

| Actual | 0 | 1 |
|-----------|----|----|
| | TN | FN |
| 1 | FP | TP |
| Predicted | | |

$$\text{Accuracy} = \frac{\text{TN} + \text{TP}}{\text{TN} + \text{TP} + \text{FN} + \text{FP}}$$

| | | | |
|--------|---|-----------|----|
| Actual | 0 | TN | FN |
| | 1 | FP | TP |
| | | 0 | 1 |
| | | Predicted | |

$$\text{Accuracy} = \frac{\text{TN} + \text{TP}}{\text{TN} + \text{TP} + \text{FN} + \text{FP}}$$

* Matthews Correlation Coefficient (MCC)

$$\text{MCC} = \frac{\text{TP} \times \text{TN} - \text{FP} \times \text{FN}}{[(\text{TP} + \text{FP}) \times (\text{TP} + \text{FN}) \times (\text{TN} + \text{FP}) \times (\text{TN} + \text{FN})]^{\frac{1}{2}}}$$

| Actual | 0 | 1 |
|-----------|----|----|
| | TN | FN |
| 1 | FP | TP |
| Predicted | | |

Diagonal = off-diagonal:

$$TP \times TN = FP \times FN$$

* Matthews Correlation Coefficient (MCC)

$$MCC = \frac{0}{[\dots]^{\frac{1}{2}}} = 0$$

| | | | |
|--------|---|-----------|----|
| Actual | 0 | TN | FN |
| | 1 | FP | TP |
| | | 0 | 1 |
| | | Predicted | |

Diagonal:

FP = FN = 0

TP \neq 0

TN \neq 0

* Matthews Correlation Coefficient (MCC)

$$\text{MCC} = \frac{\text{TP} \times \text{TN} - 0}{[(\text{TP} + 0) \times (\text{TP} + 0) \times (\text{TN} + 0) \times (\text{TN} + 0)]^{\frac{1}{2}}} = 1$$

| | | | |
|--------|---|-----------|----|
| Actual | 0 | TN | FN |
| | 1 | FP | TP |
| | | 0 | 1 |
| | | Predicted | |

Anti-diagonal:

$$TP = TN = 0$$

$$FP \neq 0$$

$$FN \neq 0$$

* Matthews Correlation Coefficient (MCC)

$$MCC = \frac{0 - FP \times FN}{[(0 + FP) \times (0 + FN) \times (0 + FP) \times (0 + FN)]^{\frac{1}{2}}} = -1$$