 30

(c) P. M. Shankar

## Summary of the analysis Rouf

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.425**

Probability of correct TARGET detection (sensitivity) = 0.63333

**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.875

**Probability of False Alarm = 1 - specificity = 0.125**

**Positive Predictive Value (PPV) = a posteriori probability = 0.79167**

Overall Accuracy = 0.77143

### Confusion Matrix (Threshold Value = 4.425)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	5	35	40
Target Present	19	11	30
Total Counts	24	46	70

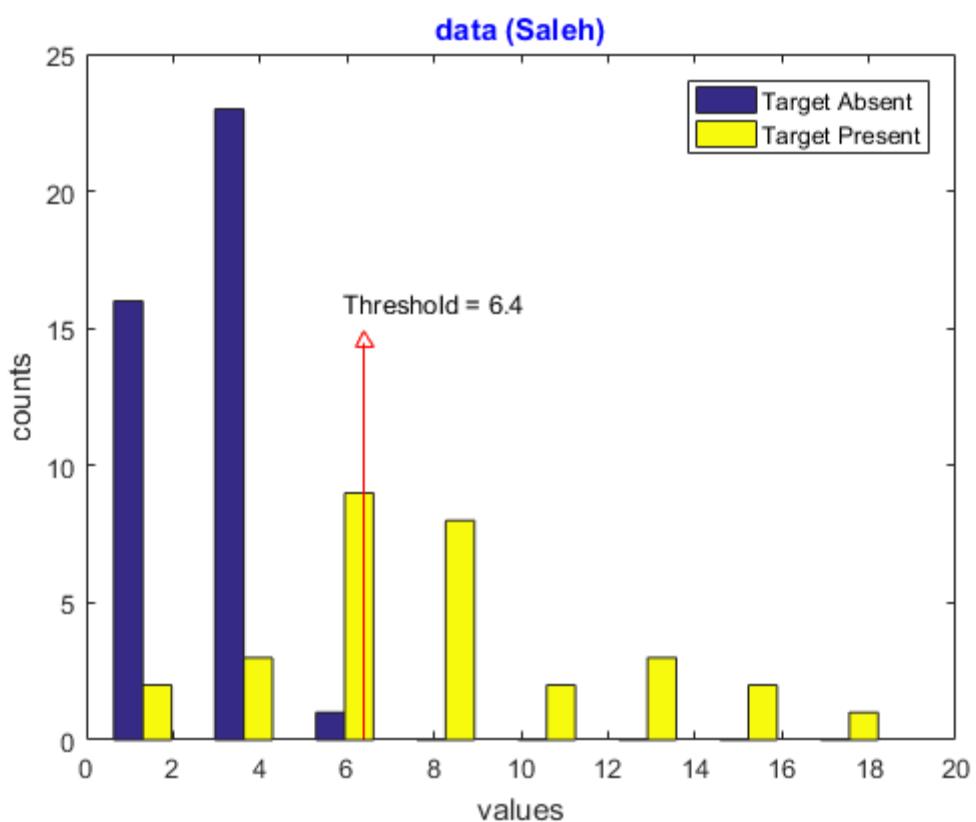
$$P_F = \frac{1}{8} \quad P_M = \frac{11}{30} \quad PPV = \frac{19}{24} \quad \text{err} = \frac{8}{35} \quad \text{acc} = \frac{27}{35}$$

## Summary of the analysis Rouf

data (Saleh)

Target Absent					Target Present				
0.864	2.511	5.115	3.349	1.643	2.079	5.835	8.848	6.52	8.331
2.454	3.192	2.653	1.114	3.663	5.552	18.714	12.076	11.909	7.74
1.696	2.563	2.432	3.835	2.441	6.55	5.278	5.761	2.721	7.97
2.78	2.808	1.953	2.57	3.011	4.795	11.058	0.708	15.359	7.705
2.571	3.408	2.013	3.572	1.853	7.116	15.706	5.79	3.304	9.13
3.033	2.545	3.829	1.854	3.659	11.125	8.559	6.652	2.782	13.327
0.139	4.225	2.555	2.796	0.932					
3.588	1.158	3.621	0.997	2.373					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 6.4

Target Absent					Target Present				
5.115	3.572	2.78	2.454	1.696	18.714	11.125	7.97	6.52	4.795
4.225	3.408	2.653	2.441	1.643	15.706	11.058	7.74	5.835	3.304
3.835	3.349	2.571	2.432	1.158	15.359	9.13	7.705	5.79	2.782
3.829	3.192	2.57	2.373	1.114	13.327	8.848	7.116	5.761	2.721
3.663	3.033	2.563	2.013	0.997	12.076	8.559	6.652	5.552	2.079
3.659	3.011	2.555	1.953	0.932	11.909	8.331	6.55	5.278	0.708
3.621	2.808	2.545	1.854	0.864					
3.588	2.796	2.511	1.853	0.139					

Number of samples above threshold = 0

Number of samples above threshold = 19

False Alarm rate : 0 in 40

Miss rate : 11 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 6.4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6.4**

Probability of correct TARGET detection (sensitivity) = 0.63333

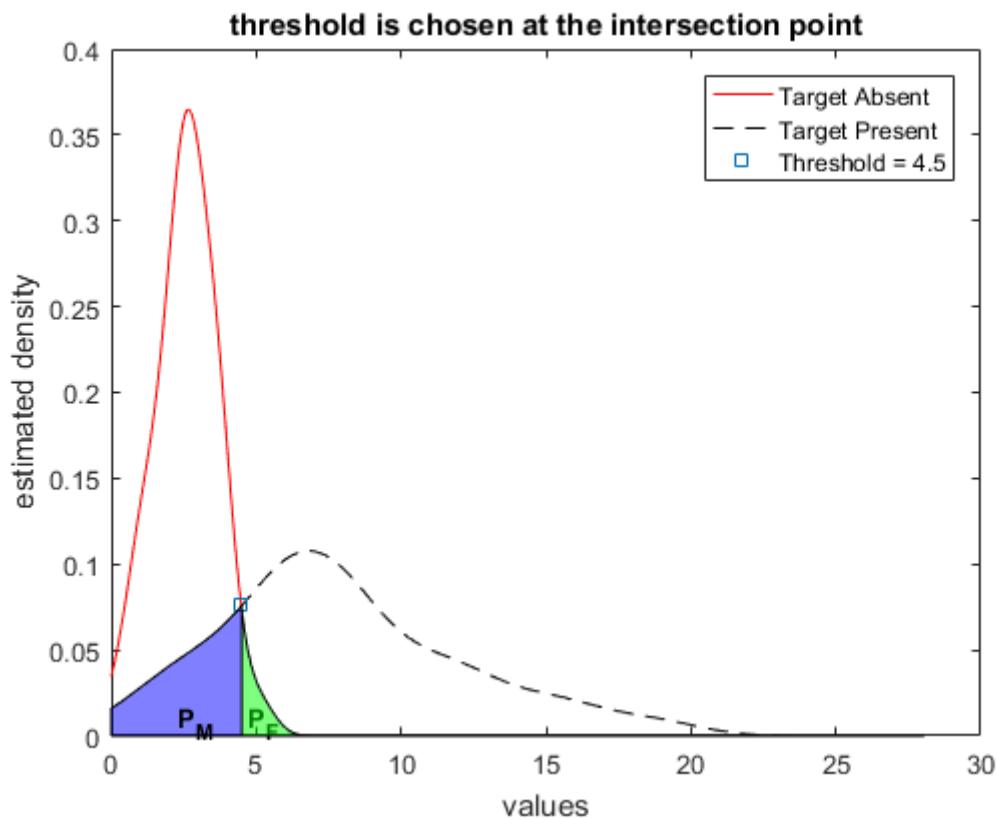
**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.84286



**Sorted and Partitioned Data : Threshold at 4.5  
Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.115	3.572	2.78	2.454	1.696	18.714	11.125	7.97	6.52	4.795
4.225	3.408	2.653	2.441	1.643	15.706	11.058	7.74	5.835	3.304
3.835	3.349	2.571	2.432	1.158	15.359	9.13	7.705	5.79	2.782
3.829	3.192	2.57	2.373	1.114	13.327	8.848	7.116	5.761	2.721
3.663	3.033	2.563	2.013	0.997	12.076	8.559	6.652	5.552	2.079
3.659	3.011	2.555	1.953	0.932	11.909	8.331	6.55	5.278	0.708
3.621	2.808	2.545	1.854	0.864					
3.588	2.796	2.511	1.853	0.139					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 25**

Miss rate : 5 in 30

(c) P. M. Shankar

## Summary of the analysis Saleh

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.5**

Probability of correct TARGET detection (sensitivity) = 0.83333

**Probability of Miss = 1 - sensitivity = 0.16667**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.96154**

Overall Accuracy = 0.91429

### Confusion Matrix (Threshold Value = 4.5)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	25	5	30
Total Counts	26	44	70

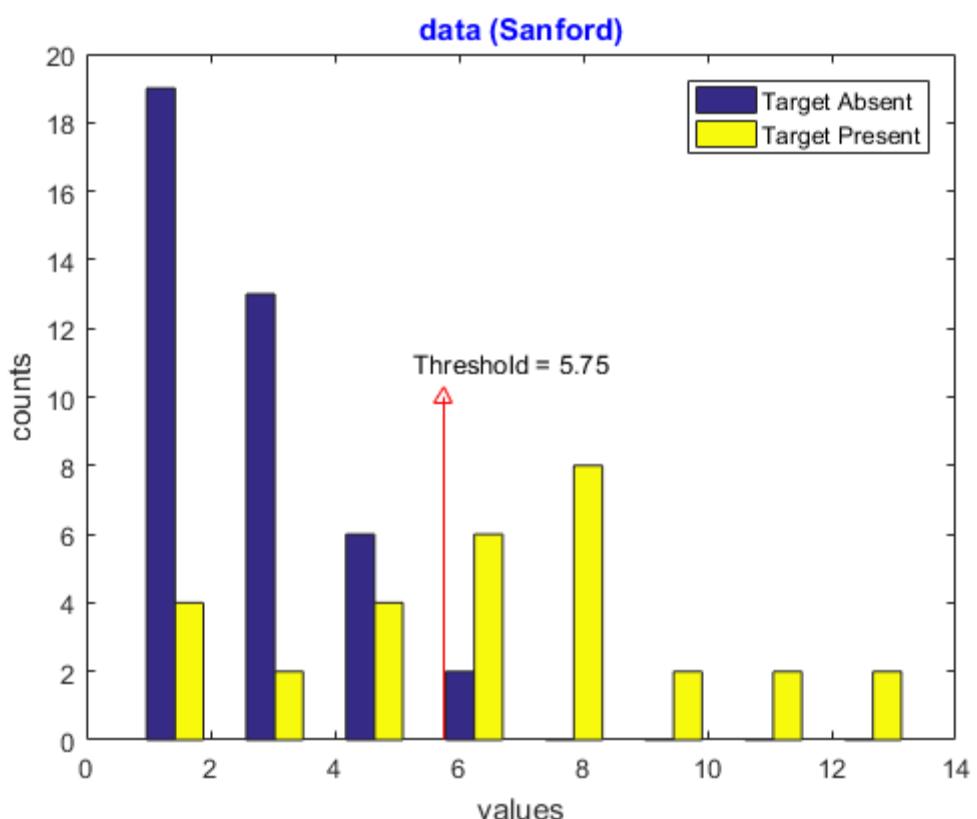
$$P_F = \frac{1}{40} \quad P_M = \frac{1}{6} \quad PPV = \frac{25}{26} \quad \text{err} = \frac{3}{35} \quad \text{acc} = \frac{32}{35}$$

## Summary of the analysis Saleh

data (Sanford)

Target Absent					Target Present				
1.029	2.033	4.814	2.348	2.747	3.561	9.758	1.476	2.133	6.962
2.341	1.881	0.738	2.309	2.929	5.127	5.804	7.299	9.947	6.324
0.883	1.901	3.843	2.618	1.526	1.043	8.612	7.549	6.45	6.692
1.917	1.77	1.421	5.64	2.826	5.086	10.285	4.269	2.425	7.468
2.263	2.96	3.522	1.569	3.1	13.469	8.25	7.848	7.616	7.682
1.301	2.676	1.276	3.912	0.627	10.269	4.453	6.763	12.85	1.858
4.258	1.171	2.932	1.382	3.953					
4.036	1.807	1.58	5.656	1.781					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.75

Target Absent					Target Present				
5.656	3.522	2.618	1.881	1.382	<b>13.469</b>	<b>8.612</b>	<b>7.468</b>	<b>6.324</b>	3.561
5.64	3.1	2.348	1.807	1.301	<b>12.85</b>	<b>8.25</b>	<b>7.299</b>	<b>5.804</b>	2.425
4.814	2.96	2.341	1.781	1.276	<b>10.285</b>	<b>7.848</b>	<b>6.962</b>	5.127	2.133
4.258	2.932	2.309	1.77	1.171	<b>10.269</b>	<b>7.682</b>	<b>6.763</b>	5.086	1.858
4.036	2.929	2.263	1.58	1.029	<b>9.947</b>	<b>7.616</b>	<b>6.692</b>	4.453	1.476
3.953	2.826	2.033	1.569	0.883	<b>9.758</b>	<b>7.549</b>	<b>6.45</b>	4.269	1.043
3.912	2.747	1.917	1.526	0.738					
3.843	2.676	1.901	1.421	0.627					

Number of samples above threshold = 0

Number of samples above threshold = 20

False Alarm rate : 0 in 40

Miss rate : 10 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.75

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.75**

Probability of correct TARGET detection (sensitivity) = 0.66667

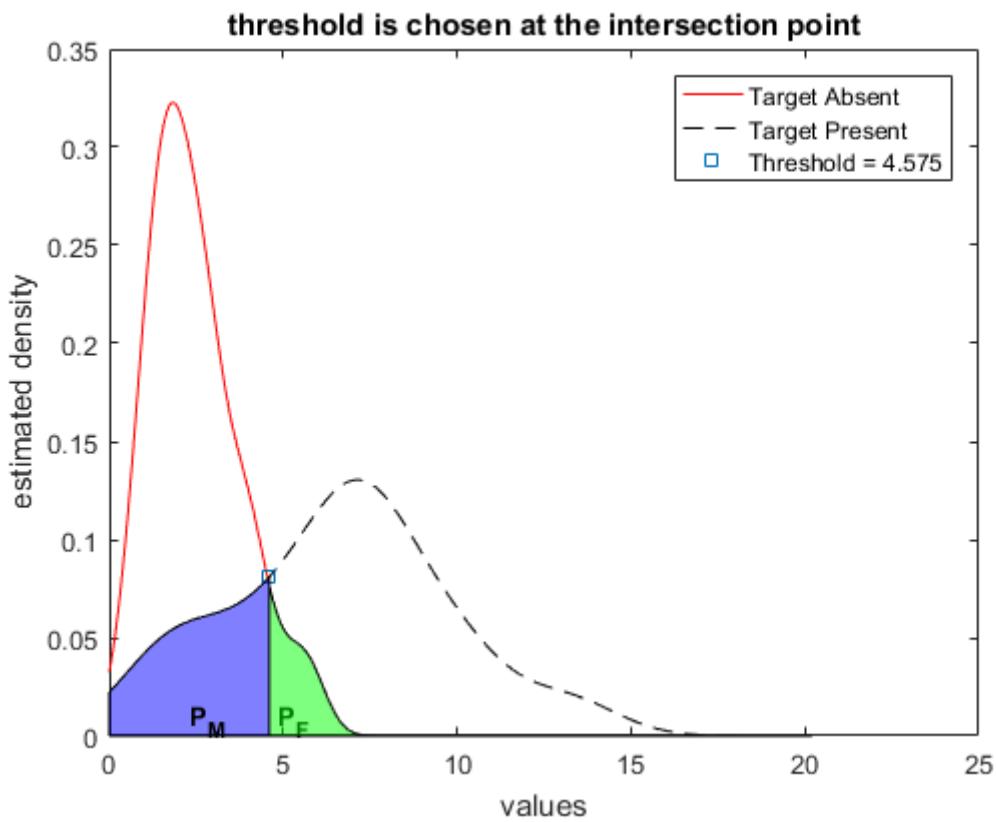
**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.85714



**Sorted and Partitioned Data : Threshold at 4.575**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.656	3.522	2.618	1.881	1.382	13.469	8.612	7.468	6.324	3.561
5.64	3.1	2.348	1.807	1.301	12.85	8.25	7.299	5.804	2.425
4.814	2.96	2.341	1.781	1.276	10.285	7.848	6.962	5.127	2.133
4.258	2.932	2.309	1.77	1.171	10.269	7.682	6.763	5.086	1.858
4.036	2.929	2.263	1.58	1.029	9.947	7.616	6.692	4.453	1.476
3.953	2.826	2.033	1.569	0.883	9.758	7.549	6.45	4.269	1.043
3.912	2.747	1.917	1.526	0.738					
3.843	2.676	1.901	1.421	0.627					

**Number of samples above threshold = 3**

False Alarm rate : 3 in 40

**Number of samples above threshold = 22**

Miss rate : 8 in 30

**(c) P. M. Shankar**

## Summary of the analysis Sanford

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.575**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.88**

Overall Accuracy = 0.84286

### Confusion Matrix (Threshold Value = 4.575)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	22	8	30
Total Counts	25	45	70

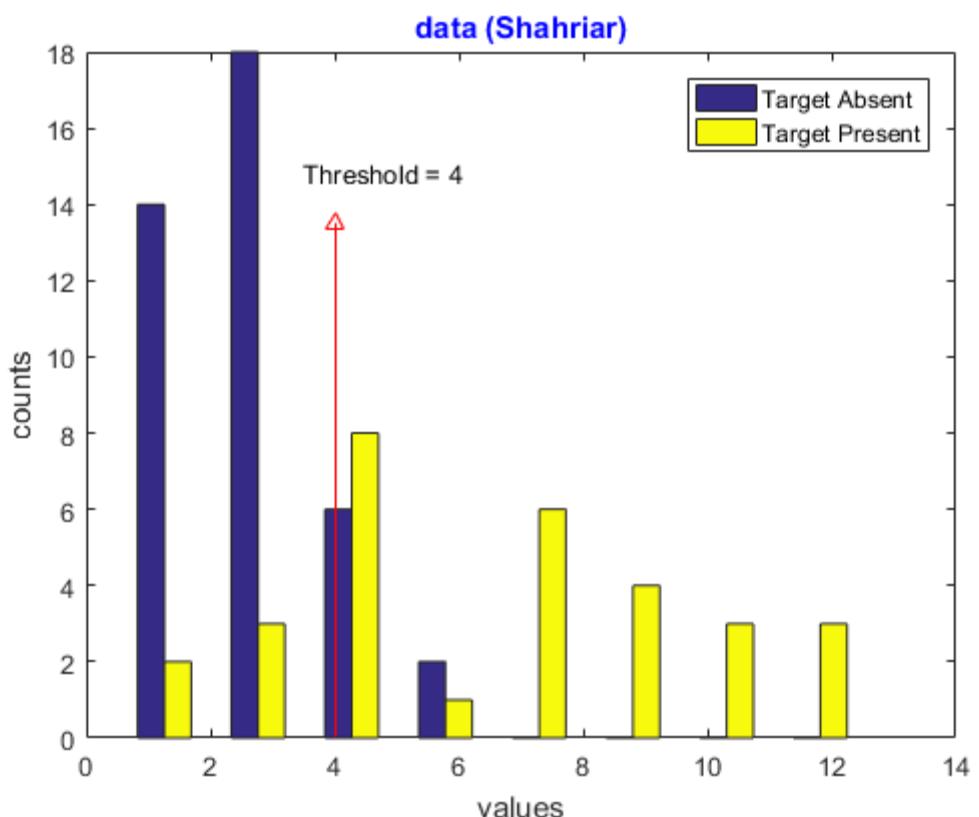
$$P_F = \frac{3}{40} \quad P_M = \frac{4}{15} \quad PPV = \frac{22}{25} \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

## Summary of the analysis Sanford

data (Shahriar)

Target Absent					Target Present				
0.504	2.243	3.432	2.29	2.752	12.573	9.655	5.804	9.327	2.809
2.604	1.418	2.655	4.693	1.44	11.701	3.09	8.418	11.213	6.982
2.659	1.158	4.22	1.158	2.571	7.979	7.499	8.912	4.481	4.379
2.816	1.248	1.51	1.099	2.124	4.795	10.114	2.719	6.609	8.045
5.229	3.743	3.69	1.542	2.687	4.09	8.45	10.948	4.438	4.485
2.682	3.261	2.71	1.542	1.953	1.922	8.007	4.754	4.062	1.426
3.094	1.573	2.46	4.037	3.293					
1.839	2.663	3.73	1.021	5.947					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4

Target Absent					Target Present				
<b>5.947</b>	3.432	2.682	2.243	1.44	<b>12.573</b>	<b>9.327</b>	<b>7.979</b>	<b>4.754</b>	<b>4.062</b>
<b>5.229</b>	3.293	2.663	2.124	1.418	<b>11.701</b>	<b>8.912</b>	<b>7.499</b>	<b>4.485</b>	3.09
<b>4.693</b>	3.261	2.659	1.953	1.248	<b>11.213</b>	<b>8.45</b>	<b>6.982</b>	<b>4.481</b>	2.809
<b>4.22</b>	3.094	2.655	1.839	1.158	<b>10.948</b>	<b>8.418</b>	<b>6.609</b>	<b>4.438</b>	2.719
<b>4.037</b>	2.816	2.604	1.573	1.158	<b>10.114</b>	<b>8.045</b>	<b>5.804</b>	<b>4.379</b>	1.922
3.743	2.752	2.571	1.542	1.099	<b>9.655</b>	<b>8.007</b>	<b>4.795</b>	<b>4.09</b>	1.426
3.73	2.71	2.46	1.542	1.021					
3.69	2.687	2.29	1.51	0.504					

Number of samples above threshold = 5

Number of samples above threshold = 25

False Alarm rate : 5 in 40

Miss rate : 5 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4**

Probability of correct TARGET detection (sensitivity) = 0.83333

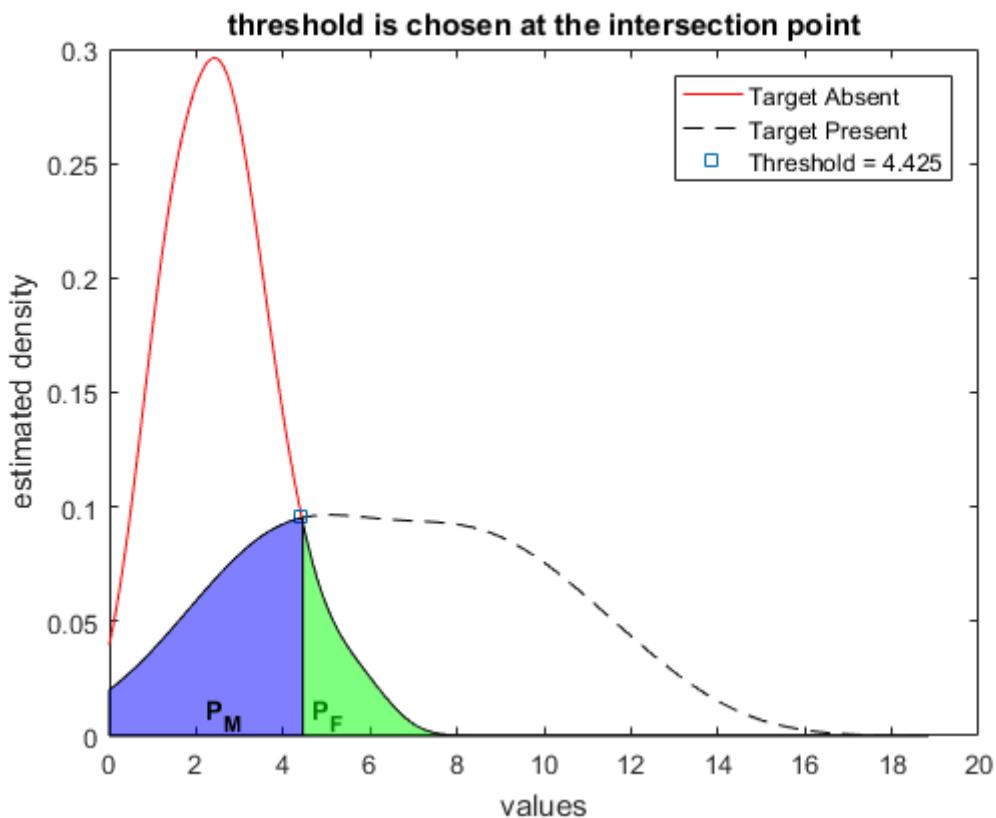
**Probability of Miss = 1 - sensitivity = 0.16667**

Probability of correct NO TARGET detection (specificity) = 0.875

**Probability of False Alarm = 1 - specificity = 0.125**

**Positive Predictive Value (PPV) = a posteriori probability = 0.83333**

Overall Accuracy = 0.85714



**Sorted and Partitioned Data : Threshold at 4.425**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.947	3.432	2.682	2.243	1.44	12.573	9.327	7.979	4.754	4.062
5.229	3.293	2.663	2.124	1.418	11.701	8.912	7.499	4.485	3.09
4.693	3.261	2.659	1.953	1.248	11.213	8.45	6.982	4.481	2.809
4.22	3.094	2.655	1.839	1.158	10.948	8.418	6.609	4.438	2.719
4.037	2.816	2.604	1.573	1.158	10.114	8.045	5.804	4.379	1.922
3.743	2.752	2.571	1.542	1.099	9.655	8.007	4.795	4.09	1.426
3.73	2.71	2.46	1.542	1.021					
3.69	2.687	2.29	1.51	0.504					

**Number of samples above threshold = 3**

False Alarm rate : 3 in 40

**Number of samples above threshold = 22**

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis Shahriar

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.425**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.88**

Overall Accuracy = 0.84286

**Confusion Matrix (Threshold Value = 4.425)**

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	22	8	30
Total Counts	25	45	70

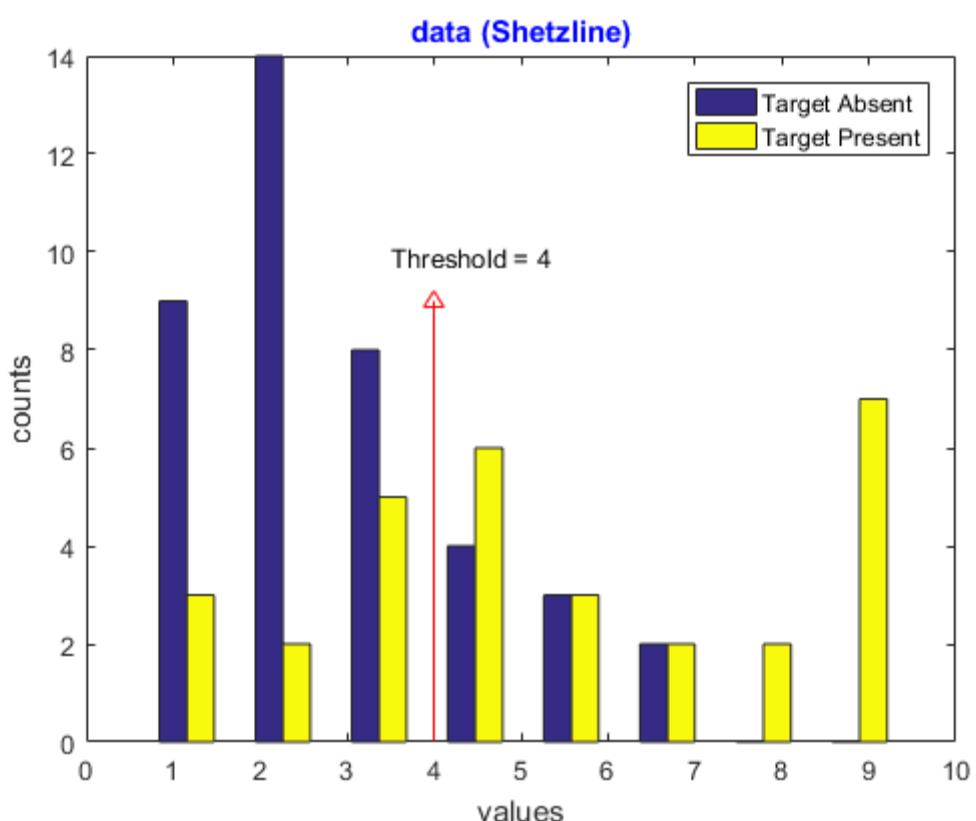
$$P_F = \frac{3}{40} \quad P_M = \frac{4}{15} \quad PPV = \frac{22}{25} \quad \text{err} = \frac{11}{70} \quad \text{acc} = \frac{59}{70}$$

## Summary of the analysis Shahriar

data (Shetzline)

Target Absent					Target Present				
1.661	6.662	2.681	4.133	2.893	9.08	4.399	1.951	6.522	7.806
3.695	5.151	3.556	1.1	1.524	4.248	8.139	3.616	0.674	0.604
2.19	6.199	2.724	3.649	1.226	6.336	0.931	5.378	3.68	4.569
1.083	1.752	1.982	3.841	1.48	8.908	2.356	6.046	4.045	4.082
1.615	4.208	3.556	5.188	1.881	3.442	3.455	6.029	2.828	9.098
1.873	1.869	2.927	2.162	0.974	9.447	8.374	8.726	9.367	3.985
1.283	1.809	3.395	5.768	1.899					
4.328	3.922	2.34	1.888	2.408					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4

	Target Absent					Target Present				
<b>6.662</b>	3.922	2.893	1.899	1.615		<b>9.447</b>	<b>8.374</b>	<b>6.029</b>	<b>4.045</b>	2.828
<b>6.199</b>	3.841	2.724	1.888	1.524		<b>9.367</b>	<b>8.139</b>	<b>5.378</b>	3.985	2.356
<b>5.768</b>	3.695	2.681	1.881	1.48		<b>9.098</b>	<b>7.806</b>	<b>4.569</b>	3.68	1.951
<b>5.188</b>	3.649	2.408	1.873	1.283		<b>9.08</b>	<b>6.522</b>	<b>4.399</b>	3.616	0.931
<b>5.151</b>	3.556	2.34	1.869	1.226		<b>8.908</b>	<b>6.336</b>	<b>4.248</b>	3.455	0.674
<b>4.328</b>	3.556	2.19	1.809	1.1		<b>8.726</b>	<b>6.046</b>	<b>4.082</b>	3.442	0.604
<b>4.208</b>	3.395	2.162	1.752	1.083						
<b>4.133</b>	2.927	1.982	1.661	0.974						

Number of samples above threshold = 8

Number of samples above threshold = 19

False Alarm rate : 8 in 40

Miss rate : 11 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4**

Probability of correct TARGET detection (sensitivity) = 0.63333

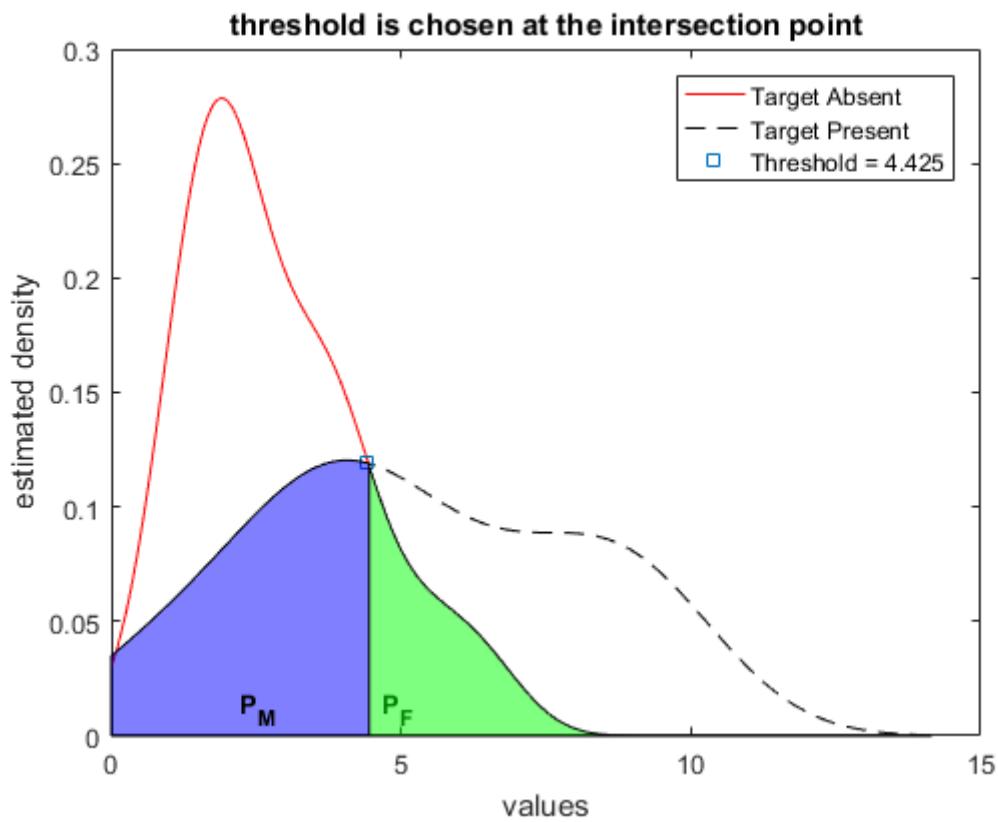
**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.8

**Probability of False Alarm = 1 - specificity = 0.2**

**Positive Predictive Value (PPV) = a posteriori probability = 0.7037**

Overall Accuracy = 0.72857



**Sorted and Partitioned Data : Threshold at 4.425**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
6.662	3.922	2.893	1.899	1.615	9.447	8.374	6.029	4.045	2.828
6.199	3.841	2.724	1.888	1.524	9.367	8.139	5.378	3.985	2.356
5.768	3.695	2.681	1.881	1.48	9.098	7.806	4.569	3.68	1.951
5.188	3.649	2.408	1.873	1.283	9.08	6.522	4.399	3.616	0.931
5.151	3.556	2.34	1.869	1.226	8.908	6.336	4.248	3.455	0.674
4.328	3.556	2.19	1.809	1.1	8.726	6.046	4.082	3.442	0.604
4.208	3.395	2.162	1.752	1.083					
4.133	2.927	1.982	1.661	0.974					

Number of samples above threshold = 5

False Alarm rate : 5 in 40

Number of samples above threshold = 15

Miss rate : 15 in 30

(c) P. M. Shankar

## Summary of the analysis Shetzline

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.425**

Probability of correct TARGET detection (sensitivity) = 0.5

**Probability of Miss = 1 - sensitivity = 0.5**

Probability of correct NO TARGET detection (specificity) = 0.875

**Probability of False Alarm = 1 - specificity = 0.125**

**Positive Predictive Value (PPV) = a posteriori probability = 0.75**

Overall Accuracy = 0.71429

### Confusion Matrix (Threshold Value = 4.425)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	5	35	40
Target Present	15	15	30
Total Counts	20	50	70

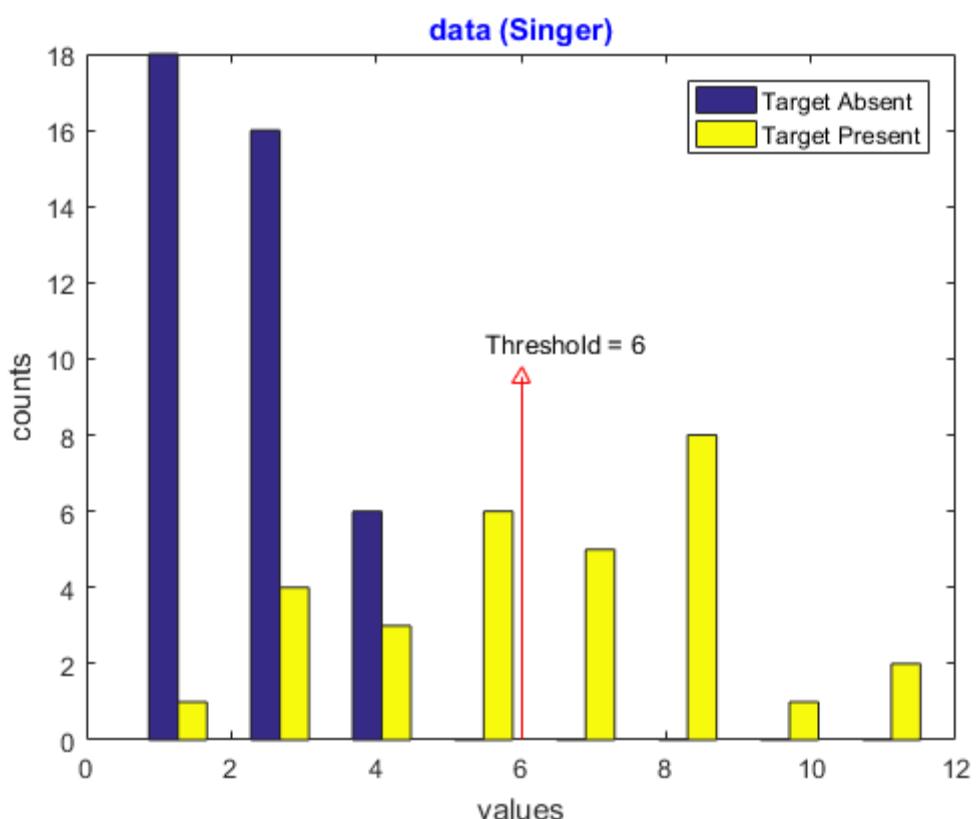
$$P_F = \frac{1}{8} \quad P_M = \frac{1}{2} \quad PPV = \frac{3}{4} \quad \text{err} = \frac{2}{7} \quad \text{acc} = \frac{5}{7}$$

## Summary of the analysis Shetzline

**data (Singer)**

Target Absent					Target Present				
1.646	1.403	1.926	1.711	3.59	0.767	6.985	6.963	5.654	10.806
3.211	4.438	1.741	3.703	0.722	6.323	8.516	11.815	5.386	3.288
1.84	4.63	1.654	2.064	2.338	2.421	6.179	8.508	8.018	2.039
2.82	1.848	2.138	4.664	1.389	7.692	7.958	6.127	7.57	4.821
1.476	0.86	1.793	2.095	3.171	3.573	4.761	6.698	8.686	9.499
0.562	0.685	3.148	2.932	1.727	4.896	3.43	7.688	2.699	8.698
2.08	3.24	3.058	3.188	2.767					
2.453	1.418	3.76	1.967	2.223					

**(c) P. M. Shankar**



### Sorted and Partitioned Data : Threshold at 6

Target Absent					Target Present				
4.664	3.188	2.338	1.848	1.476	<b>11.815</b>	<b>8.508</b>	<b>6.985</b>	5.654	3.43
4.63	3.171	2.223	1.84	1.418	<b>10.806</b>	<b>8.018</b>	<b>6.963</b>	5.386	3.288
4.438	3.148	2.138	1.793	1.403	<b>9.499</b>	<b>7.958</b>	<b>6.698</b>	4.896	2.699
3.76	3.058	2.095	1.741	1.389	<b>8.698</b>	<b>7.692</b>	<b>6.323</b>	4.821	2.421
3.703	2.932	2.08	1.727	0.86	<b>8.686</b>	<b>7.688</b>	<b>6.179</b>	4.761	2.039
3.59	2.82	2.064	1.711	0.722	<b>8.516</b>	<b>7.57</b>	<b>6.127</b>	3.573	0.767
3.24	2.767	1.967	1.654	0.685					
3.211	2.453	1.926	1.646	0.562					

**Number of samples above threshold = 0**

**Number of samples above threshold = 18**

False Alarm rate : 0 in 40

Miss rate : 12 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 6

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6**

Probability of correct TARGET detection (sensitivity) = 0.6

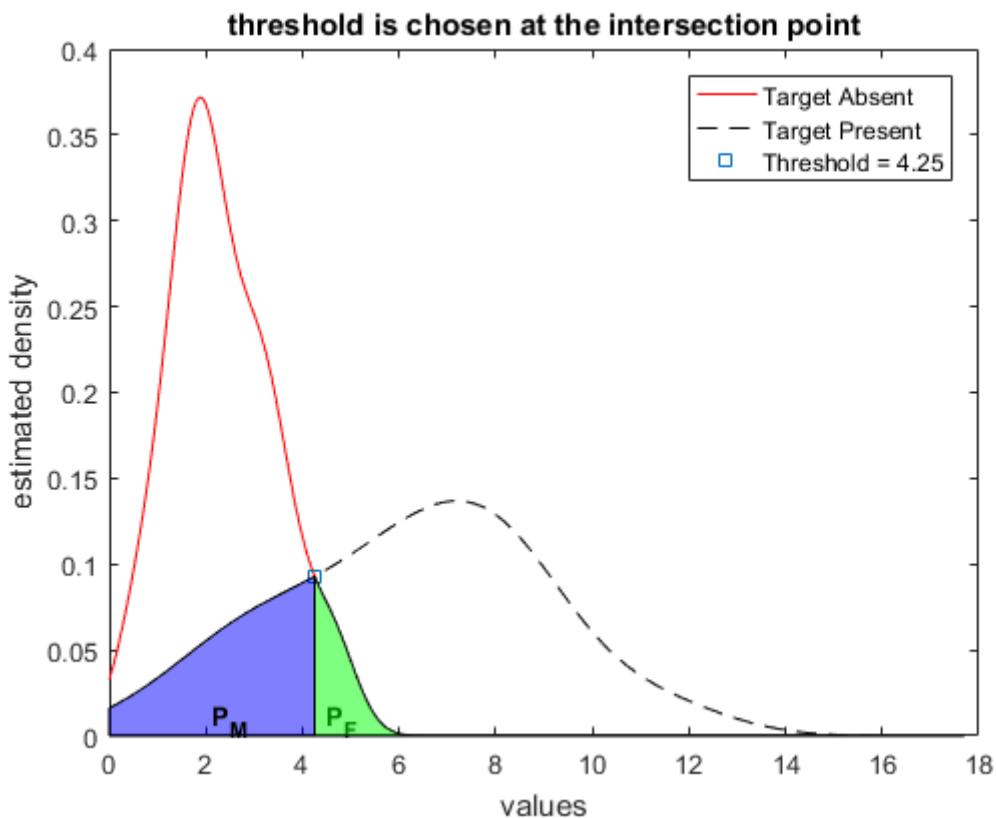
**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 4.25**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.664	3.188	2.338	1.848	1.476	11.815	8.508	6.985	5.654	3.43
4.63	3.171	2.223	1.84	1.418	10.806	8.018	6.963	5.386	3.288
4.438	3.148	2.138	1.793	1.403	9.499	7.958	6.698	4.896	2.699
3.76	3.058	2.095	1.741	1.389	8.698	7.692	6.323	4.821	2.421
3.703	2.932	2.08	1.727	0.86	8.686	7.688	6.179	4.761	2.039
3.59	2.82	2.064	1.711	0.722	8.516	7.57	6.127	3.573	0.767
3.24	2.767	1.967	1.654	0.685					
3.211	2.453	1.926	1.646	0.562					

Number of samples above threshold = 3

Number of samples above threshold = 23

False Alarm rate : 3 in 40

Miss rate : 7 in 30

(c) P. M. Shankar

## Summary of the analysis Singer

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.25**

Probability of correct TARGET detection (sensitivity) = 0.76667

**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.88462**

Overall Accuracy = 0.85714

### Confusion Matrix (Threshold Value = 4.25)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	23	7	30
Total Counts	26	44	70

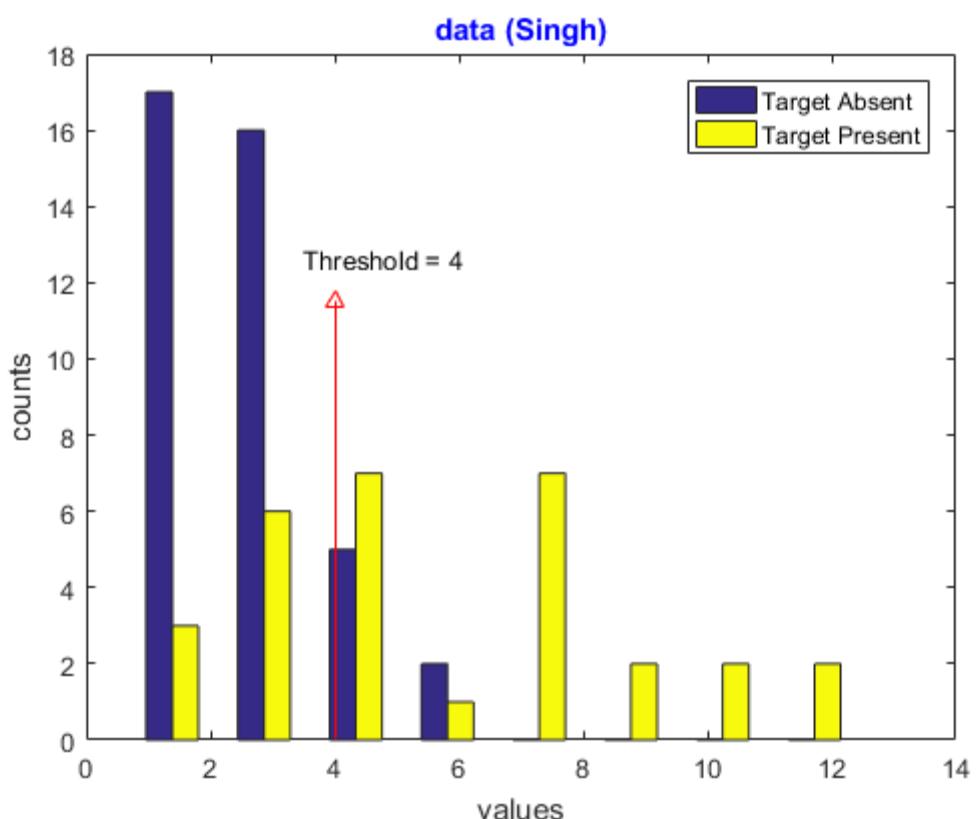
$$P_F = \frac{3}{40} \quad P_M = \frac{7}{30} \quad \text{PPV} = \frac{23}{26} \quad \text{err} = \frac{1}{7} \quad \text{acc} = \frac{6}{7}$$

## Summary of the analysis Singer

data (Singh)

Target Absent					Target Present				
3.896	1.624	3.922	0.879	5.103	1.891	7.127	4.169	7.528	3.586
2.695	2.877	0.951	3.256	3.955	9.104	4.545	12.463	6.764	3.826
1.534	0.708	2.392	1.033	1.862	8.462	3.748	2.152	2.962	4.437
3.597	2.558	3.563	2.402	4.084	2.171	10.358	8.001	12.25	2.956
1.632	0.822	3.075	1.818	5.292	5.068	6.478	1.135	3.182	4.515
0.647	2.659	2.165	3.674	0.879	1.606	6.839	6.814	10.747	7.354
1.467	2.206	2.876	1.26	1.495					
1.645	1.015	2.958	2.908	2.913					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4

Target Absent					Target Present				
<b>5.292</b>	3.563	2.695	1.818	1.033	<b>12.463</b>	<b>8.001</b>	<b>6.764</b>	<b>4.169</b>	2.956
<b>5.103</b>	3.256	2.659	1.645	1.015	<b>12.25</b>	<b>7.528</b>	<b>6.478</b>	3.826	2.171
<b>4.084</b>	3.075	2.558	1.632	0.951	<b>10.747</b>	<b>7.354</b>	<b>5.068</b>	3.748	2.152
3.955	2.958	2.402	1.624	0.879	<b>10.358</b>	<b>7.127</b>	<b>4.545</b>	3.586	1.891
3.922	2.913	2.392	1.534	0.879	<b>9.104</b>	<b>6.839</b>	<b>4.515</b>	3.182	1.606
3.896	2.908	2.206	1.495	0.822	<b>8.462</b>	<b>6.814</b>	<b>4.437</b>	2.962	1.135
3.674	2.877	2.165	1.467	0.708					
3.597	2.876	1.862	1.26	0.647					

Number of samples above threshold = 3

Number of samples above threshold = 19

False Alarm rate : 3 in 40

Miss rate : 11 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4**

Probability of correct TARGET detection (sensitivity) = 0.63333

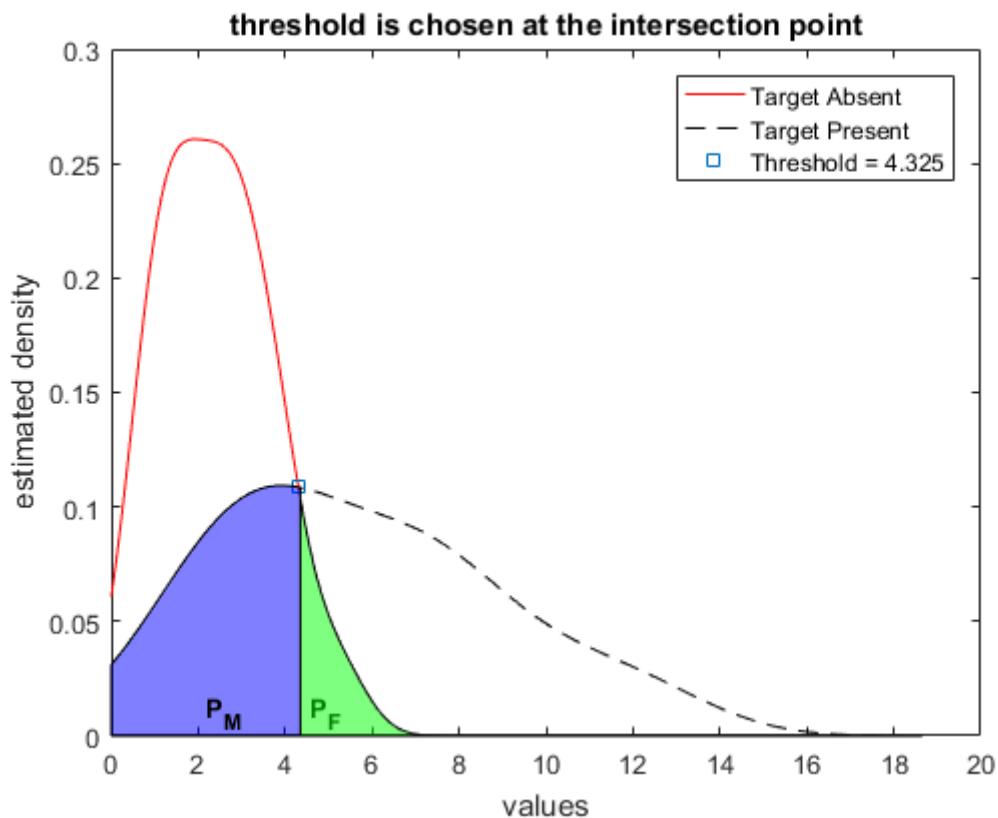
**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.86364**

Overall Accuracy = 0.8



**Sorted and Partitioned Data : Threshold at 4.325**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.292	3.563	2.695	1.818	1.033	12.463	8.001	6.764	4.169	2.956
5.103	3.256	2.659	1.645	1.015	12.25	7.528	6.478	3.826	2.171
4.084	3.075	2.558	1.632	0.951	10.747	7.354	5.068	3.748	2.152
3.955	2.958	2.402	1.624	0.879	10.358	7.127	4.545	3.586	1.891
3.922	2.913	2.392	1.534	0.879	9.104	6.839	4.515	3.182	1.606
3.896	2.908	2.206	1.495	0.822	8.462	6.814	4.437	2.962	1.135
3.674	2.877	2.165	1.467	0.708					
3.597	2.876	1.862	1.26	0.647					

**Number of samples above threshold = 2**

False Alarm rate : 2 in 40

**Number of samples above threshold = 18**

Miss rate : 12 in 30

**(c) P. M. Shankar**

## Summary of the analysis Singh

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.325**

Probability of correct TARGET detection (sensitivity) = 0.6

**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.9**

Overall Accuracy = 0.8

### Confusion Matrix (Threshold Value = 4.325)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	18	12	30
Total Counts	20	50	70

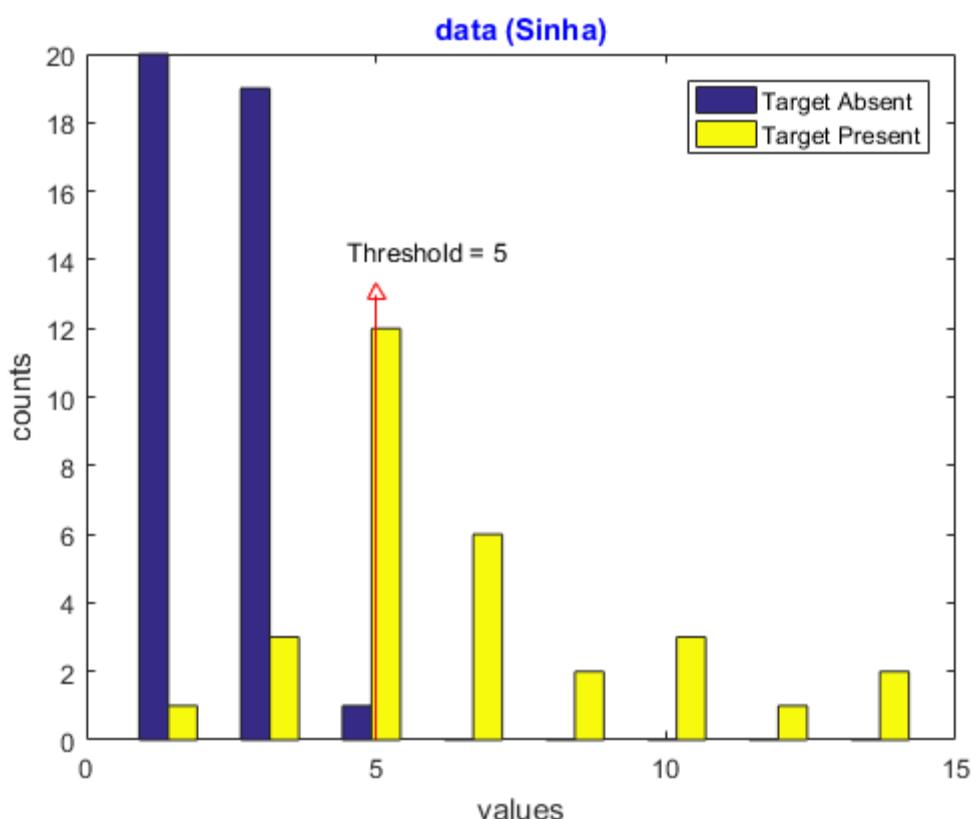
$$P_F = \frac{1}{20} \quad P_M = \frac{2}{5} \quad PPV = \frac{9}{10} \quad \text{err} = \frac{1}{5} \quad \text{acc} = \frac{4}{5}$$

## Summary of the analysis Singh

**data (Sinha)**

Target Absent					Target Present				
2.756	2.441	2.602	2.395	3.038	7.302	6.004	3.391	4.647	5.418
1.713	2.228	3.524	2.923	2.565	10.764	5.826	9.387	4.557	3.016
2.902	2.079	3.784	2.204	3.226	5.584	9.072	4.085	5.342	6.365
5.401	3.009	2.505	0.859	1.856	14.57	4.216	8.174	4.744	14.254
2.387	1.258	0.675	2.33	2.314	7.457	11.142	4.988	5.426	5.723
1.798	2.031	0.803	2.098	3.543	1.942	2.614	7.214	9.655	4.906
1.404	1.797	0.534	2.375	1.538					
0.935	3.612	2.175	1.925	2.245					

**(c) P. M. Shankar**



### Sorted and Partitioned Data : Threshold at 5

	Target Absent					Target Present				
<b>5.401</b>	2.923	2.387	2.098	1.538		<b>14.57</b>	<b>9.072</b>	<b>6.004</b>	<b>5.342</b>	4.216
3.784	2.902	2.375	2.079	1.404		<b>14.254</b>	<b>8.174</b>	<b>5.826</b>	4.988	4.085
3.612	2.756	2.33	2.031	1.258		<b>11.142</b>	<b>7.457</b>	<b>5.723</b>	4.906	3.391
3.543	2.602	2.314	1.925	0.935		<b>10.764</b>	<b>7.302</b>	<b>5.584</b>	4.744	3.016
3.524	2.565	2.245	1.856	0.859		<b>9.655</b>	<b>7.214</b>	<b>5.426</b>	4.647	2.614
3.226	2.505	2.228	1.798	0.803		<b>9.387</b>	<b>6.365</b>	<b>5.418</b>	4.557	1.942
3.038	2.441	2.204	1.797	0.675						
3.009	2.395	2.175	1.713	0.534						

Number of samples above threshold = 1

Number of samples above threshold = 19

False Alarm rate : 1 in 40

Miss rate : 11 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5**

Probability of correct TARGET detection (sensitivity) = 0.63333

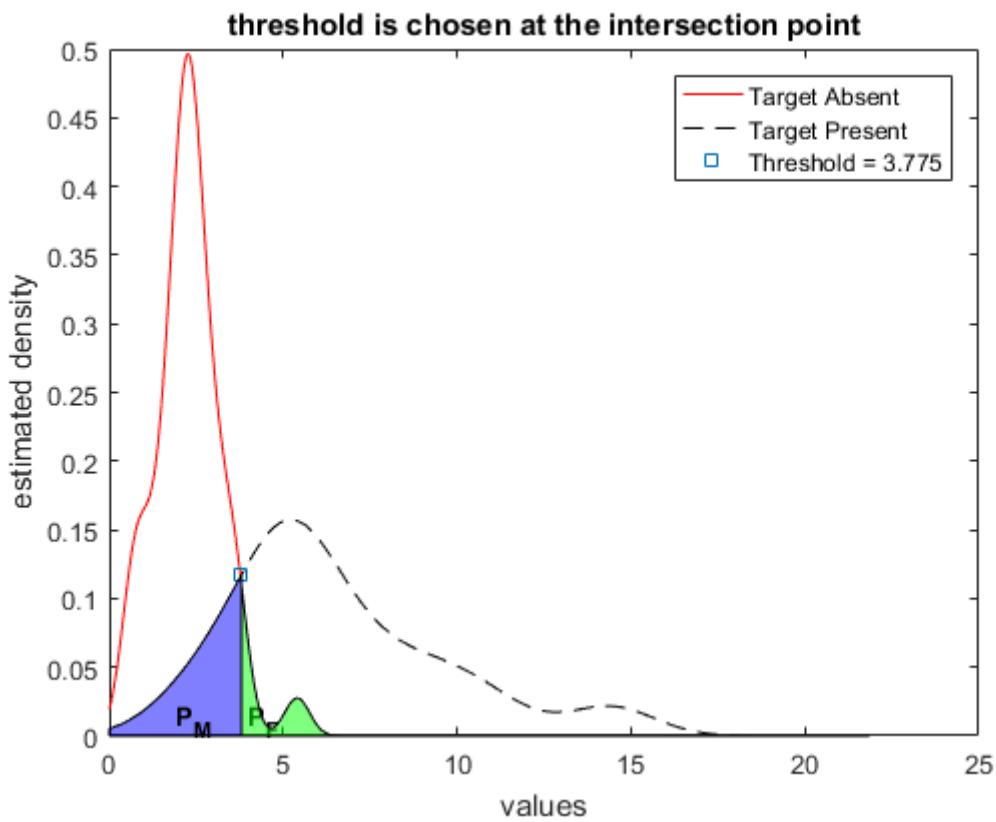
**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 3.775**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.401	2.923	2.387	2.098	1.538	14.57	9.072	6.004	5.342	4.216
3.784	2.902	2.375	2.079	1.404	14.254	8.174	5.826	4.988	4.085
3.612	2.756	2.33	2.031	1.258	11.142	7.457	5.723	4.906	3.391
3.543	2.602	2.314	1.925	0.935	10.764	7.302	5.584	4.744	3.016
3.524	2.565	2.245	1.856	0.859	9.655	7.214	5.426	4.647	2.614
3.226	2.505	2.228	1.798	0.803	9.387	6.365	5.418	4.557	1.942
3.038	2.441	2.204	1.797	0.675					
3.009	2.395	2.175	1.713	0.534					

**Number of samples above threshold = 2**

False Alarm rate : 2 in 40

**Number of samples above threshold = 26**

Miss rate : 4 in 30

(c) P. M. Shankar

## Summary of the analysis Sinha

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.775**

Probability of correct TARGET detection (sensitivity) = 0.86667

**Probability of Miss = 1 - sensitivity = 0.13333**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.92857**

Overall Accuracy = 0.91429

### Confusion Matrix (Threshold Value = 3.775)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	26	4	30
Total Counts	28	42	70

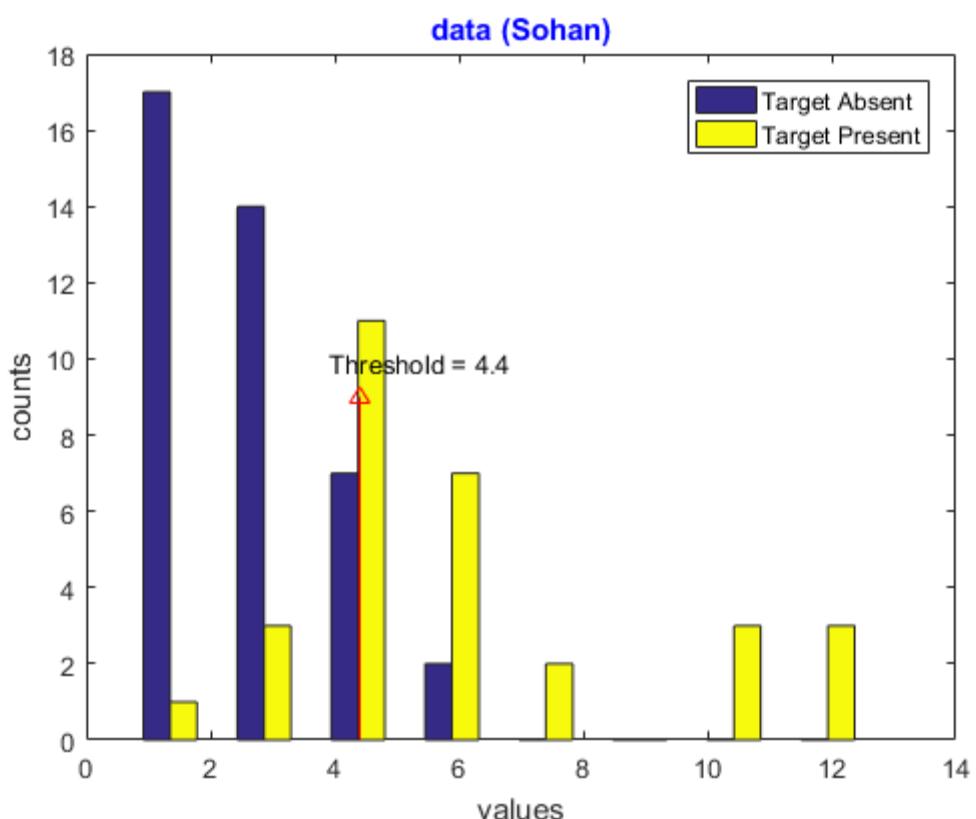
$$P_F = \frac{1}{20} \quad P_M = \frac{2}{15} \quad PPV = \frac{13}{14} \quad \text{err} = \frac{3}{35} \quad \text{acc} = \frac{32}{35}$$

## Summary of the analysis Sinha

data (Sohan)

Target Absent					Target Present				
0.836	0.595	1.033	3.26	1.775	4.711	3.957	10.156	3.901	3.775
1.595	4.197	1.482	2.716	4.403	12.695	4.276	5.266	3.317	5.451
1.431	2.335	4.766	1.234	0.968	5.23	3.748	6.366	2.953	2.335
1.463	5.886	3.407	1.47	2.038	5.092	6.33	8.001	3.68	10.125
0.913	1.416	2.382	4.703	3.028	5.762	10.281	6.856	4.199	4.597
3.46	2.47	1.652	3.313	2.3	6.437	11.515	11.802	0.914	4.216
2.423	2.657	4.031	2.787	3.194					
5.261	3.833	3.64	1.255	1.717					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.4

Target Absent					Target Present				
<b>5.886</b>	3.64	2.716	1.775	1.416	<b>12.695</b>	<b>8.001</b>	<b>5.451</b>	4.276	3.748
<b>5.261</b>	3.46	2.657	1.717	1.255	<b>11.802</b>	<b>6.856</b>	<b>5.266</b>	4.216	3.68
<b>4.766</b>	3.407	2.47	1.652	1.234	<b>11.515</b>	<b>6.437</b>	<b>5.23</b>	4.199	3.317
<b>4.703</b>	3.313	2.423	1.595	1.033	<b>10.281</b>	<b>6.366</b>	<b>5.092</b>	3.957	2.953
<b>4.403</b>	3.26	2.382	1.482	0.968	<b>10.156</b>	<b>6.33</b>	<b>4.711</b>	3.901	2.335
4.197	3.194	2.335	1.47	0.913	<b>10.125</b>	<b>5.762</b>	<b>4.597</b>	3.775	0.914
4.031	3.028	2.3	1.463	0.836					
3.833	2.787	2.038	1.431	0.595					

Number of samples above threshold = 5

Number of samples above threshold = 18

False Alarm rate : 5 in 40

Miss rate : 12 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.4

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.4**

Probability of correct TARGET detection (sensitivity) = 0.6

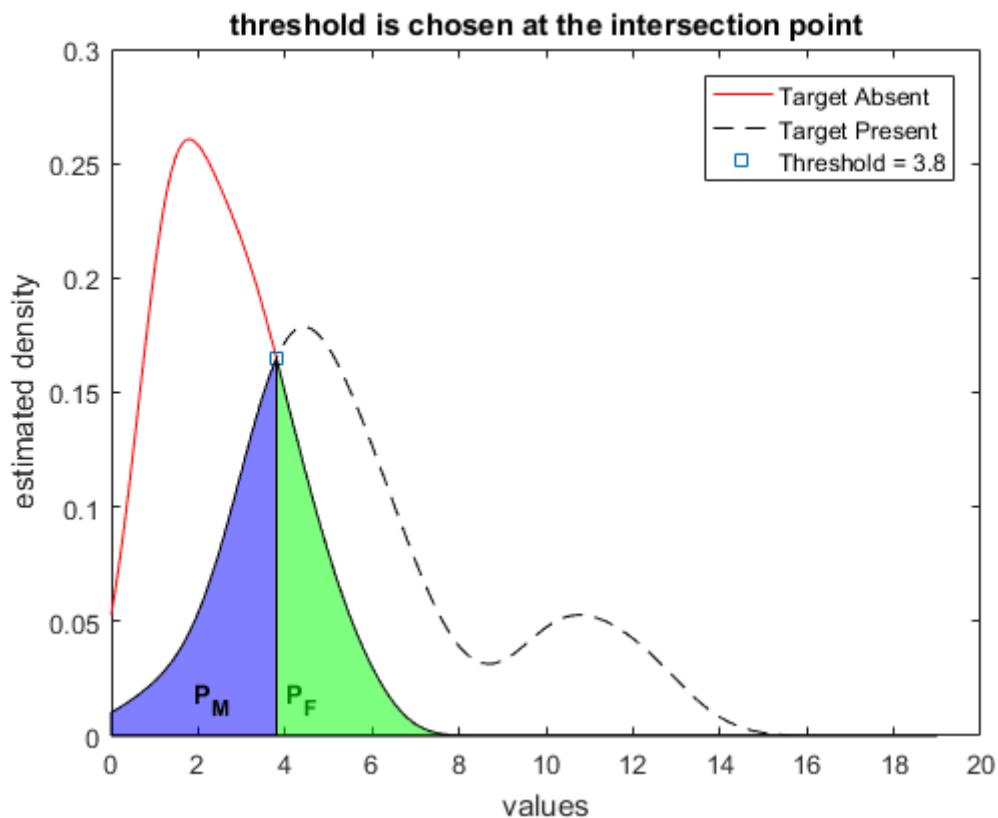
**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 0.875

**Probability of False Alarm = 1 - specificity = 0.125**

**Positive Predictive Value (PPV) = a posteriori probability = 0.78261**

Overall Accuracy = 0.75714



**Sorted and Partitioned Data : Threshold at 3.8**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>5.886</b>	3.64	2.716	1.775	1.416	<b>12.695</b>	<b>8.001</b>	<b>5.451</b>	<b>4.276</b>	3.748
<b>5.261</b>	3.46	2.657	1.717	1.255	<b>11.802</b>	<b>6.856</b>	<b>5.266</b>	<b>4.216</b>	3.68
<b>4.766</b>	3.407	2.47	1.652	1.234	<b>11.515</b>	<b>6.437</b>	<b>5.23</b>	<b>4.199</b>	3.317
<b>4.703</b>	3.313	2.423	1.595	1.033	<b>10.281</b>	<b>6.366</b>	<b>5.092</b>	<b>3.957</b>	2.953
<b>4.403</b>	3.26	2.382	1.482	0.968	<b>10.156</b>	<b>6.33</b>	<b>4.711</b>	<b>3.901</b>	2.335
<b>4.197</b>	3.194	2.335	1.47	0.913	<b>10.125</b>	<b>5.762</b>	<b>4.597</b>	3.775	0.914
<b>4.031</b>	3.028	2.3	1.463	0.836					
<b>3.833</b>	2.787	2.038	1.431	0.595					

**Number of samples above threshold = 8**

False Alarm rate : 8 in 40

**Number of samples above threshold = 23**

Miss rate : 7 in 30

(c) P. M. Shankar

## Summary of the analysis Sohan

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.8**

Probability of correct TARGET detection (sensitivity) = 0.76667

**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.8

**Probability of False Alarm = 1 - specificity = 0.2**

**Positive Predictive Value (PPV) = a posteriori probability = 0.74194**

Overall Accuracy = 0.78571

### Confusion Matrix (Threshold Value = 3.8)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	8	32	40
Target Present	23	7	30
Total Counts	31	39	70

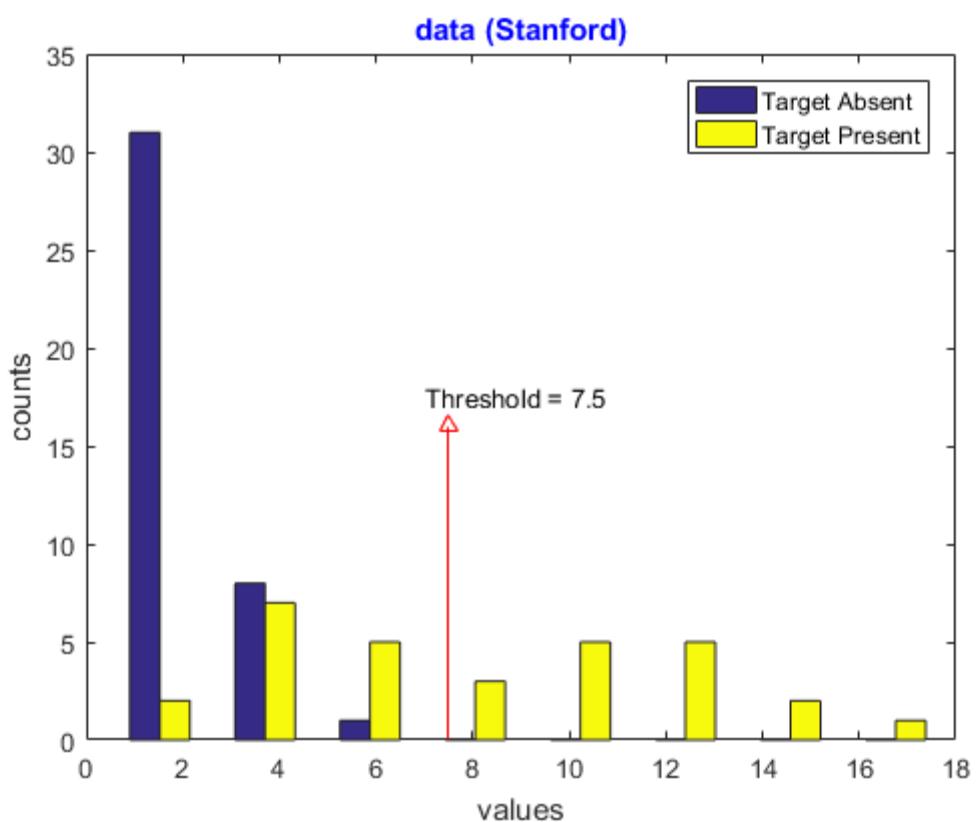
$$P_F = \frac{1}{5} \quad P_M = \frac{7}{30} \quad PPV = \frac{23}{31} \quad \text{err} = \frac{3}{14} \quad \text{acc} = \frac{11}{14}$$

## Summary of the analysis Sohan

data (Stanford)

Target Absent					Target Present				
2.124	4.38	4.179	5.609	0.945	12.96	4.529	11.047	7.455	2.883
1.803	1.629	2.291	3.89	1.986	3.058	9.363	17.843	4.44	9.861
1.664	0.756	2.618	1.741	3.242	11.478	15.422	6.639	9.256	1.155
0.722	0.642	2.392	2.254	1.972	3.546	14.251	6.014	2.645	3.922
1.285	1.563	1.754	1.89	1.127	1.494	11.737	6.231	4.893	5.623
1.947	1.975	3.275	2.275	1.464	8.246	11.995	8.76	13.015	9.496
1.867	0.893	1.14	0.436	0.776					
4.492	0.568	1.828	0.67	4.55					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 7.5

Target Absent					Target Present			
5.609	2.618	1.972	1.664	0.893	<b>17.843</b>	<b>11.737</b>	<b>9.256</b>	6.014
4.55	2.392	1.947	1.629	0.776	<b>15.422</b>	<b>11.478</b>	<b>8.76</b>	5.623
4.492	2.291	1.89	1.563	0.756	<b>14.251</b>	<b>11.047</b>	<b>8.246</b>	4.893
4.38	2.275	1.867	1.464	0.722	<b>13.015</b>	<b>9.861</b>	7.455	4.529
4.179	2.254	1.828	1.285	0.67	<b>12.96</b>	<b>9.496</b>	6.639	4.44
3.89	2.124	1.803	1.14	0.642	<b>11.995</b>	<b>9.363</b>	6.231	3.922
3.275	1.986	1.754	1.127	0.568				
3.242	1.975	1.741	0.945	0.436				

**Number of samples above threshold = 0**

**Number of samples above threshold = 15**

False Alarm rate : 0 in 40

Miss rate : 15 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 7.5

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 7.5**

Probability of correct TARGET detection (sensitivity) = 0.5

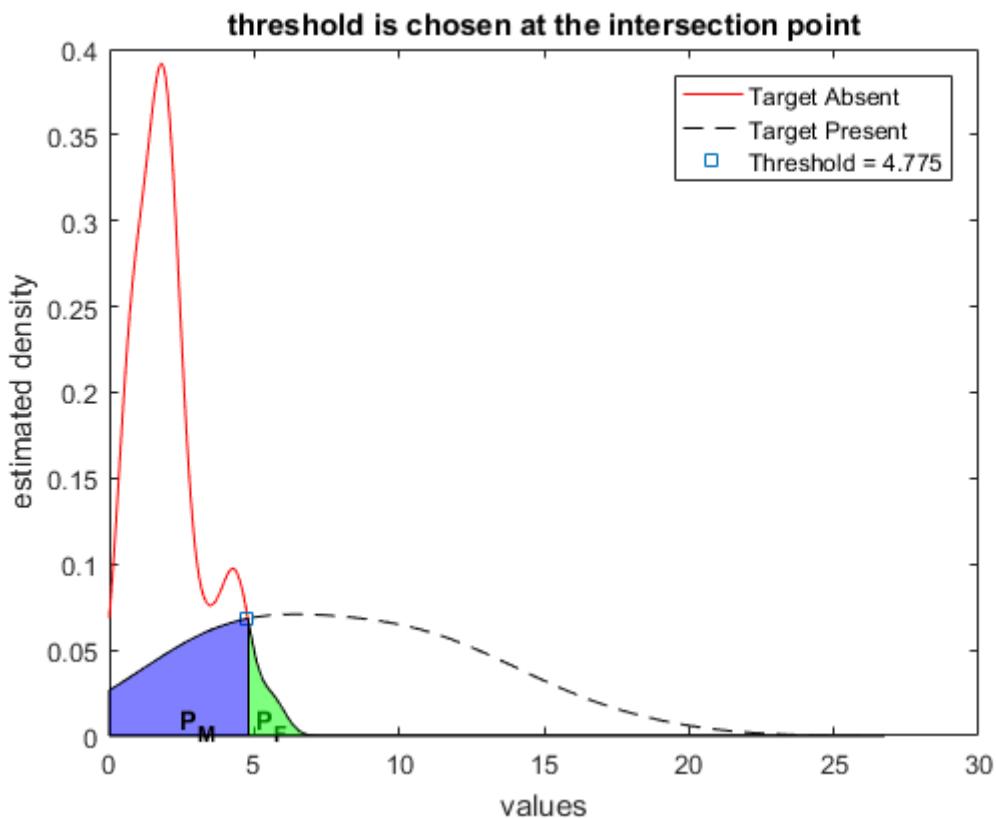
**Probability of Miss = 1 - sensitivity = 0.5**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.78571



**Sorted and Partitioned Data : Threshold at 4.775**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.609	2.618	1.972	1.664	0.893	17.843	11.737	9.256	6.014	3.546
4.55	2.392	1.947	1.629	0.776	15.422	11.478	8.76	5.623	3.058
4.492	2.291	1.89	1.563	0.756	14.251	11.047	8.246	4.893	2.883
4.38	2.275	1.867	1.464	0.722	13.015	9.861	7.455	4.529	2.645
4.179	2.254	1.828	1.285	0.67	12.96	9.496	6.639	4.44	1.494
3.89	2.124	1.803	1.14	0.642	11.995	9.363	6.231	3.922	1.155
3.275	1.986	1.754	1.127	0.568					
3.242	1.975	1.741	0.945	0.436					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 21**

Miss rate : 9 in 30

(c) P. M. Shankar

## Summary of the analysis Stanford

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.775**

Probability of correct TARGET detection (sensitivity) = 0.7

**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95455**

Overall Accuracy = 0.85714

### Confusion Matrix (Threshold Value = 4.775)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	21	9	30
Total Counts	22	48	70

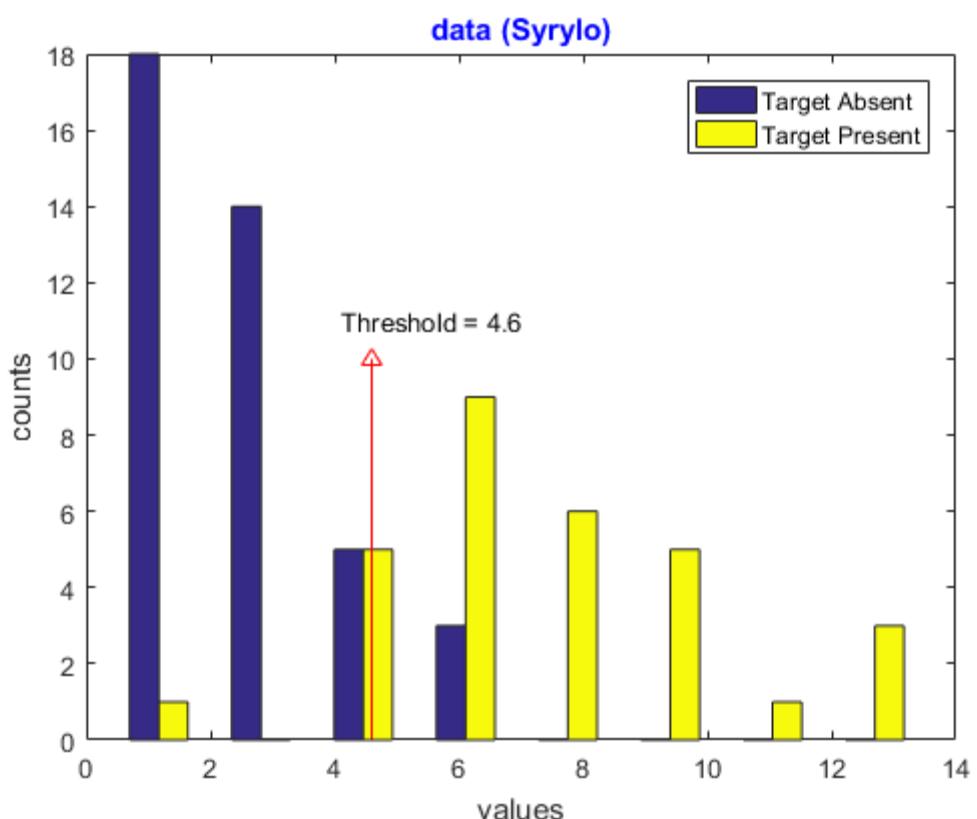
$$P_F = \frac{1}{40} \quad P_M = \frac{3}{10} \quad PPV = \frac{21}{22} \quad \text{err} = \frac{1}{7} \quad \text{acc} = \frac{6}{7}$$

## Summary of the analysis Stanford

data (Srylo)

Target Absent					Target Present				
2.49	1.067	2.33	2.809	0.714	9.209	6.471	12.901	13.493	7.32
2.3	4.456	3.422	1.135	1.674	5.238	6.16	5.335	5.558	5.895
4.233	3.258	2.3	0.841	2.986	1.344	5.314	3.779	4.009	9.378
0.344	2.726	0.678	1.599	1.062	11.439	8.137	8.054	8.462	8.591
2.551	2.505	3.311	1.474	5.542	4.109	6.716	5.484	8.613	8.009
1.772	1.439	3.828	1.02	0.527	7.875	4.176	6.869	13.52	9.22
3.068	0.474	0.47	4.753	0.37					
3.263	1.599	5.361	4.26	6.593					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.6

Target Absent					Target Present				
<b>6.593</b>	3.422	2.551	1.599	0.841	<b>13.52</b>	<b>9.209</b>	<b>8.009</b>	<b>6.16</b>	<b>5.238</b>
<b>5.542</b>	3.311	2.505	1.599	0.714	<b>13.493</b>	<b>8.613</b>	<b>7.875</b>	<b>5.895</b>	4.176
<b>5.361</b>	3.263	2.49	1.474	0.678	<b>12.901</b>	<b>8.591</b>	<b>7.32</b>	<b>5.558</b>	4.109
<b>4.753</b>	3.258	2.33	1.439	0.527	<b>11.439</b>	<b>8.462</b>	<b>6.869</b>	<b>5.484</b>	4.009
4.456	3.068	2.3	1.135	0.474	<b>9.378</b>	<b>8.137</b>	<b>6.716</b>	<b>5.335</b>	3.779
4.26	2.986	2.3	1.067	0.47	<b>9.22</b>	<b>8.054</b>	<b>6.471</b>	<b>5.314</b>	1.344
4.233	2.809	1.772	1.062	0.37					
3.828	2.726	1.674	1.02	0.344					

**Number of samples above threshold = 4**

**Number of samples above threshold = 25**

False Alarm rate : 4 in 40

Miss rate : 5 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 4.6

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.6**

Probability of correct TARGET detection (sensitivity) = 0.83333

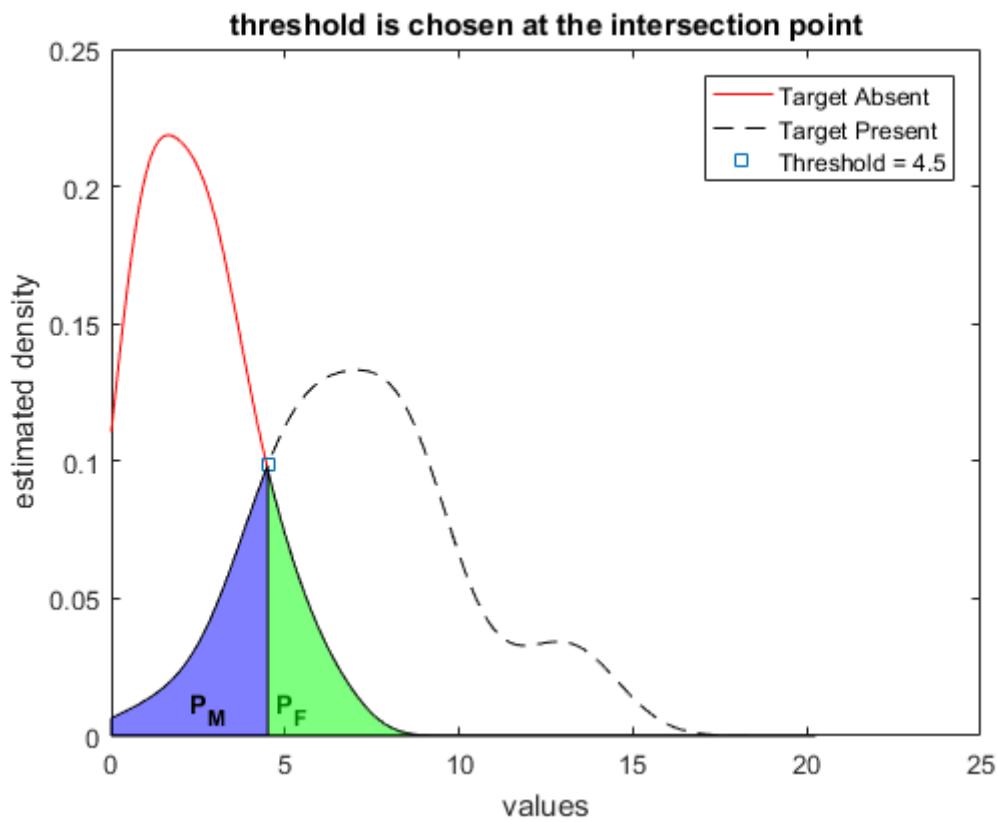
**Probability of Miss = 1 - sensitivity = 0.16667**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.86207**

Overall Accuracy = 0.87143



**Sorted and Partitioned Data : Threshold at 4.5**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
6.593	3.422	2.551	1.599	0.841	13.52	9.209	8.009	6.16	5.238
5.542	3.311	2.505	1.599	0.714	13.493	8.613	7.875	5.895	4.176
5.361	3.263	2.49	1.474	0.678	12.901	8.591	7.32	5.558	4.109
4.753	3.258	2.33	1.439	0.527	11.439	8.462	6.869	5.484	4.009
4.456	3.068	2.3	1.135	0.474	9.378	8.137	6.716	5.335	3.779
4.26	2.986	2.3	1.067	0.47	9.22	8.054	6.471	5.314	1.344
4.233	2.809	1.772	1.062	0.37					
3.828	2.726	1.674	1.02	0.344					

**Number of samples above threshold = 4**

False Alarm rate : 4 in 40

**Number of samples above threshold = 25**

Miss rate : 5 in 30

(c) P. M. Shankar

## Summary of the analysis Syrlo

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.5**

Probability of correct TARGET detection (sensitivity) = 0.83333

**Probability of Miss = 1 - sensitivity = 0.16667**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.86207**

Overall Accuracy = 0.87143

### Confusion Matrix (Threshold Value = 4.5)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	25	5	30
Total Counts	29	41	70

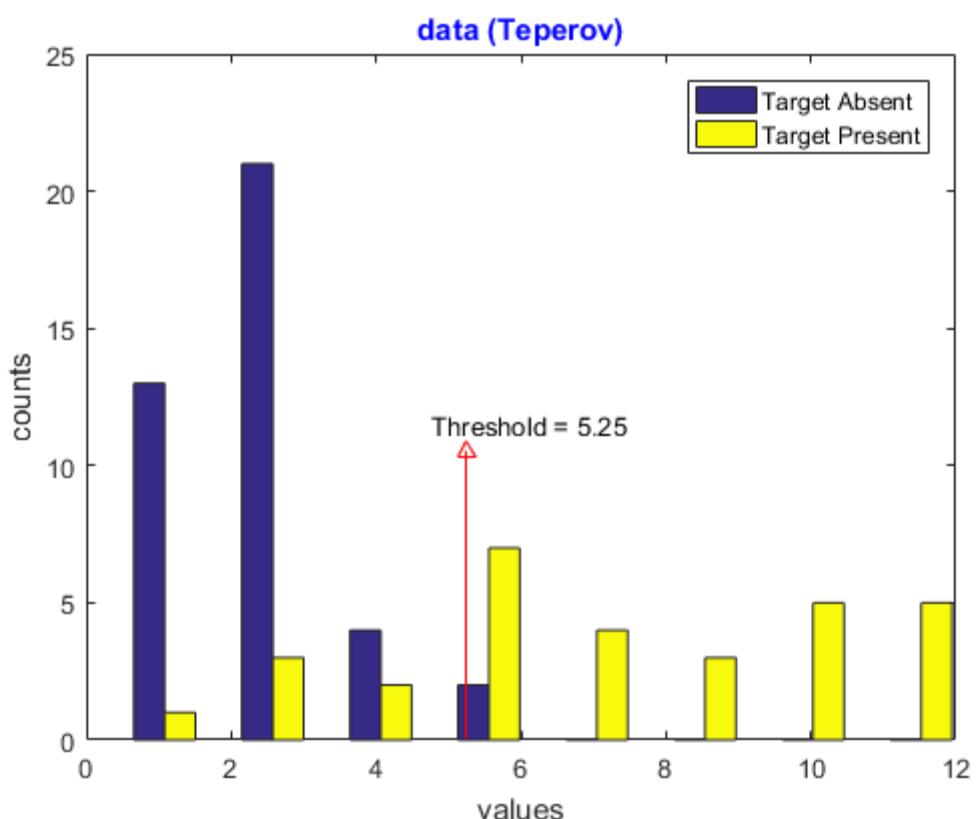
$$P_F = \frac{1}{10} \quad P_M = \frac{1}{6} \quad \text{PPV} = \frac{25}{29} \quad \text{err} = \frac{9}{70} \quad \text{acc} = \frac{61}{70}$$

## Summary of the analysis Syrlo

data (Teperov)

Target Absent					Target Present				
1.596	2.585	1.101	4.829	1.945	7.243	10.664	5.309	11.574	5.18
2.77	2.143	0.894	2.289	2.591	5.068	2.976	8.51	10.55	8.547
3.808	2.137	1.649	0.42	3.835	0.57	7.26	2.38	9.874	5.422
2.29	2.504	2.938	2.951	1.924	4.725	12.268	9.526	9.138	6.88
4.905	1.984	0.336	0.984	2.362	5.414	11.15	6.224	6.19	3.535
1.099	2.812	3.027	3.016	2.682	10.919	9.757	3.298	7.607	11.123
1.06	2.35	4.195	1.706	1.952					
1.441	1.826	2.264	1.044	3.689					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.25

Target Absent					Target Present				
4.905	2.951	2.362	1.952	1.101	<b>12.268</b>	<b>10.55</b>	<b>8.51</b>	<b>6.19</b>	4.725
4.829	2.938	2.35	1.945	1.099	<b>11.574</b>	<b>9.874</b>	<b>7.607</b>	<b>5.422</b>	3.535
4.195	2.812	2.29	1.924	1.06	<b>11.15</b>	<b>9.757</b>	<b>7.26</b>	<b>5.414</b>	3.298
3.835	2.77	2.289	1.826	1.044	<b>11.123</b>	<b>9.526</b>	<b>7.243</b>	<b>5.309</b>	2.976
3.808	2.682	2.264	1.706	0.984	<b>10.919</b>	<b>9.138</b>	<b>6.88</b>	5.18	2.38
3.689	2.591	2.143	1.649	0.894	<b>10.664</b>	<b>8.547</b>	<b>6.224</b>	5.068	0.57
3.027	2.585	2.137	1.596	0.42					
3.016	2.504	1.984	1.441	0.336					

Number of samples above threshold = 0

Number of samples above threshold = 22

False Alarm rate : 0 in 40

Miss rate : 8 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.25

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.25**

Probability of correct TARGET detection (sensitivity) = 0.73333

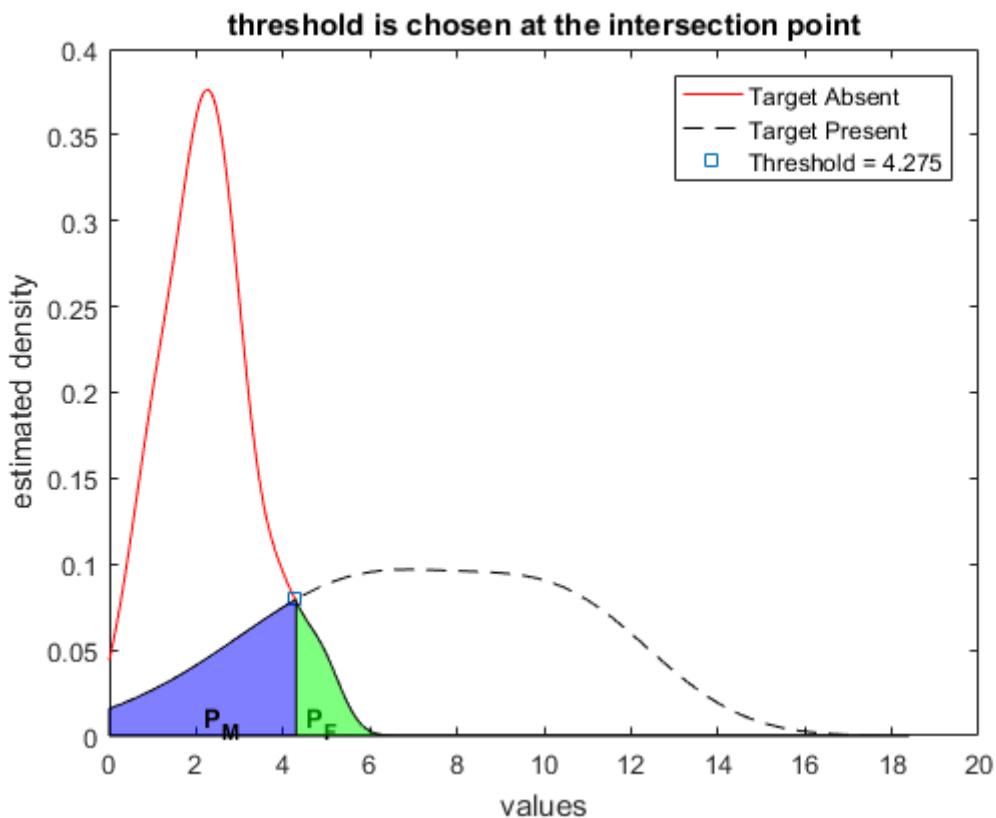
**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.88571



**Sorted and Partitioned Data : Threshold at 4.275**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.905	2.951	2.362	1.952	1.101	12.268	10.55	8.51	6.19	4.725
4.829	2.938	2.35	1.945	1.099	11.574	9.874	7.607	5.422	3.535
4.195	2.812	2.29	1.924	1.06	11.15	9.757	7.26	5.414	3.298
3.835	2.77	2.289	1.826	1.044	11.123	9.526	7.243	5.309	2.976
3.808	2.682	2.264	1.706	0.984	10.919	9.138	6.88	5.18	2.38
3.689	2.591	2.143	1.649	0.894	10.664	8.547	6.224	5.068	0.57
3.027	2.585	2.137	1.596	0.42					
3.016	2.504	1.984	1.441	0.336					

**Number of samples above threshold = 2**

False Alarm rate : 2 in 40

**Number of samples above threshold = 25**

Miss rate : 5 in 30

(c) P. M. Shankar

## Summary of the analysis Teperov

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.275**

Probability of correct TARGET detection (sensitivity) = 0.83333

**Probability of Miss = 1 - sensitivity = 0.16667**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.92593**

Overall Accuracy = 0.9

### Confusion Matrix (Threshold Value = 4.275)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	2	38	40
Target Present	25	5	30
Total Counts	27	43	70

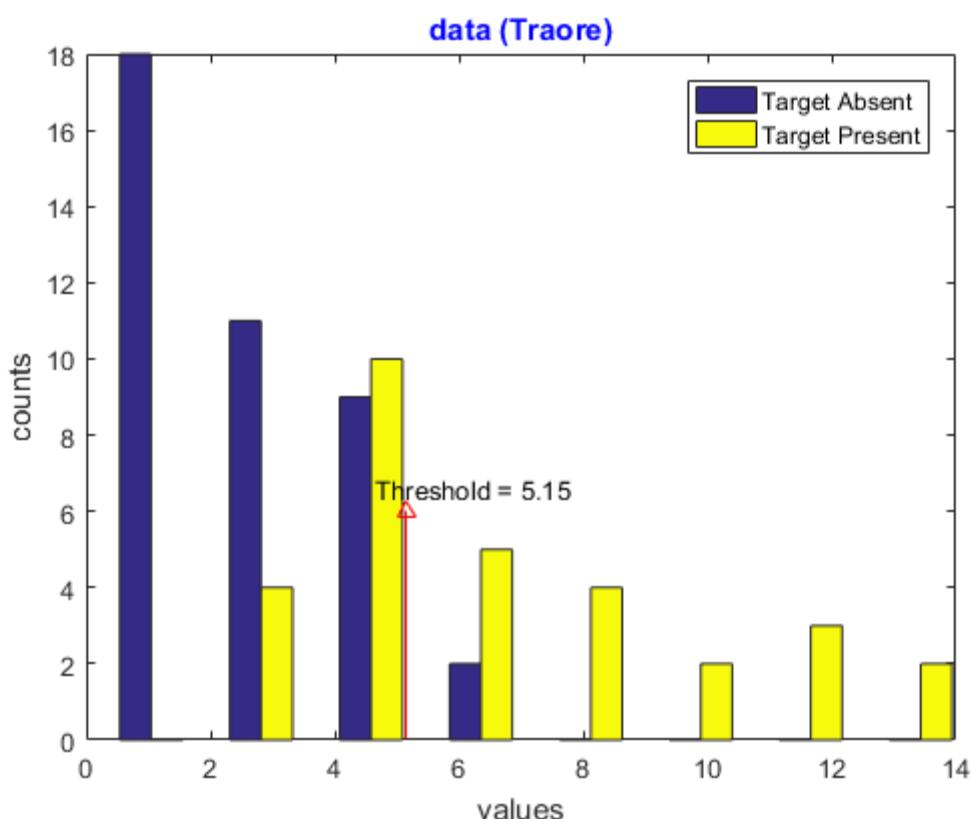
$$P_F = \frac{1}{20} \quad P_M = \frac{1}{6} \quad PPV = \frac{25}{27} \quad \text{err} = \frac{1}{10} \quad \text{acc} = \frac{9}{10}$$

## Summary of the analysis Teperov

data (Traore)

Target Absent					Target Present				
4.123	4.637	0.783	1.791	0.862	4.719	6.974	10.135	5.414	8.887
4.806	0.782	1.16	1.212	3.91	6.258	5.155	3.456	3.977	3.907
4.254	1.727	2.577	1.566	2.793	7.415	12.33	2.461	3.723	12.265
0.904	4.962	2.877	1.83	1.312	5.347	4.173	9.49	5.84	14.052
0.793	0.999	5.688	1.145	0.161	5.174	11.529	6.399	3.032	2.279
3.021	2.225	5.694	3.102	4.324	4.009	14.319	8.462	8.653	6.182
4.766	5.062	2.347	0.466	1.91					
1.253	2.385	2.472	2.495	2.654					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.15

Target Absent					Target Present				
<b>5.694</b>	4.254	2.577	1.791	0.999	<b>14.319</b>	<b>9.49</b>	<b>6.399</b>	<b>5.174</b>	3.907
<b>5.688</b>	4.123	2.495	1.727	0.904	<b>14.052</b>	<b>8.887</b>	<b>6.258</b>	<b>5.155</b>	3.723
5.062	3.91	2.472	1.566	0.862	<b>12.33</b>	<b>8.653</b>	<b>6.182</b>	4.719	3.456
4.962	3.102	2.385	1.312	0.793	<b>12.265</b>	<b>8.462</b>	<b>5.84</b>	4.173	3.032
4.806	3.021	2.347	1.253	0.783	<b>11.529</b>	<b>7.415</b>	<b>5.414</b>	4.009	2.461
4.766	2.877	2.225	1.212	0.782	<b>10.135</b>	<b>6.974</b>	<b>5.347</b>	3.977	2.279
4.637	2.793	1.91	1.16	0.466					
4.324	2.654	1.83	1.145	0.161					

Number of samples above threshold = 2

Number of samples above threshold = 20

False Alarm rate : 2 in 40

Miss rate : 10 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 5.15

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.15**

Probability of correct TARGET detection (sensitivity) = 0.66667

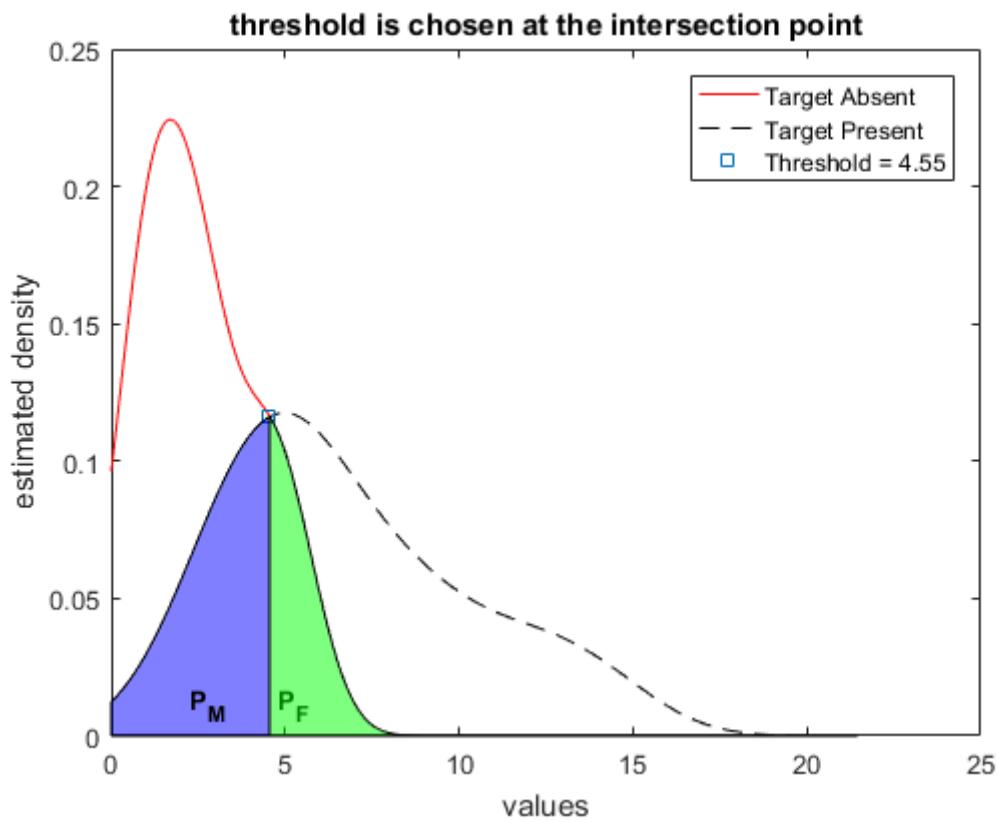
**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.95

**Probability of False Alarm = 1 - specificity = 0.05**

**Positive Predictive Value (PPV) = a posteriori probability = 0.90909**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 4.55**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.694	4.254	2.577	1.791	0.999	14.319	9.49	6.399	5.174	3.907
5.688	4.123	2.495	1.727	0.904	14.052	8.887	6.258	5.155	3.723
5.062	3.91	2.472	1.566	0.862	12.33	8.653	6.182	4.719	3.456
4.962	3.102	2.385	1.312	0.793	12.265	8.462	5.84	4.173	3.032
4.806	3.021	2.347	1.253	0.783	11.529	7.415	5.414	4.009	2.461
4.766	2.877	2.225	1.212	0.782	10.135	6.974	5.347	3.977	2.279
4.637	2.793	1.91	1.16	0.466					
4.324	2.654	1.83	1.145	0.161					

Number of samples above threshold = 7

False Alarm rate : 7 in 40

Number of samples above threshold = 21

Miss rate : 9 in 30

(c) P. M. Shankar

## Summary of the analysis Traore

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.55**

Probability of correct TARGET detection (sensitivity) = 0.7

**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.825

**Probability of False Alarm = 1 - specificity = 0.175**

**Positive Predictive Value (PPV) = a posteriori probability = 0.75**

Overall Accuracy = 0.77143

### Confusion Matrix (Threshold Value = 4.55)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	7	33	40
Target Present	21	9	30
Total Counts	28	42	70

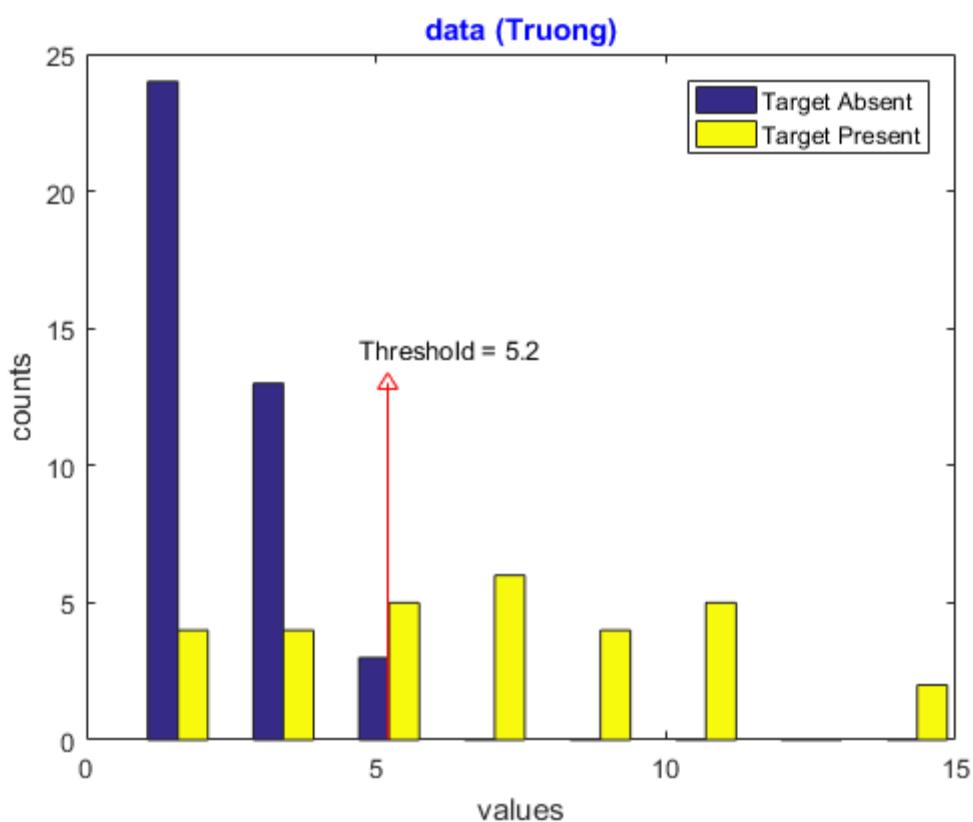
$$P_F = \frac{7}{40} \quad P_M = \frac{3}{10} \quad PPV = \frac{3}{4} \quad \text{err} = \frac{8}{35} \quad \text{acc} = \frac{27}{35}$$

## Summary of the analysis Traore

data (Truong)

Target Absent					Target Present				
4.16	2.209	2.089	2.56	4.564	11.163	4.843	9.957	14.58	6.162
1.163	0.914	4.011	3.377	1.354	3.606	11.479	10.433	1.203	5.738
2.838	2.179	3.059	4.787	2.286	9.392	5.904	7.925	1.967	8.033
3.954	4.23	2.737	1.836	1.274	3.477	9.601	1.94	3.946	7.372
0.961	2.321	3.918	2.993	1.315	6.635	4.466	5.997	3.769	7.662
1.333	5.297	2.353	0.913	2.565	10.503	6.214	8.177	1.138	15.244
2.317	2.168	0.699	0.669	2.114					
1.964	3.644	1.378	0.84	1.777					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5.2

	Target Absent					Target Present				
<b>5.297</b>	3.644	2.353	2.089	1.274		<b>15.244</b>	<b>9.957</b>	<b>7.662</b>	<b>5.904</b>	3.606
4.787	3.377	2.321	1.964	1.163		<b>14.58</b>	<b>9.601</b>	<b>7.372</b>	<b>5.738</b>	3.477
4.564	3.059	2.317	1.836	0.961		<b>11.479</b>	<b>9.392</b>	<b>6.635</b>	4.843	1.967
4.23	2.993	2.286	1.777	0.914		<b>11.163</b>	<b>8.177</b>	<b>6.214</b>	4.466	1.94
4.16	2.838	2.209	1.378	0.913		<b>10.503</b>	<b>8.033</b>	<b>6.162</b>	3.946	1.203
4.011	2.737	2.179	1.354	0.84		<b>10.433</b>	<b>7.925</b>	<b>5.997</b>	3.769	1.138
3.954	2.565	2.168	1.333	0.699						
3.918	2.56	2.114	1.315	0.669						

**Number of samples above threshold = 1**

**Number of samples above threshold = 20**

False Alarm rate : 1 in 40

Miss rate : 10 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 5.2

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5.2**

Probability of correct TARGET detection (sensitivity) = 0.66667

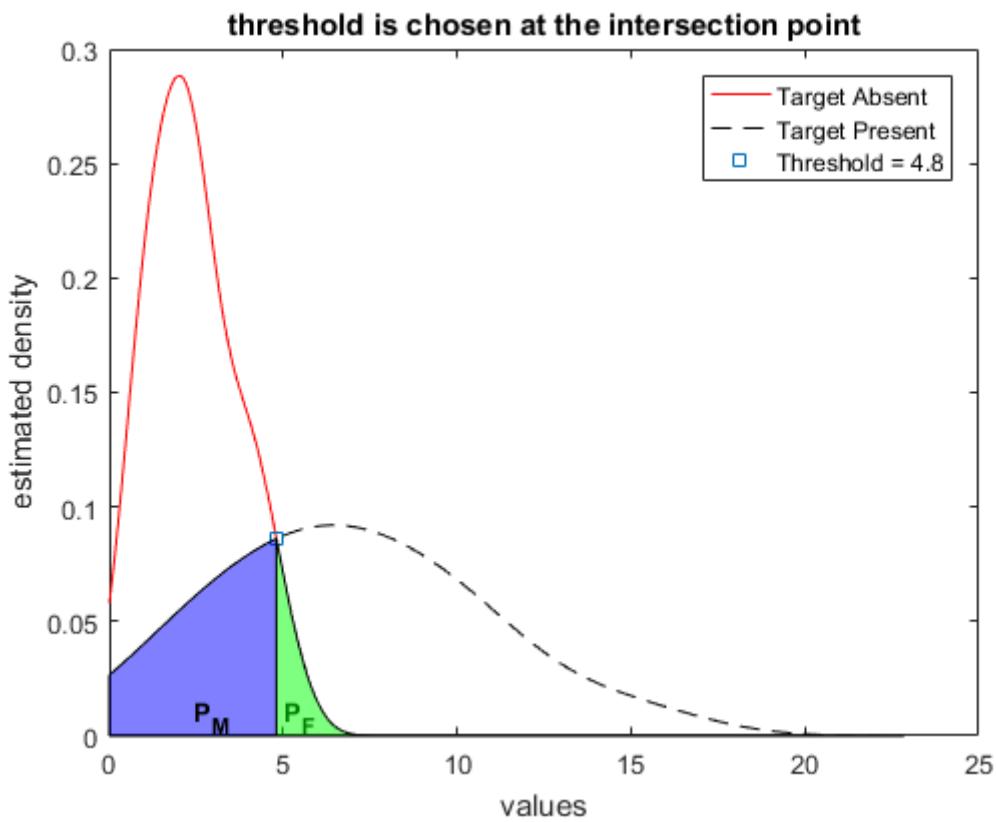
**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95238**

Overall Accuracy = 0.84286



**Sorted and Partitioned Data : Threshold at 4.8**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.297	3.644	2.353	2.089	1.274	15.244	9.957	7.662	5.904	3.606
4.787	3.377	2.321	1.964	1.163	14.58	9.601	7.372	5.738	3.477
4.564	3.059	2.317	1.836	0.961	11.479	9.392	6.635	4.843	1.967
4.23	2.993	2.286	1.777	0.914	11.163	8.177	6.214	4.466	1.94
4.16	2.838	2.209	1.378	0.913	10.503	8.033	6.162	3.946	1.203
4.011	2.737	2.179	1.354	0.84	10.433	7.925	5.997	3.769	1.138
3.954	2.565	2.168	1.333	0.699					
3.918	2.56	2.114	1.315	0.669					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 21**

Miss rate : 9 in 30

(c) P. M. Shankar

## Summary of the analysis Truong

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.8**

Probability of correct TARGET detection (sensitivity) = 0.7

**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95455**

Overall Accuracy = 0.85714

### Confusion Matrix (Threshold Value = 4.8)

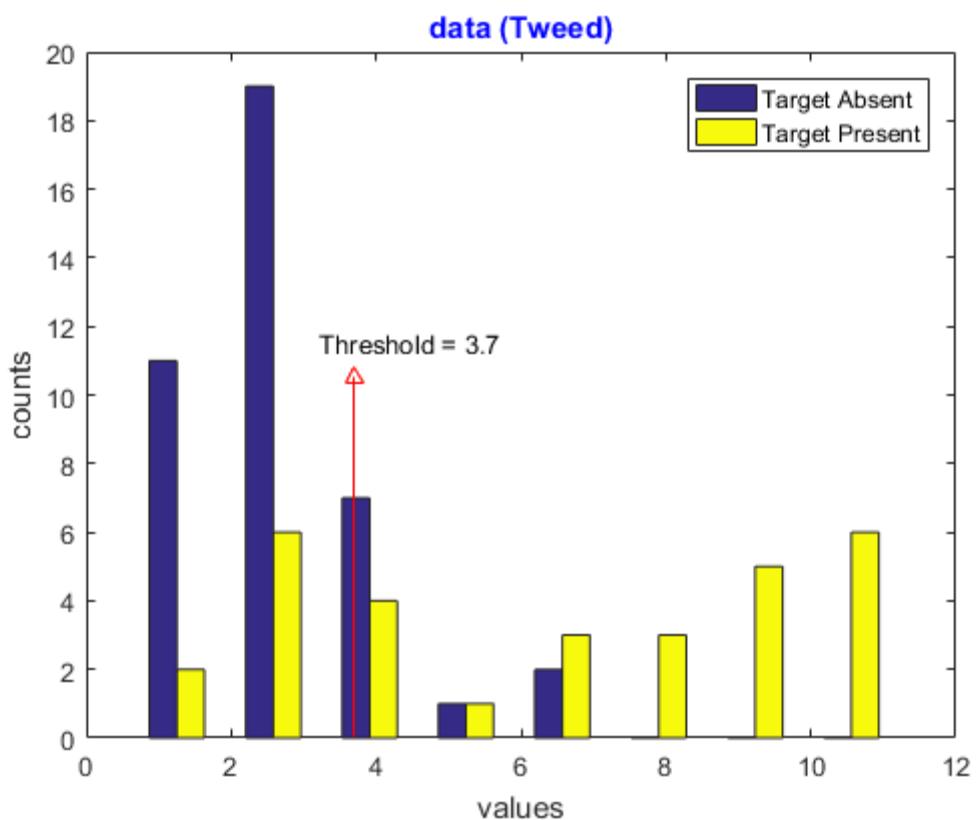
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	21	9	30
Total Counts	22	48	70

$$P_F = \frac{1}{40} \quad P_M = \frac{3}{10} \quad PPV = \frac{21}{22} \quad \text{err} = \frac{1}{7} \quad \text{acc} = \frac{6}{7}$$

## Summary of the analysis Truong

data (Tweed)									
Target Absent					Target Present				
4.519	3.079	2.513	7.124	2.548	1.461	8.513	3.015	4.551	11.225
0.959	1.241	3.326	1.165	0.587	9.152	2.884	1.569	3.059	10.175
1.954	3.054	2.761	1.614	2.721	2.498	10.139	6.567	9.092	2.956
2.863	2.157	2.101	0.638	1.873	8.842	3.371	7.715	6.999	6.112
5.952	2.737	2.286	3.438	1.251	9.044	7.539	4.673	11.056	10.202
2.382	5.222	4.074	1.752	2.137	8.954	3.497	3.685	2.585	10.689
1.924	1.797	2.84	1.175	4.301					
2.982	2.502	3.893	4.143	3.014					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 3.7

Target Absent					Target Present				
<b>7.124</b>	3.438	2.761	2.157	1.614	<b>11.225</b>	<b>9.152</b>	<b>7.715</b>	<b>4.551</b>	2.956
<b>5.952</b>	3.326	2.737	2.137	1.251	<b>11.056</b>	<b>9.092</b>	<b>7.539</b>	3.685	2.884
<b>5.222</b>	3.079	2.721	2.101	1.241	<b>10.689</b>	<b>9.044</b>	<b>6.999</b>	3.497	2.585
<b>4.519</b>	3.054	2.548	1.954	1.175	<b>10.202</b>	<b>8.954</b>	<b>6.567</b>	3.371	2.498
<b>4.301</b>	3.014	2.513	1.924	1.165	<b>10.175</b>	<b>8.842</b>	<b>6.112</b>	3.059	1.569
<b>4.143</b>	2.982	2.502	1.873	0.959	<b>10.139</b>	<b>8.513</b>	<b>4.673</b>	3.015	1.461
<b>4.074</b>	2.863	2.382	1.797	0.638					
<b>3.893</b>	2.84	2.286	1.752	0.587					

Number of samples above threshold = 8

Number of samples above threshold = 19

False Alarm rate : 8 in 40

Miss rate : 11 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 3.7

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.7**

Probability of correct TARGET detection (sensitivity) = 0.63333

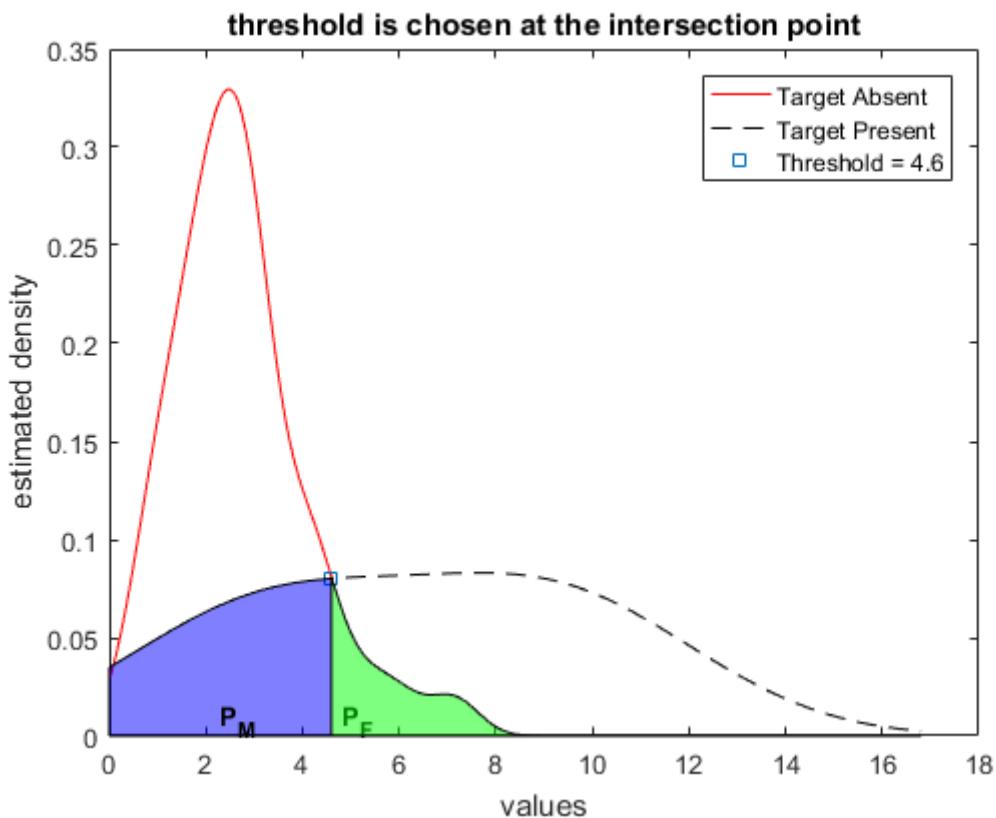
**Probability of Miss = 1 - sensitivity = 0.36667**

Probability of correct NO TARGET detection (specificity) = 0.8

**Probability of False Alarm = 1 - specificity = 0.2**

**Positive Predictive Value (PPV) = a posteriori probability = 0.7037**

Overall Accuracy = 0.72857



**Sorted and Partitioned Data : Threshold at 4.6**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
7.124	3.438	2.761	2.157	1.614	11.225	9.152	7.715	4.551	2.956
5.952	3.326	2.737	2.137	1.251	11.056	9.092	7.539	3.685	2.884
5.222	3.079	2.721	2.101	1.241	10.689	9.044	6.999	3.497	2.585
4.519	3.054	2.548	1.954	1.175	10.202	8.954	6.567	3.371	2.498
4.301	3.014	2.513	1.924	1.165	10.175	8.842	6.112	3.059	1.569
4.143	2.982	2.502	1.873	0.959	10.139	8.513	4.673	3.015	1.461
4.074	2.863	2.382	1.797	0.638					
3.893	2.84	2.286	1.752	0.587					

**Number of samples above threshold = 3**

False Alarm rate : 3 in 40

**Number of samples above threshold = 18**

Miss rate : 12 in 30

**(c) P. M. Shankar**

## Summary of the analysis Tweed

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.6**

Probability of correct TARGET detection (sensitivity) = 0.6

**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.85714**

Overall Accuracy = 0.78571

### Confusion Matrix (Threshold Value = 4.6)

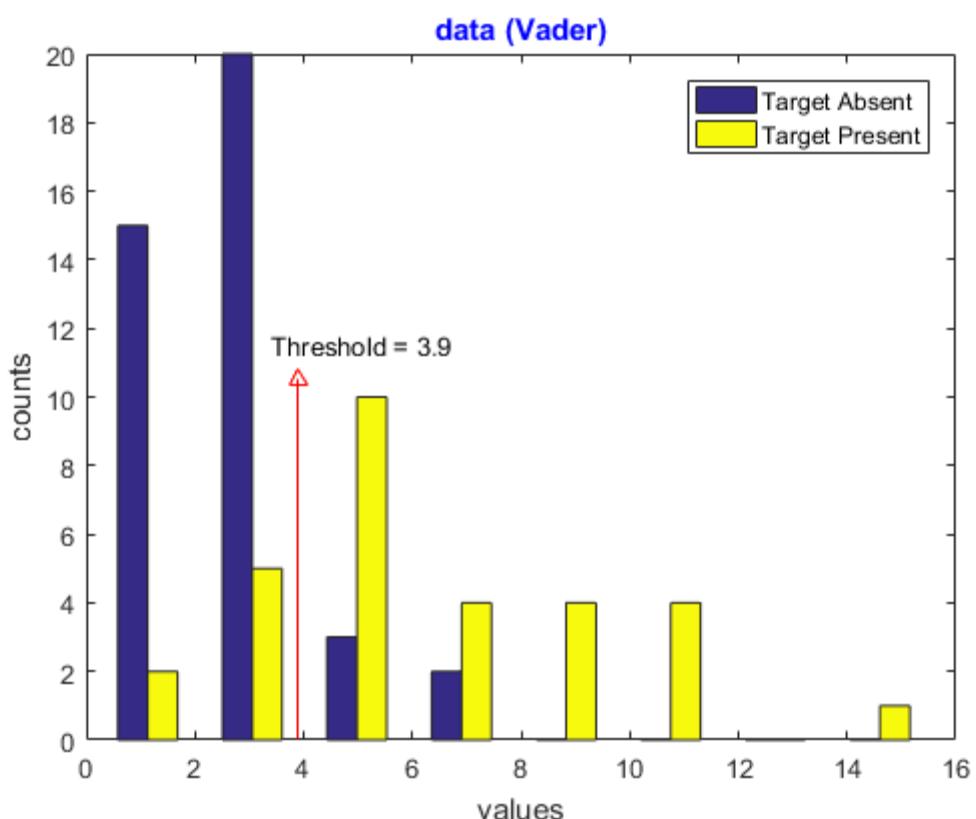
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	18	12	30
Total Counts	21	49	70

$$P_F = \frac{3}{40} \quad P_M = \frac{2}{5} \quad \text{PPV} = \frac{6}{7} \quad \text{err} = \frac{3}{14} \quad \text{acc} = \frac{11}{14}$$

## Summary of the analysis Tweed

data (Vader)									
Target Absent					Target Present				
3.19	2.948	2.381	1.487	3.459	6.823	9.313	4.689	11.396	3.669
1.596	0.716	2.833	0.644	1.41	1.687	9.613	3.129	0.95	5.468
1.336	2.533	6.248	1.432	5.95	5.214	11.013	11.257	4.119	2.685
2.113	3.166	3.327	3.679	3.893	5.872	4.916	5.097	4.025	2.3
2.589	1.446	1.827	2.503	3.274	4.322	15.567	9.669	10.351	7.175
5.073	0.169	1.634	3.244	2.807	8.251	4.371	3.02	7.791	7.556
1.561	3.881	5.71	1.389	1.52					
2.576	2.938	2.789	5.375	1.123					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 3.9

Target Absent					Target Present				
<b>6.248</b>	3.459	2.833	2.113	1.432	<b>15.567</b>	<b>9.613</b>	<b>6.823</b>	<b>4.689</b>	3.129
<b>5.95</b>	3.327	2.807	1.827	1.41	<b>11.396</b>	<b>9.313</b>	<b>5.872</b>	<b>4.371</b>	3.02
<b>5.71</b>	3.274	2.789	1.634	1.389	<b>11.257</b>	<b>8.251</b>	<b>5.468</b>	<b>4.322</b>	2.685
<b>5.375</b>	3.244	2.589	1.596	1.336	<b>11.013</b>	<b>7.791</b>	<b>5.214</b>	<b>4.119</b>	2.3
<b>5.073</b>	3.19	2.576	1.561	1.123	<b>10.351</b>	<b>7.556</b>	<b>5.097</b>	<b>4.025</b>	1.687
3.893	3.166	2.533	1.52	0.716	<b>9.669</b>	<b>7.175</b>	<b>4.916</b>	3.669	0.95
3.881	2.948	2.503	1.487	0.644					
3.679	2.938	2.381	1.446	0.169					

Number of samples above threshold = 5

Number of samples above threshold = 23

False Alarm rate : 5 in 40

Miss rate : 7 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 3.9

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.9**

Probability of correct TARGET detection (sensitivity) = 0.76667

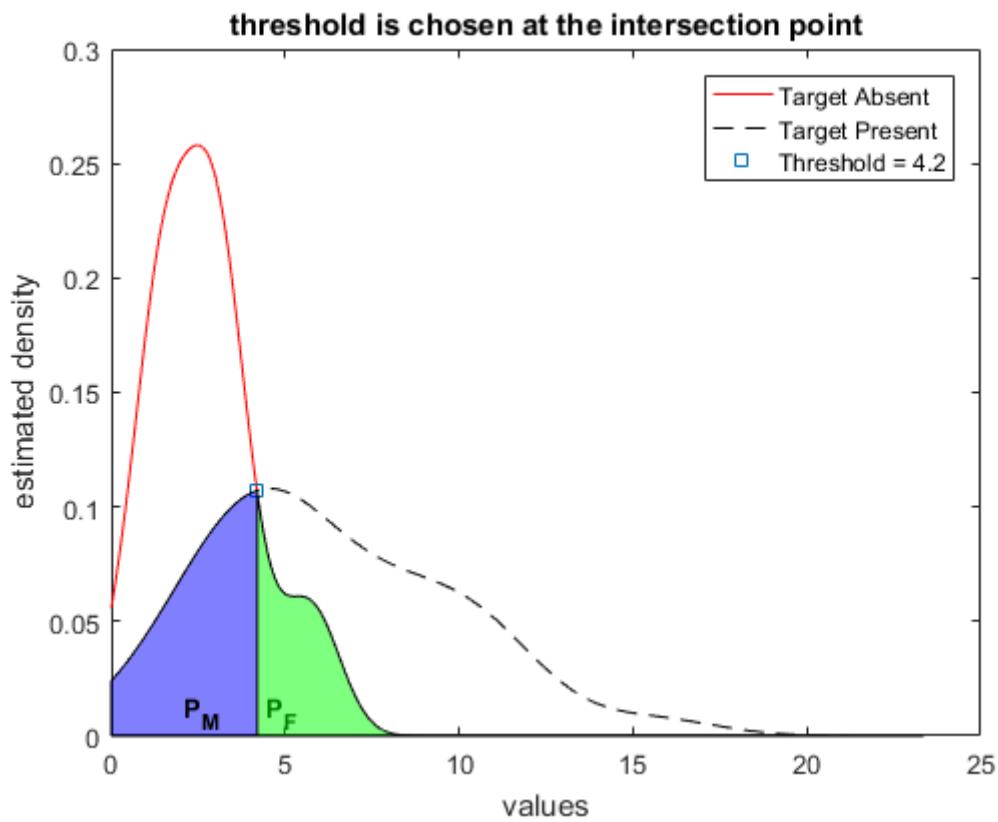
**Probability of Miss = 1 - sensitivity = 0.23333**

Probability of correct NO TARGET detection (specificity) = 0.875

**Probability of False Alarm = 1 - specificity = 0.125**

**Positive Predictive Value (PPV) = a posteriori probability = 0.82143**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 4.2**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
6.248	3.459	2.833	2.113	1.432	15.567	9.613	6.823	4.689	3.129
5.95	3.327	2.807	1.827	1.41	11.396	9.313	5.872	4.371	3.02
5.71	3.274	2.789	1.634	1.389	11.257	8.251	5.468	4.322	2.685
5.375	3.244	2.589	1.596	1.336	11.013	7.791	5.214	4.119	2.3
5.073	3.19	2.576	1.561	1.123	10.351	7.556	5.097	4.025	1.687
3.893	3.166	2.533	1.52	0.716	9.669	7.175	4.916	3.669	0.95
3.881	2.948	2.503	1.487	0.644					
3.679	2.938	2.381	1.446	0.169					

**Number of samples above threshold = 5**

False Alarm rate : 5 in 40

**Number of samples above threshold = 21**

Miss rate : 9 in 30

(c) P. M. Shankar

## Summary of the analysis

### Vader

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.2**

Probability of correct TARGET detection (sensitivity) = 0.7

**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.875

**Probability of False Alarm = 1 - specificity = 0.125**

**Positive Predictive Value (PPV) = a posteriori probability = 0.80769**

Overall Accuracy = 0.8

### Confusion Matrix (Threshold Value = 4.2)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	5	35	40
Target Present	21	9	30
Total Counts	26	44	70

$$P_F = \frac{1}{8} \quad P_M = \frac{3}{10} \quad \text{PPV} = \frac{21}{26} \quad \text{err} = \frac{1}{5} \quad \text{acc} = \frac{4}{5}$$

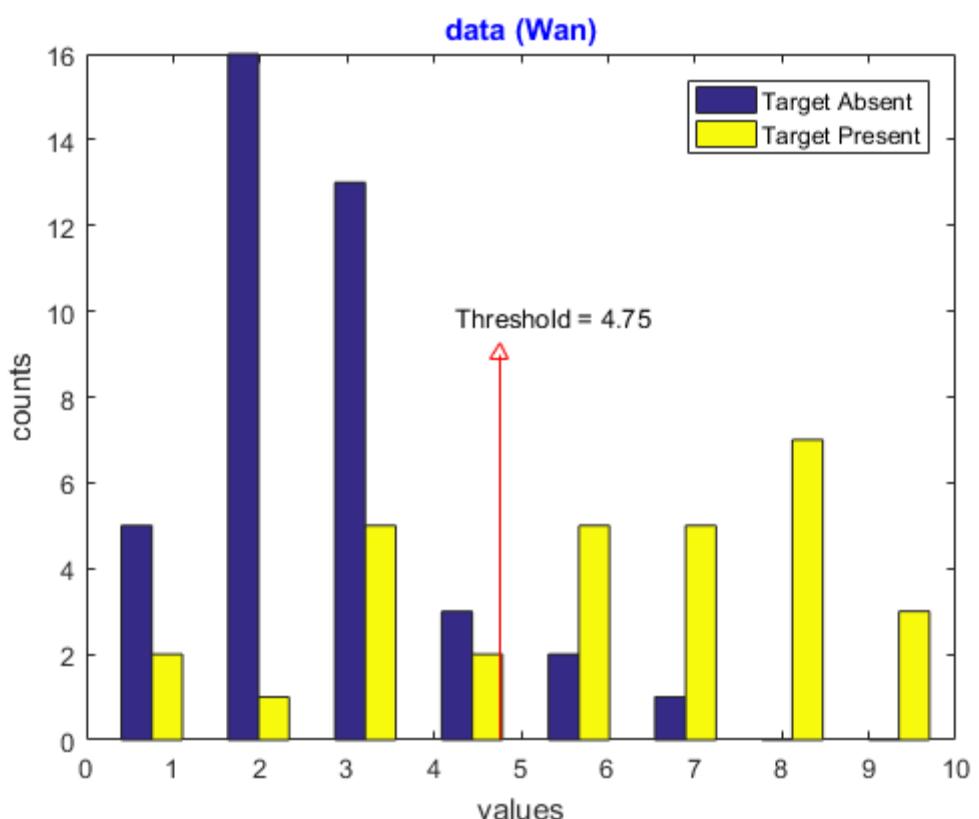
## Summary of the analysis

### Vader

data (Wan)

Target Absent					Target Present				
5.72	2.106	6.374	3.763	1.68	6.669	9.961	5.47	7.038	6.253
3.185	3.761	3.427	2.023	5.321	1.105	2.079	4.884	8.054	3.704
3.631	1.532	1.808	0.582	4.627	4.116	3.504	3.376	6.475	9.199
0.141	2.579	1.344	1.741	3.515	1.047	8.627	2.677	5.796	7.088
1.157	2.236	2.825	3.548	2.469	6.052	6.845	7.531	8.598	5.629
2.964	1.276	2.405	2.026	1.639	8.181	9.258	8.565	3.586	8.364
1.678	4.325	2.279	3.139	1.456					
3.916	3.458	3.005	3.032	1.681					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.75

	Target Absent					Target Present				
<b>6.374</b>	3.631	3.005	2.106	1.639		<b>9.961</b>	<b>8.364</b>	<b>6.845</b>	<b>5.629</b>	3.504
<b>5.72</b>	3.548	2.964	2.026	1.532		<b>9.258</b>	<b>8.181</b>	<b>6.669</b>	<b>5.47</b>	3.376
<b>5.321</b>	3.515	2.825	2.023	1.456		<b>9.199</b>	<b>8.054</b>	<b>6.475</b>	<b>4.884</b>	2.677
4.627	3.458	2.579	1.808	1.344		<b>8.627</b>	<b>7.531</b>	<b>6.253</b>	4.116	2.079
4.325	3.427	2.469	1.741	1.276		<b>8.598</b>	<b>7.088</b>	<b>6.052</b>	3.704	1.105
3.916	3.185	2.405	1.681	1.157		<b>8.565</b>	<b>7.038</b>	<b>5.796</b>	3.586	1.047
3.763	3.139	2.279	1.68	0.582						
3.761	3.032	2.236	1.678	0.141						

**Number of samples above threshold = 3**

**Number of samples above threshold = 21**

False Alarm rate : 3 in 40

Miss rate : 9 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 4.75

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.75**

Probability of correct TARGET detection (sensitivity) = 0.7

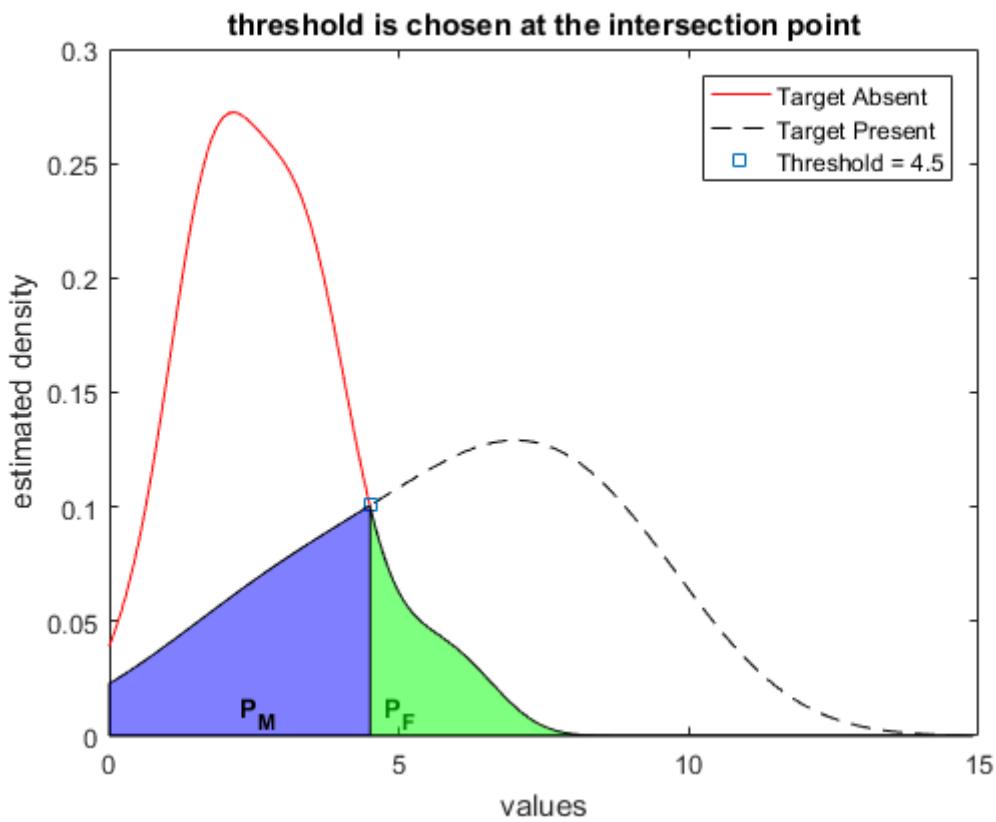
**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.875**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 4.5**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
<b>6.374</b>	3.631	3.005	2.106	1.639	<b>9.961</b>	<b>8.364</b>	<b>6.845</b>	<b>5.629</b>	3.504
<b>5.72</b>	3.548	2.964	2.026	1.532	<b>9.258</b>	<b>8.181</b>	<b>6.669</b>	<b>5.47</b>	3.376
<b>5.321</b>	3.515	2.825	2.023	1.456	<b>9.199</b>	<b>8.054</b>	<b>6.475</b>	<b>4.884</b>	2.677
<b>4.627</b>	3.458	2.579	1.808	1.344	<b>8.627</b>	<b>7.531</b>	<b>6.253</b>	4.116	2.079
4.325	3.427	2.469	1.741	1.276	<b>8.598</b>	<b>7.088</b>	<b>6.052</b>	3.704	1.105
3.916	3.185	2.405	1.681	1.157	<b>8.565</b>	<b>7.038</b>	<b>5.796</b>	3.586	1.047
3.763	3.139	2.279	1.68	0.582					
3.761	3.032	2.236	1.678	0.141					

Number of samples above threshold = 4

Number of samples above threshold = 21

False Alarm rate : 4 in 40

Miss rate : 9 in 30

(c) P. M. Shankar

## Summary of the analysis Wan

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.5**

Probability of correct TARGET detection (sensitivity) = 0.7

**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.9

**Probability of False Alarm = 1 - specificity = 0.1**

**Positive Predictive Value (PPV) = a posteriori probability = 0.84**

Overall Accuracy = 0.81429

### Confusion Matrix (Threshold Value = 4.5)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	4	36	40
Target Present	21	9	30
Total Counts	25	45	70

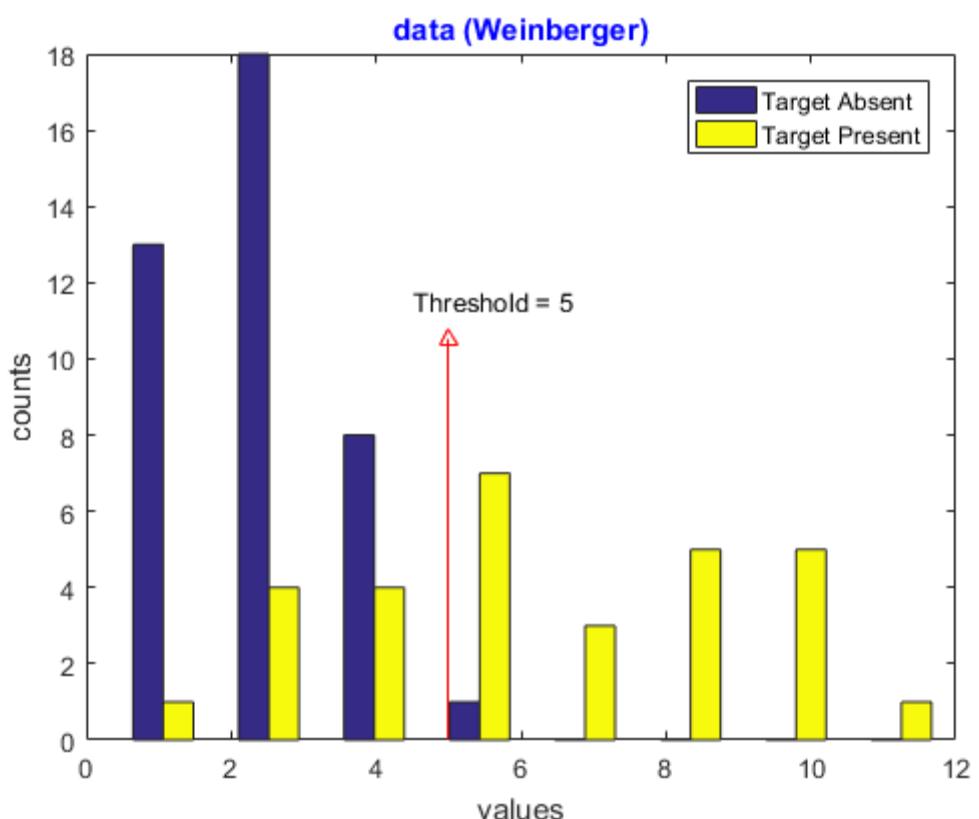
$$P_F = \frac{1}{10} \quad P_M = \frac{3}{10} \quad PPV = \frac{21}{25} \quad \text{err} = \frac{13}{70} \quad \text{acc} = \frac{57}{70}$$

## Summary of the analysis Wan

**data (Weinberger)**

Target Absent					Target Present				
2.004	3.712	3.434	2.898	1.533	9.502	7.306	11.978	8.523	8.039
1.781	1.864	2.187	1.659	4.112	8.251	6.888	4.025	9.433	5.575
3.49	2.213	2.504	2.915	1.565	0.513	9.274	4.387	1.962	9.988
3.817	2.909	4.035	1.346	5.672	8.603	5.243	3.241	6.851	4.988
2.388	2.724	2.702	2.058	0.455	7.927	2.297	5.605	5.46	3.619
0.381	3.007	0.335	2.623	2.791	2.52	9.865	4.216	5.144	5.917
2.381	0.433	0.944	1.711	4.173					
0.472	1.405	2.087	3.466	1.863					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 5

Target Absent					Target Present				
<b>5.672</b>	3.434	2.623	2.004	1.405	<b>11.978</b>	<b>8.603</b>	<b>6.888</b>	<b>5.243</b>	3.619
4.173	3.007	2.504	1.864	1.346	<b>9.988</b>	<b>8.523</b>	<b>6.851</b>	<b>5.144</b>	3.241
4.112	2.915	2.388	1.863	0.944	<b>9.865</b>	<b>8.251</b>	<b>5.917</b>	4.988	2.52
4.035	2.909	2.381	1.781	0.472	<b>9.502</b>	<b>8.039</b>	<b>5.605</b>	4.387	2.297
3.817	2.898	2.213	1.711	0.455	<b>9.433</b>	<b>7.927</b>	<b>5.575</b>	4.216	1.962
3.712	2.791	2.187	1.659	0.433	<b>9.274</b>	<b>7.306</b>	<b>5.46</b>	4.025	0.513
3.49	2.724	2.087	1.565	0.381					
3.466	2.702	2.058	1.533	0.335					

**Number of samples above threshold = 1**

**Number of samples above threshold = 20**

False Alarm rate : 1 in 40

Miss rate : 10 in 30

**(c) P. M. Shankar**

### Sorted and Partitioned Data : Threshold at 5

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 5**

Probability of correct TARGET detection (sensitivity) = 0.66667

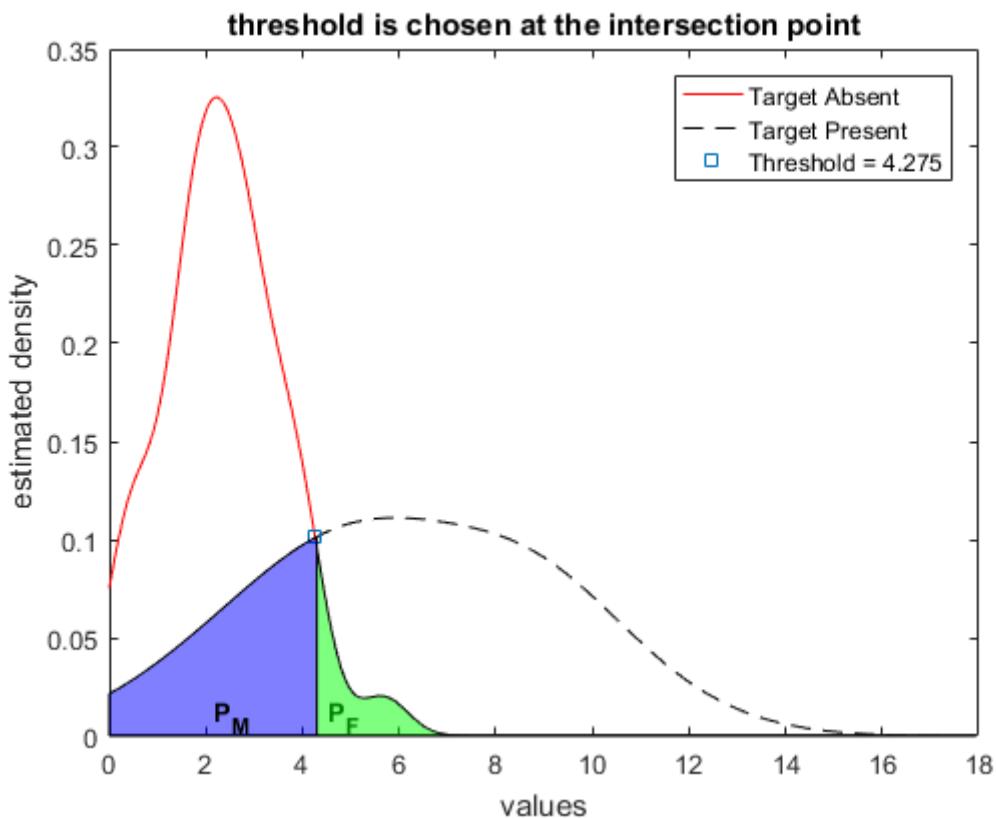
**Probability of Miss = 1 - sensitivity = 0.33333**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95238**

Overall Accuracy = 0.84286



**Sorted and Partitioned Data : Threshold at 4.275**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.672	3.434	2.623	2.004	1.405	11.978	8.603	6.888	5.243	3.619
4.173	3.007	2.504	1.864	1.346	9.988	8.523	6.851	5.144	3.241
4.112	2.915	2.388	1.863	0.944	9.865	8.251	5.917	4.988	2.52
4.035	2.909	2.381	1.781	0.472	9.502	8.039	5.605	4.387	2.297
3.817	2.898	2.213	1.711	0.455	9.433	7.927	5.575	4.216	1.962
3.712	2.791	2.187	1.659	0.433	9.274	7.306	5.46	4.025	0.513
3.49	2.724	2.087	1.565	0.381					
3.466	2.702	2.058	1.533	0.335					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 22**

Miss rate : 8 in 30

(c) P. M. Shankar

## Summary of the analysis Weinberger

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.275**

Probability of correct TARGET detection (sensitivity) = 0.73333

**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95652**

Overall Accuracy = 0.87143

### Confusion Matrix (Threshold Value = 4.275)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	22	8	30
Total Counts	23	47	70

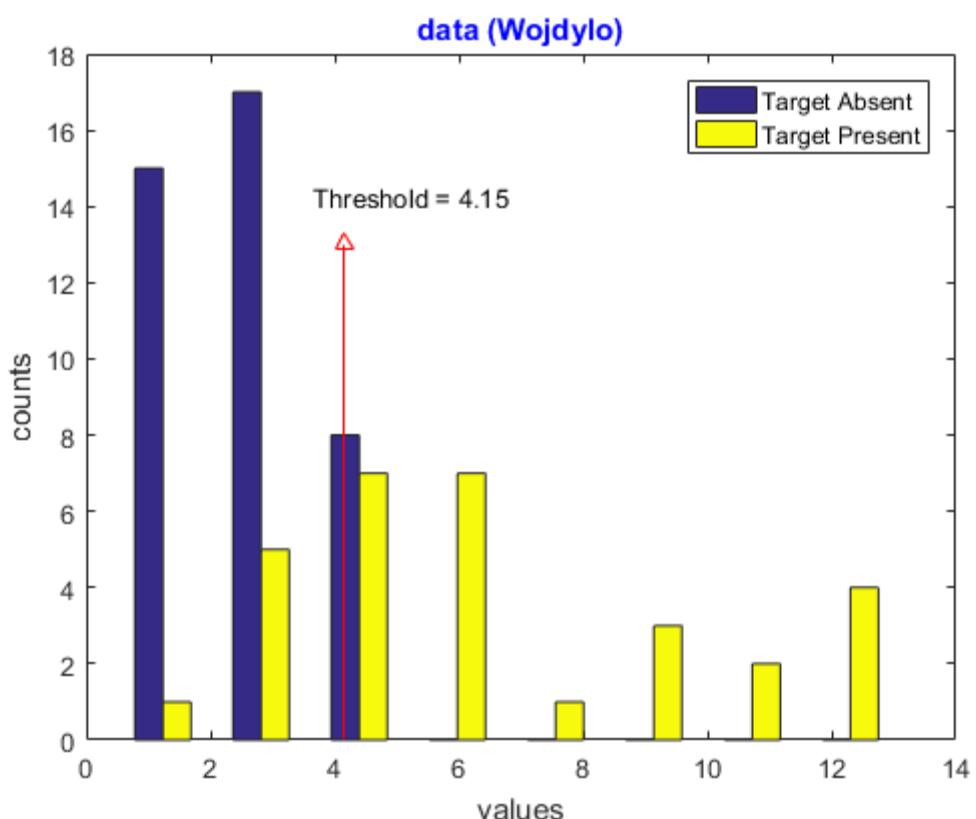
$$P_F = \frac{1}{40} \quad P_M = \frac{4}{15} \quad PPV = \frac{22}{23} \quad \text{err} = \frac{9}{70} \quad \text{acc} = \frac{61}{70}$$

## Summary of the analysis Weinberger

data (Wojdylo)

Target Absent					Target Present				
1.821	1.267	2.996	4.447	1.143	4.203	4.192	12.822	13.092	6.199
1.969	1.416	2.217	1.729	4.376	5.619	1.487	10.924	2.302	6.337
2.572	1.933	3.634	2.365	4.132	4.511	8.117	6.307	4.109	9.364
3.108	1.637	0.679	2.033	2.733	6.284	5.601	6.158	11.909	2.227
1.505	3.497	2.822	2.843	2.158	9.359	2.916	4.996	10.67	3.315
1.945	2.35	3.244	2.149	0.966	2.947	3.983	8.735	12.424	3.919
4.043	1.986	4.085	4.207	2.908					
2.363	2.084	1.946	0.442	3.725					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 4.15

Target Absent					Target Present				
<b>4.447</b>	3.497	2.572	2.033	1.637	<b>13.092</b>	<b>9.364</b>	<b>6.284</b>	<b>4.511</b>	3.315
<b>4.376</b>	3.244	2.365	1.986	1.505	<b>12.822</b>	<b>9.359</b>	<b>6.199</b>	<b>4.203</b>	2.947
<b>4.207</b>	3.108	2.363	1.969	1.416	<b>12.424</b>	<b>8.735</b>	<b>6.158</b>	<b>4.192</b>	2.916
4.132	2.996	2.35	1.946	1.267	<b>11.909</b>	<b>8.117</b>	<b>5.619</b>	4.109	2.302
4.085	2.908	2.217	1.945	1.143	<b>10.924</b>	<b>6.337</b>	<b>5.601</b>	3.983	2.227
4.043	2.843	2.158	1.933	0.966	<b>10.67</b>	<b>6.307</b>	<b>4.996</b>	3.919	1.487
3.725	2.822	2.149	1.821	0.679					
3.634	2.733	2.084	1.729	0.442					

Number of samples above threshold = 3

Number of samples above threshold = 21

False Alarm rate : 3 in 40

Miss rate : 9 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 4.15

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.15**

Probability of correct TARGET detection (sensitivity) = 0.7

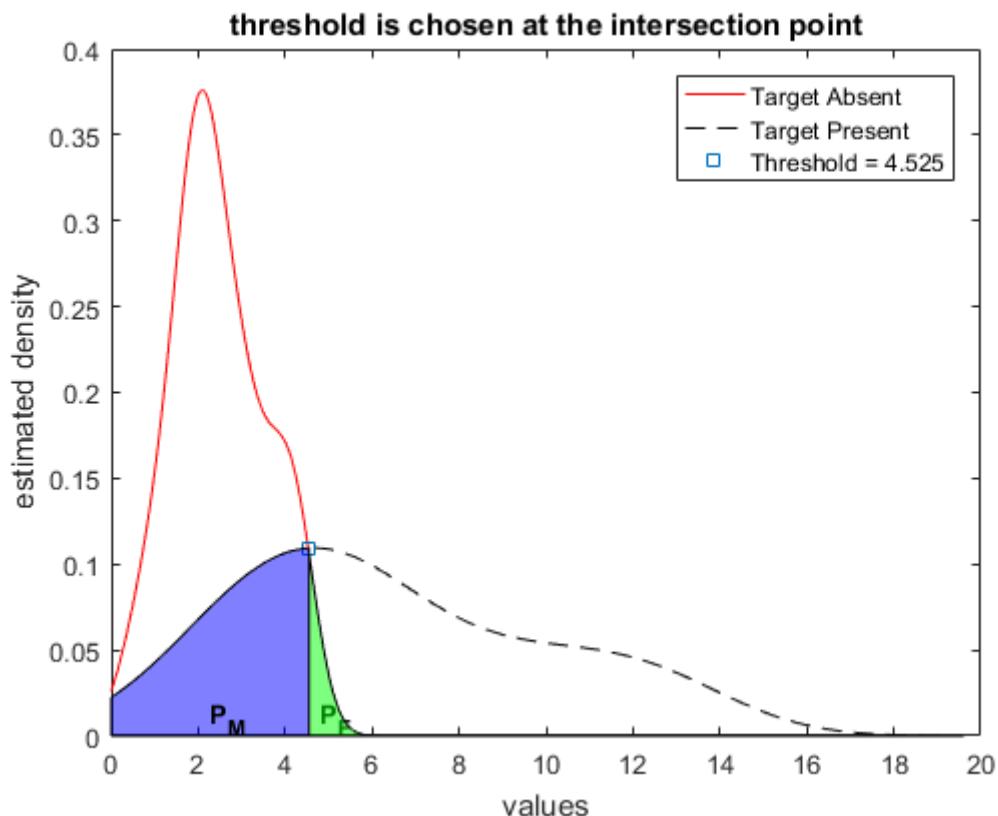
**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.875**

Overall Accuracy = 0.82857



**Sorted and Partitioned Data : Threshold at 4.525**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.447	3.497	2.572	2.033	1.637	<b>13.092</b>	<b>9.364</b>	<b>6.284</b>	4.511	3.315
4.376	3.244	2.365	1.986	1.505	<b>12.822</b>	<b>9.359</b>	<b>6.199</b>	4.203	2.947
4.207	3.108	2.363	1.969	1.416	<b>12.424</b>	<b>8.735</b>	<b>6.158</b>	4.192	2.916
4.132	2.996	2.35	1.946	1.267	<b>11.909</b>	<b>8.117</b>	<b>5.619</b>	4.109	2.302
4.085	2.908	2.217	1.945	1.143	<b>10.924</b>	<b>6.337</b>	<b>5.601</b>	3.983	2.227
4.043	2.843	2.158	1.933	0.966	<b>10.67</b>	<b>6.307</b>	<b>4.996</b>	3.919	1.487
3.725	2.822	2.149	1.821	0.679					
3.634	2.733	2.084	1.729	0.442					

**Number of samples above threshold = 0**

**Number of samples above threshold = 18**

False Alarm rate : 0 in 40

Miss rate : 12 in 30

**(c) P. M. Shankar**

## Summary of the analysis Wojdylo

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.525**

Probability of correct TARGET detection (sensitivity) = 0.6

**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.82857

### Confusion Matrix (Threshold Value = 4.525)

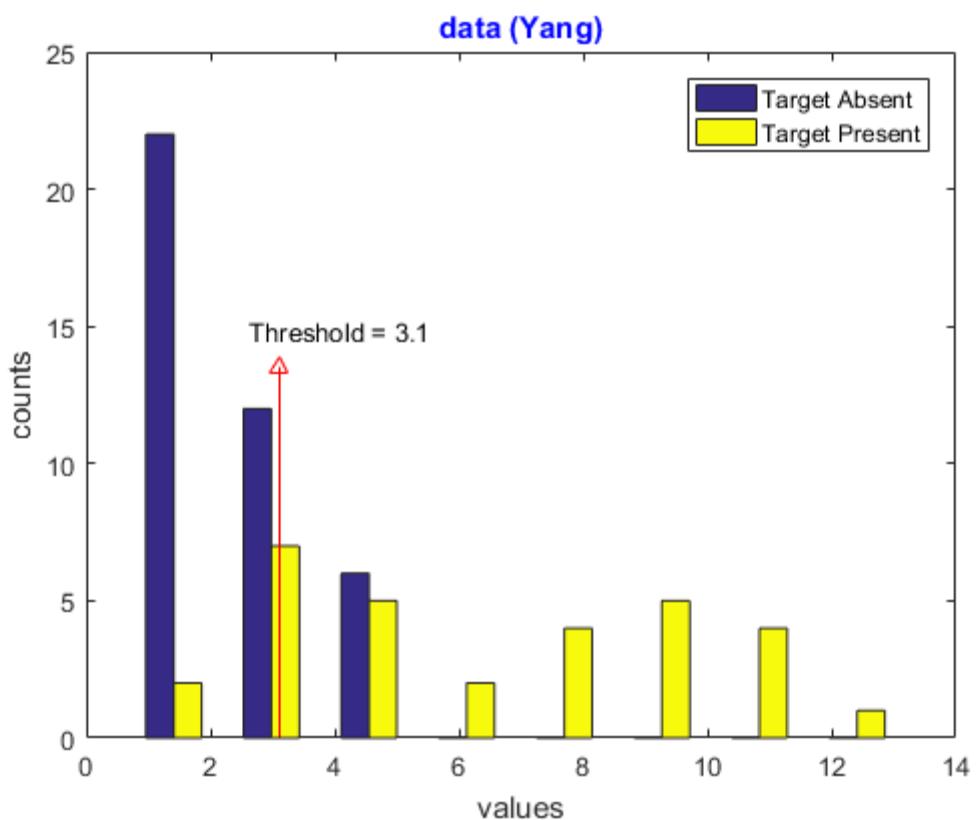
Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	0	40	40
Target Present	18	12	30
Total Counts	18	52	70

$$P_F = 0 \quad P_M = \frac{2}{5} \quad \text{PPV} = 1 \quad \text{err} = \frac{6}{35} \quad \text{acc} = \frac{29}{35}$$

## Summary of the analysis Wojdylo

data (Yang)									
Target Absent					Target Present				
3.602	3.871	4.53	1.33	3.561	7.329	2.214	3.7	4.28	2.625
2.098	1.985	0.624	1.206	1.812	2.669	5.002	6.725	8.79	9.603
1.853	3.106	2.672	1.022	2.598	2.301	4.2	8.552	4.972	2.837
5.149	2.198	1.159	1.746	0.992	2.057	6.046	7.359	8.166	10.611
4.094	2.681	4.926	2.291	5.026	7.576	3.958	13.196	10.6	1.223
1.269	1.62	1.531	0.817	0.835	10.336	2.404	9.588	11.363	9.747
1.422	2.064	1.476	2.738	1.696					
2.154	2.665	1.572	3.056	3.034					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 3.1

Target Absent					Target Present				
<b>5.149</b>	<b>3.106</b>	2.291	1.746	1.269	<b>13.196</b>	<b>9.603</b>	<b>7.359</b>	<b>4.28</b>	2.625
<b>5.026</b>	3.056	2.198	1.696	1.206	<b>11.363</b>	<b>9.588</b>	<b>7.329</b>	<b>4.2</b>	2.404
<b>4.926</b>	3.034	2.154	1.62	1.159	<b>10.611</b>	<b>8.79</b>	<b>6.725</b>	<b>3.958</b>	2.301
<b>4.53</b>	2.738	2.098	1.572	1.022	<b>10.6</b>	<b>8.552</b>	<b>6.046</b>	<b>3.7</b>	2.214
<b>4.094</b>	2.681	2.064	1.531	0.992	<b>10.336</b>	<b>8.166</b>	<b>5.002</b>	2.837	2.057
<b>3.871</b>	2.672	1.985	1.476	0.835	<b>9.747</b>	<b>7.576</b>	<b>4.972</b>	2.669	1.223
<b>3.602</b>	2.665	1.853	1.422	0.817					
<b>3.561</b>	2.598	1.812	1.33	0.624					

Number of samples above threshold = 9

Number of samples above threshold = 22

False Alarm rate : 9 in 40

Miss rate : 8 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 3.1

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.1**

Probability of correct TARGET detection (sensitivity) = 0.73333

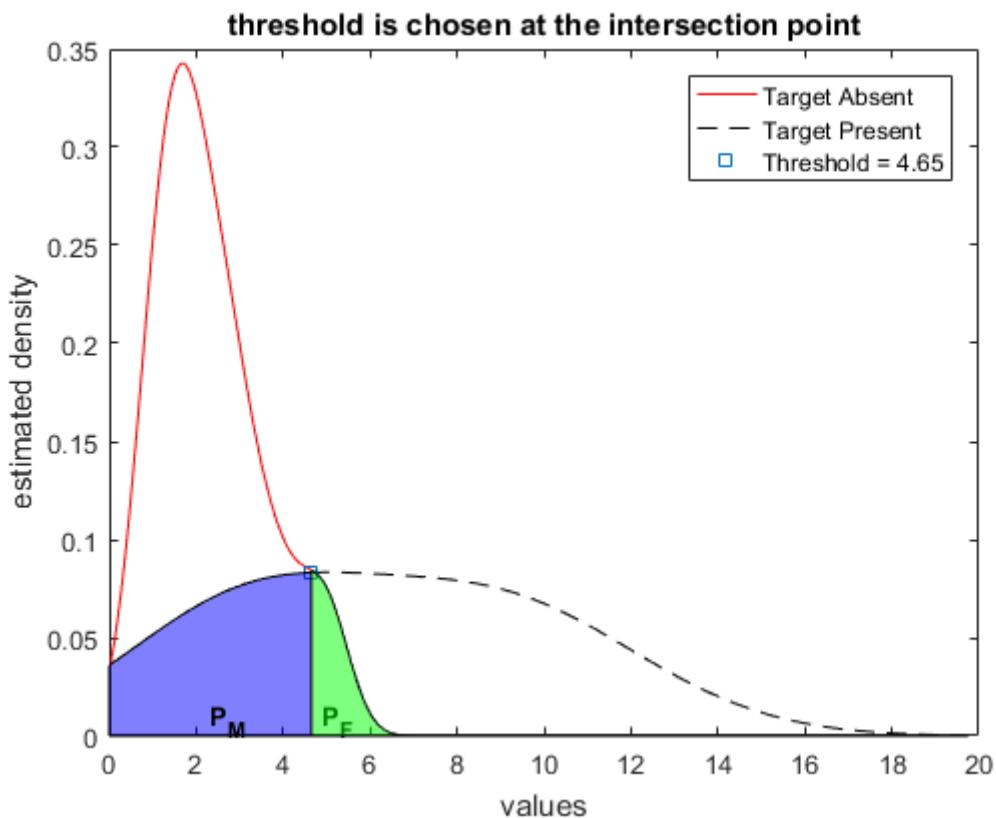
**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.775

**Probability of False Alarm = 1 - specificity = 0.225**

**Positive Predictive Value (PPV) = a posteriori probability = 0.70968**

Overall Accuracy = 0.75714



**Sorted and Partitioned Data : Threshold at 4.65**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.149	3.106	2.291	1.746	1.269	13.196	9.603	7.359	4.28	2.625
5.026	3.056	2.198	1.696	1.206	11.363	9.588	7.329	4.2	2.404
4.926	3.034	2.154	1.62	1.159	10.611	8.79	6.725	3.958	2.301
4.53	2.738	2.098	1.572	1.022	10.6	8.552	6.046	3.7	2.214
4.094	2.681	2.064	1.531	0.992	10.336	8.166	5.002	2.837	2.057
3.871	2.672	1.985	1.476	0.835	9.747	7.576	4.972	2.669	1.223
3.602	2.665	1.853	1.422	0.817					
3.561	2.598	1.812	1.33	0.624					

Number of samples above threshold = 3

Number of samples above threshold = 18

False Alarm rate : 3 in 40

Miss rate : 12 in 30

(c) P. M. Shankar

## Summary of the analysis Yang

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.65**

Probability of correct TARGET detection (sensitivity) = 0.6

**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 0.925

**Probability of False Alarm = 1 - specificity = 0.075**

**Positive Predictive Value (PPV) = a posteriori probability = 0.85714**

Overall Accuracy = 0.78571

### Confusion Matrix (Threshold Value = 4.65)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	3	37	40
Target Present	18	12	30
Total Counts	21	49	70

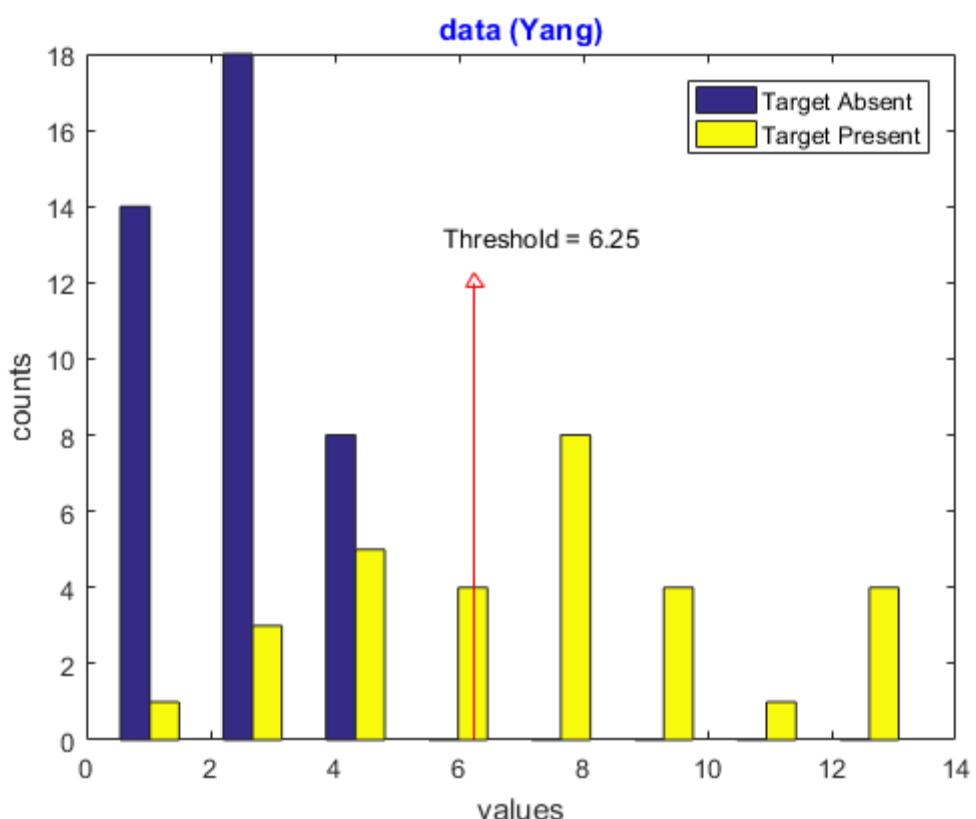
$$P_F = \frac{3}{40} \quad P_M = \frac{2}{5} \quad \text{PPV} = \frac{6}{7} \quad \text{err} = \frac{3}{14} \quad \text{acc} = \frac{11}{14}$$

## Summary of the analysis Yang

data (Yang)

Target Absent					Target Present				
4.579	2.681	1.909	2.367	4.252	8.291	4.247	12.746	5.769	9.869
1.957	4.415	2.874	2.526	1.411	4.417	8.697	7.98	13.321	10.117
5.029	1.29	0.737	0.323	1.412	5.847	2.627	6.961	7.633	10.612
2.632	2.614	2.974	0.381	3.148	4.268	8.821	12.017	3.857	7.231
4.593	3.762	3.341	3.051	0.195	13.436	7.048	1.452	2.251	2.772
2.254	2.939	1.803	0.203	1.688	4.652	8.412	5.601	8.1	5.864
2.962	1.799	4.212	2.897	1.902					
1.652	3.099	3.58	1.034	0.951					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 6.25

Target Absent					Target Present				
5.029	3.341	2.874	1.909	1.29	13.436	9.869	7.98	5.847	4.247
4.593	3.148	2.681	1.902	1.034	13.321	8.821	7.633	5.769	3.857
4.579	3.099	2.632	1.803	0.951	12.746	8.697	7.231	5.601	2.772
4.415	3.051	2.614	1.799	0.737	12.017	8.412	7.048	4.652	2.627
4.252	2.974	2.526	1.688	0.381	10.612	8.291	6.961	4.417	2.251
4.212	2.962	2.367	1.652	0.323	10.117	8.1	5.864	4.268	1.452
3.762	2.939	2.254	1.412	0.203					
3.58	2.897	1.957	1.411	0.195					

Number of samples above threshold = 0

Number of samples above threshold = 17

False Alarm rate : 0 in 40

Miss rate : 13 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 6.25

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 6.25**

Probability of correct TARGET detection (sensitivity) = 0.56667

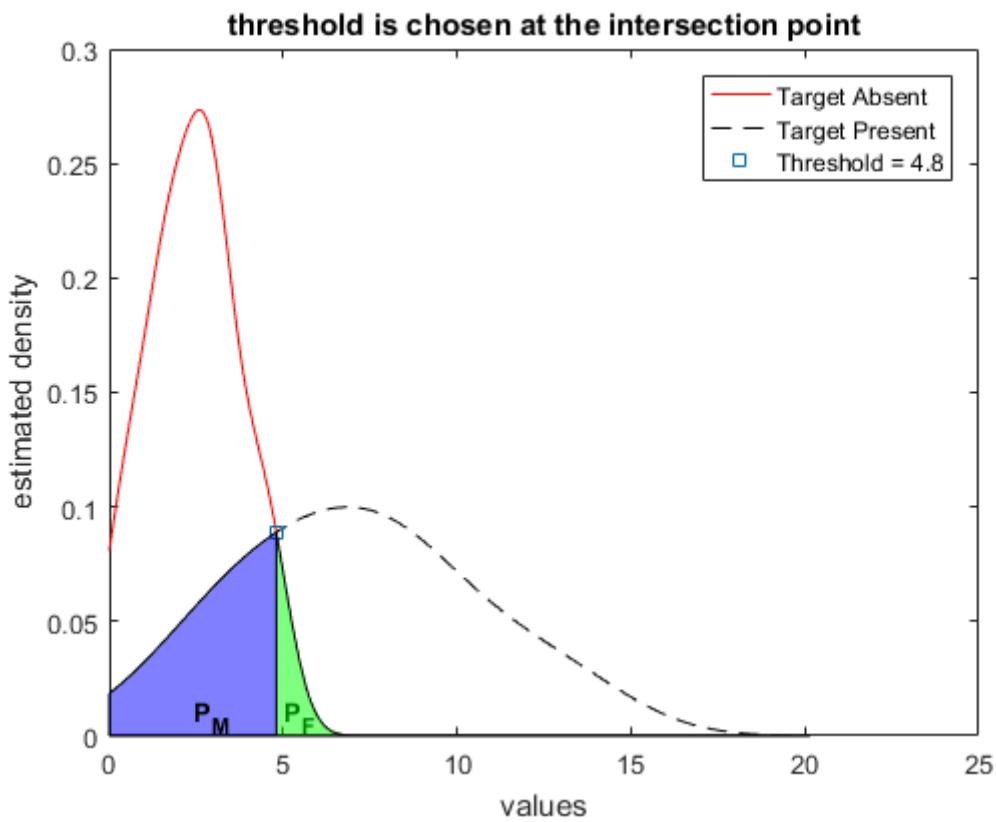
**Probability of Miss = 1 - sensitivity = 0.43333**

Probability of correct NO TARGET detection (specificity) = 1

**Probability of False Alarm = 1 - specificity = 0**

**Positive Predictive Value (PPV) = a posteriori probability = 1**

Overall Accuracy = 0.81429



**Sorted and Partitioned Data : Threshold at 4.8**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
5.029	3.341	2.874	1.909	1.29	13.436	9.869	7.98	5.847	4.247
4.593	3.148	2.681	1.902	1.034	13.321	8.821	7.633	5.769	3.857
4.579	3.099	2.632	1.803	0.951	12.746	8.697	7.231	5.601	2.772
4.415	3.051	2.614	1.799	0.737	12.017	8.412	7.048	4.652	2.627
4.252	2.974	2.526	1.688	0.381	10.612	8.291	6.961	4.417	2.251
4.212	2.962	2.367	1.652	0.323	10.117	8.1	5.864	4.268	1.452
3.762	2.939	2.254	1.412	0.203					
3.58	2.897	1.957	1.411	0.195					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 21**

Miss rate : 9 in 30

(c) P. M. Shankar

## Summary of the analysis

Yang

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.8**

Probability of correct TARGET detection (sensitivity) = 0.7

**Probability of Miss = 1 - sensitivity = 0.3**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.95455**

Overall Accuracy = 0.85714

### Confusion Matrix (Threshold Value = 4.8)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	21	9	30
Total Counts	22	48	70

$$P_F = \frac{1}{40} \quad P_M = \frac{3}{10} \quad PPV = \frac{21}{22} \quad \text{err} = \frac{1}{7} \quad \text{acc} = \frac{6}{7}$$

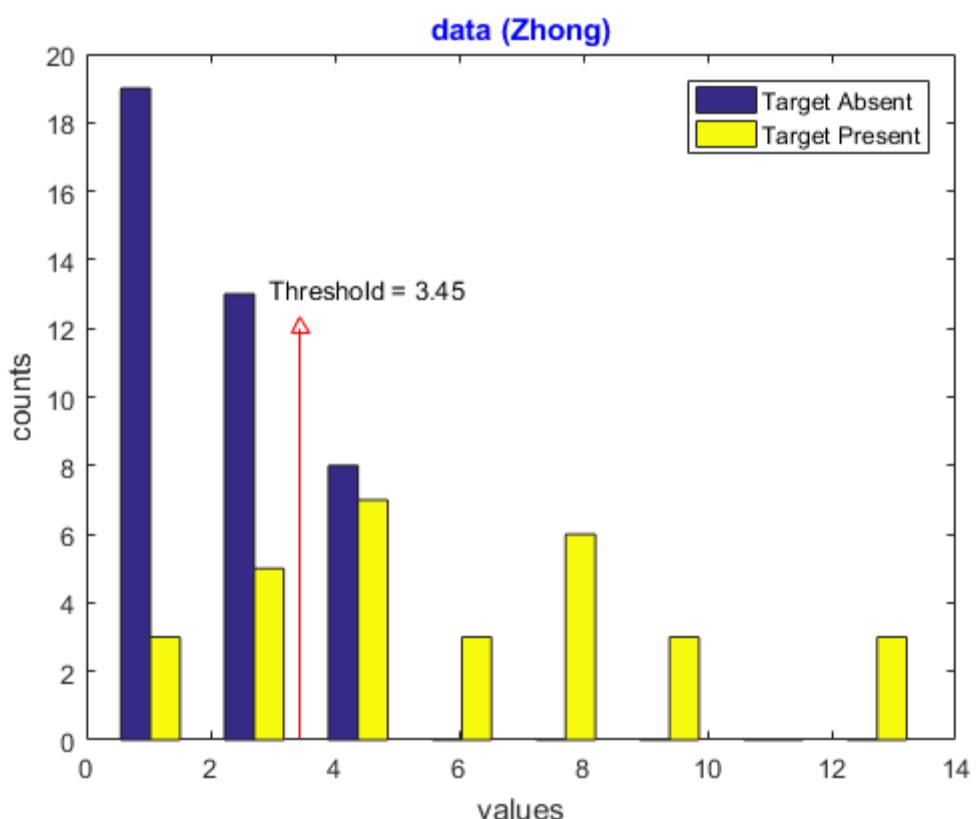
## Summary of the analysis

Yang

data (Zhong)

Target Absent					Target Present				
3.778	4.404	0.807	1.45	1.449	2.982	13.568	9.818	5.966	3.722
3.411	0.764	1.914	0.614	0.453	3.169	6.286	1.355	4.545	4.25
1.373	4.087	3.708	3.052	4.308	8.7	7.738	4.065	2.96	6.984
1.803	1.243	1.762	2.215	0.709	6.839	11.934	7.568	4.772	4.634
2.41	1.862	1.742	4.917	2.65	2.602	7.452	8.391	12.8	3.302
0.821	3.552	0.204	2.214	0.197	8.42	1.853	9.501	3.897	0.198
4.349	1.543	1.011	1.855	3.022					
2.546	2.385	2.108	1.937	2.42					

(c) P. M. Shankar



### Sorted and Partitioned Data : Threshold at 3.45

Target Absent					Target Present				
<b>4.917</b>	3.411	2.215	1.762	0.821	<b>13.568</b>	<b>8.42</b>	<b>6.839</b>	<b>4.25</b>	2.982
<b>4.404</b>	3.052	2.214	1.742	0.807	<b>12.8</b>	<b>8.391</b>	<b>6.286</b>	<b>4.065</b>	2.96
<b>4.349</b>	3.022	2.108	1.543	0.764	<b>11.934</b>	<b>7.738</b>	<b>5.966</b>	<b>3.897</b>	2.602
<b>4.308</b>	2.65	1.937	1.45	0.709	<b>9.818</b>	<b>7.568</b>	<b>4.772</b>	<b>3.722</b>	1.853
<b>4.087</b>	2.546	1.914	1.449	0.614	<b>9.501</b>	<b>7.452</b>	<b>4.634</b>	3.302	1.355
<b>3.778</b>	2.42	1.862	1.373	0.453	<b>8.7</b>	<b>6.984</b>	<b>4.545</b>	3.169	0.198
<b>3.708</b>	2.41	1.855	1.243	0.204					
<b>3.552</b>	2.385	1.803	1.011	0.197					

Number of samples above threshold = 8

Number of samples above threshold = 22

False Alarm rate : 8 in 40

Miss rate : 8 in 30

(c) P. M. Shankar

### Sorted and Partitioned Data : Threshold at 3.45

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 3.45**

Probability of correct TARGET detection (sensitivity) = 0.73333

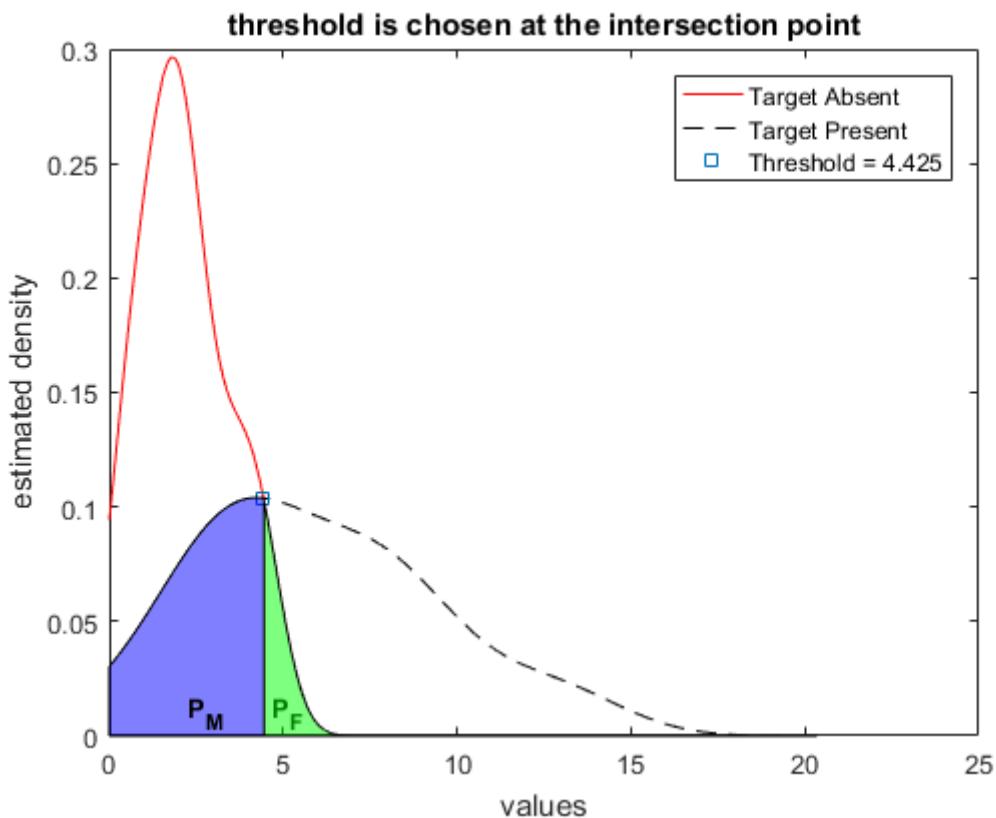
**Probability of Miss = 1 - sensitivity = 0.26667**

Probability of correct NO TARGET detection (specificity) = 0.8

**Probability of False Alarm = 1 - specificity = 0.2**

**Positive Predictive Value (PPV) = a posteriori probability = 0.73333**

Overall Accuracy = 0.77143



**Sorted and Partitioned Data : Threshold at 4.425**  
**Threshold is chosen at the intersection point**

Target Absent					Target Present				
4.917	3.411	2.215	1.762	0.821	13.568	8.42	6.839	4.25	2.982
4.404	3.052	2.214	1.742	0.807	12.8	8.391	6.286	4.065	2.96
4.349	3.022	2.108	1.543	0.764	11.934	7.738	5.966	3.897	2.602
4.308	2.65	1.937	1.45	0.709	9.818	7.568	4.772	3.722	1.853
4.087	2.546	1.914	1.449	0.614	9.501	7.452	4.634	3.302	1.355
3.778	2.42	1.862	1.373	0.453	8.7	6.984	4.545	3.169	0.198
3.708	2.41	1.855	1.243	0.204					
3.552	2.385	1.803	1.011	0.197					

**Number of samples above threshold = 1**

False Alarm rate : 1 in 40

**Number of samples above threshold = 18**

Miss rate : 12 in 30

(c) P. M. Shankar

## Summary of the analysis Zhong

Sample size (Target Absent) = 40

Sample size (Target Present) = 30

a priori probability : Target Absent = 0.57143

a priori probability : Target Present = 0.42857

**Threshold value = 4.425**

Probability of correct TARGET detection (sensitivity) = 0.6

**Probability of Miss = 1 - sensitivity = 0.4**

Probability of correct NO TARGET detection (specificity) = 0.975

**Probability of False Alarm = 1 - specificity = 0.025**

**Positive Predictive Value (PPV) = a posteriori probability = 0.94737**

Overall Accuracy = 0.81429

### Confusion Matrix (Threshold Value = 4.425)

Data Collected	Target Detected	Target Not Detected	Total Counts
Target Absent	1	39	40
Target Present	18	12	30
Total Counts	19	51	70

$$P_F = \frac{1}{40} \quad P_M = \frac{2}{5} \quad \text{PPV} = \frac{18}{19} \quad \text{err} = \frac{13}{70} \quad \text{acc} = \frac{57}{70}$$

## Summary of the analysis Zhong