ORES Preparation IV

Tom Gülenman

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Disclaimer: No guarantee for the correctness of information / explanations / sources is given.

Goals

1. Adjust crucial metrics list to match the damaging model metrics
2. Check out mail attachments
3. Check out new Confluence pages and goals
4. Research
    - Check out FAT Conference Docs
    - In what other cases than confusion matrices are those parameters explained?
    - Are there already visualizations of some of these parameters in any contexts?
    - Are there any applications, where I can filter for these parameters → visualizations or just about anything?

1 Crucial metrics: damaging-model

Metrics simple list:

!f1	✓
!precision	
!recall	
accuracy	
counts	
f1	
filter_rate	
fpr	
match_rate	
pr_auc	
precision	✓
rates	
recall	✓
roc_auc	

The metrics are the same for the damaging and itemquality models, but a few changes will be made to the explanatory parts to better fit the damaging model (TODO: ...right?). Also the structure of explanations will be changed to the following:

For each metric (if possible) there will be:

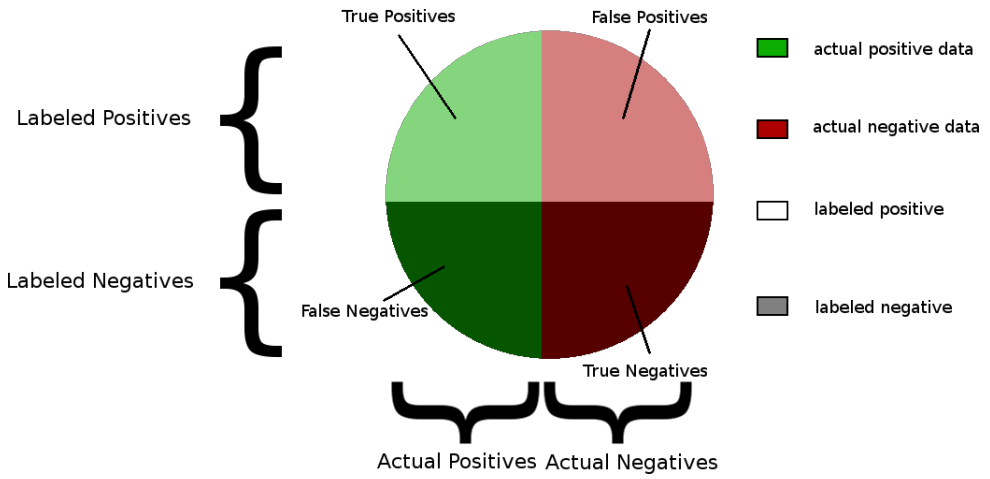
1. An intuitive explanation
2. The formula based on the **confusion matrix**
3. Its meaning based on the "**confusion circle**"
4. Its meaning based on the **loan threshold** representation by Google (Link)

Explanations: References

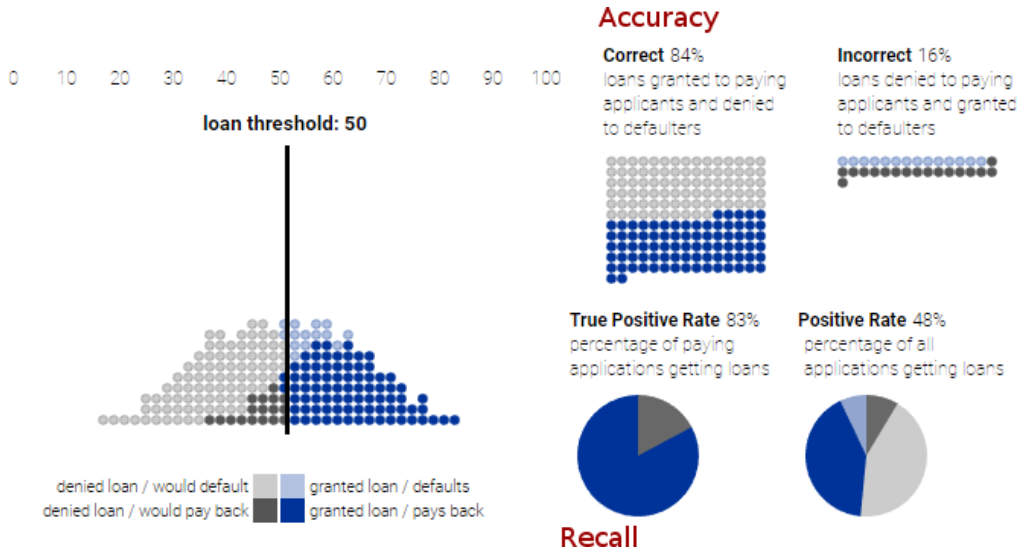
- Confusion Matrix

		Actual	
		Positive	Negative
Predicted	Positive	True Positive	False Positive
	Negative	False Negative	True Negative

- "Confusion Circle"

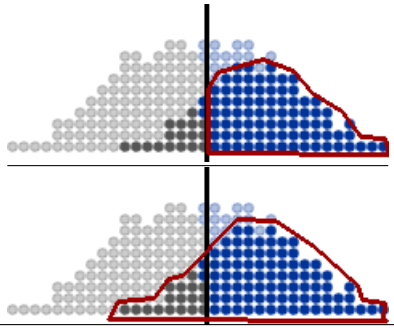


- Loan Threshold



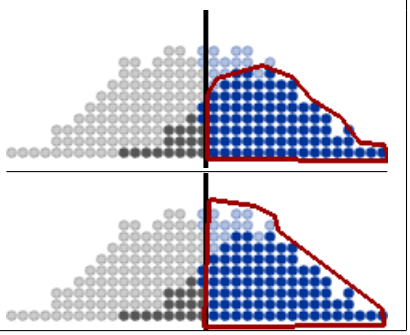
1.1 Recall

1. Recall (≡ True Positive Rate) is defined as the ability of a model to find all relevant cases within the dataset.

2.	3.	4.
$= \frac{\texttt{TP}}{\texttt{TP+FN}}$	$=$ 	$=$ 

1.2 Precision

1. Ability of the model to find only relevant cases within the dataset

2.	3.	4.
$= \frac{\texttt{TP}}{\texttt{TP+FP}}$	$=$ 	$=$ 

1.3 F1

1. F1-Score, the harmonic mean of recall and precision, a metric from 0 (worst) to 1 (best), used to evaluate the accuracy of a model by taking recall and precision into account

2.	3.	4.
-	-	-

$$= 2 * \frac{\texttt{precision*recall}}{\texttt{precision+recall}}$$

Compared to the simple average (of recall and precision), the harmonic mean punishes extreme values (e.g. precision 1.0 and recall 0.0 $\rightarrow$ average 0.5, but F1 = 0)

Questions

- Q: Should I ask Aaron how he would like us to work together? I'm not sure how he meant it.

  A:

- Q: In what situations exactly do we want to optimize the threshold in the context of user centered threshold optimization?

  A:

- Q: VPN recommendation?

  A: