Understanding a Confusion Matrix and Performance Metrics

www.lucaskellydataportfolio.weebly.com

www.github.com/lucaskelly49

https://www.linkedin.com/in/lucaskelly49/

Lucas Kelly

OBJECTIVES:

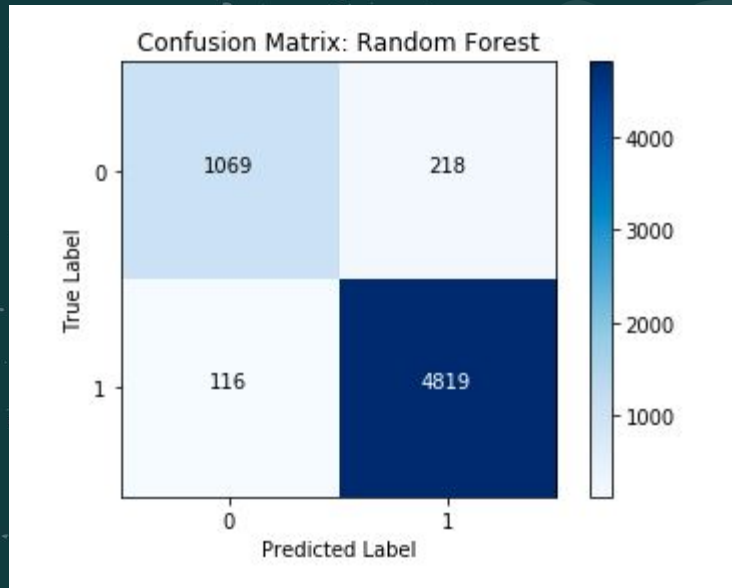Be the end of this lesson you should be able to...

Interpret a confusion matrix

Know the differences between false positives, false negatives, true positives, true negatives

Create a confusion matrix

HEALTHCARE EXAMPLE

Confusion Matrix: Random Forest

	Predicted 0	Predicted 1
True Label 0	1069	218
True Label 1	116	4819

0 - no disease detected
1 - disease detected

We create a model using a Random Forest algorithm to help doctors detect a disease. Let's use the confusion matrix to evaluate the model's effectiveness.
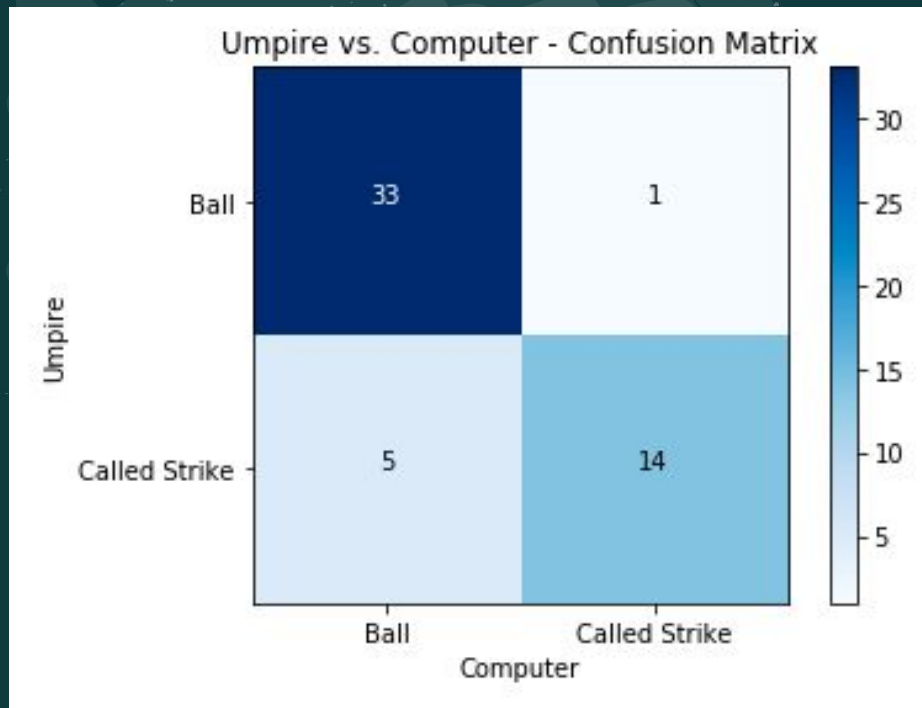
True 0 / Pred 0: <u>True Negative</u> - No disease

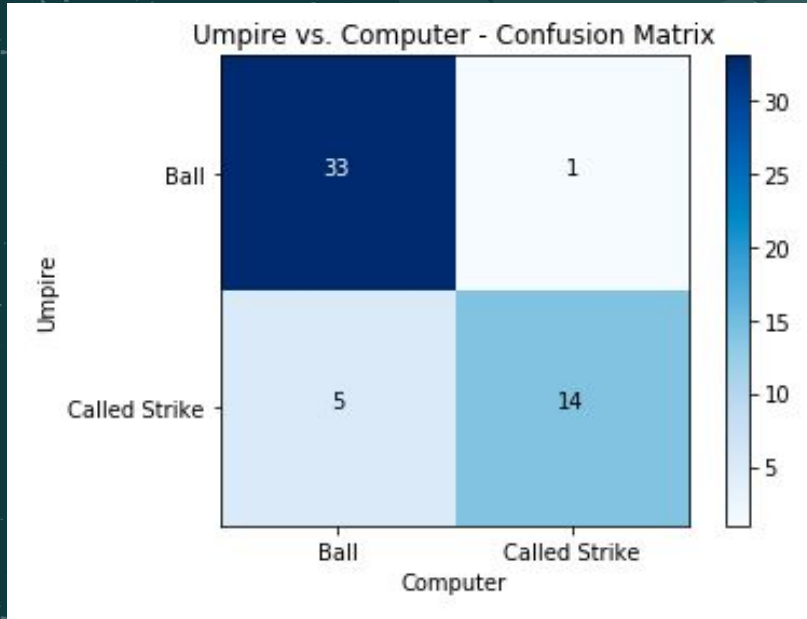True 1 / Pred 1: <u>True Positive</u> - Disease detected

True 0 / Pred 1: <u>False Positive</u> - Misdiagnosis

True 1 / Pred 0: <u>False Negative</u> - Misdiagnosis

Baseball Example

Umpire vs. Computer - Confusion Matrix

Interpreting a Confusion Matrix

Umpire vs. Computer - Confusion Matrix
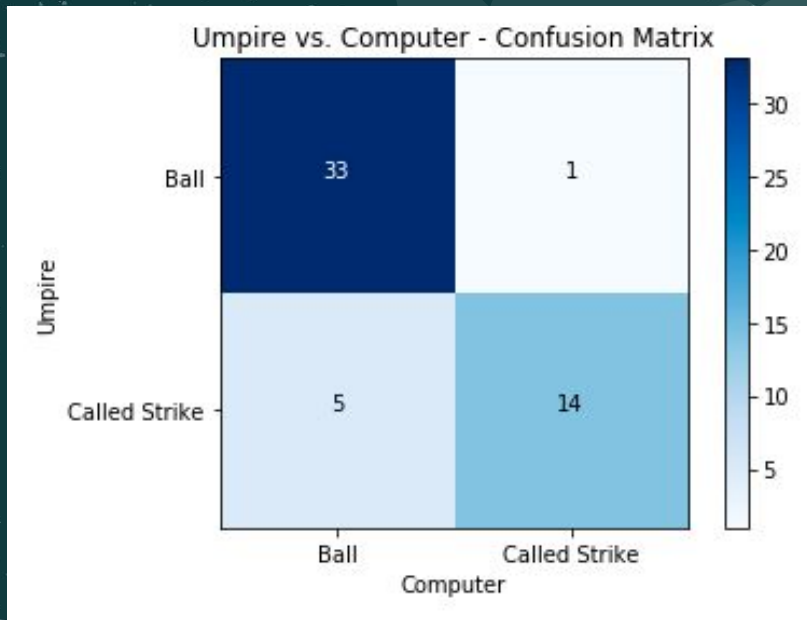
TEST!

How many times did the umpire des 'Ball' when the computer des 'Called Strike'?

1 time

False Positive

Interpreting a Confusion Matrix

Umpire vs. Computer - Confusion Matrix

TEST!

How many times did the umpire and computer both des 'Called Strike'?

14 times

True Positive

OBJECTIVES MET?

Do you know how to:

Building and Interpret a confusion matrix?

Tell the differences between false positives, false negatives, true positives, true negatives?

Next up:

Understand how to calculate evaluation metrics and when to use certain metrics!

Thank You!

www.lucaskellydataportfolio.weebly.com

www.github.com/lucaskelly49

https://www.linkedin.com/in/lucaskelly49/

Links and References:

Link to video:

https://www.youtube.com/watch?v=eXbwBK85SSI&feature=youtu.be

Link to repo:

https://github.com/lucaskelly49/Lessons/tree/master/ConfusionMatrix