cost\_matrix = [TN, FP, FN, TP]

True Negative (TN):

(1 - y\_true) \* (1 - y\_pred) \* cost\_matrix[:, 0]

|  |  |  |
| --- | --- | --- |
| Predicted | Actual | Outcome |
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

False Negative (FN):

y\_true \* (1 - y\_pred) \* cost\_matrix[:, 2]

|  |  |  |
| --- | --- | --- |
| Predicted | Actual | Outcome |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

False Positive (FP):

(1 - y\_true) \* y\_pred \* cost\_matrix[:, 1])

|  |  |  |
| --- | --- | --- |
| Predicted | Actual | Outcome |
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

True Positive (TP):

y\_true \* y\_pred \* cost\_matrix[:, 3]

|  |  |  |
| --- | --- | --- |
| Predicted | Actual | Outcome |
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |