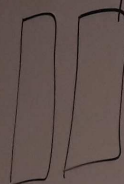


$N = 1 \text{ mill}$
 $\hookrightarrow 100$

Evaluation



Train Test

Equally
Distributed

$100N$

N

True $\rightarrow C_1$: 80%

False $\rightarrow C_2$: 20%

$M(x) \rightarrow \text{acc } 80\%$

$M(x) = C_1$

Confusion Matrix

	actual \hookrightarrow	True	False
pred \downarrow	True	40 TP	20 FP
False	20 FN		
		60	

$$\text{Precision} = \frac{40}{55}$$

$$\text{Recall} = \frac{40}{60}$$

$$\text{Acc} = \frac{65}{100}$$

$$F_1 = 2 \cdot \frac{\frac{40}{55} \cdot \frac{40}{60}}{\frac{40}{55} + \frac{40}{60}}$$

Confusion Matrix

actual \ pred	True	False	
True	40 _{TP}	15 _{FP}	55
False	20 _{FN}	25 _{TN}	45
	60	40	

$$\text{Precision} = \frac{40}{55}$$

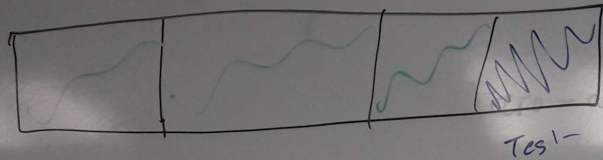
$$\text{Recall} = \frac{40}{60}$$

$$\text{Acc} = \frac{65}{100}$$

$$F_1 = 2 \cdot \frac{\frac{40}{55} \cdot \frac{40}{60}}{\frac{40}{55} + \frac{40}{60}}$$

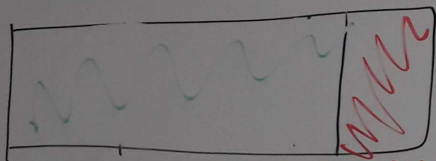
Actual Predicted	C ₁	C ₂	C ₃
C ₁			
C ₂			
C ₃			

	Precision	Recall	F ₁
C ₁	.8	.3	
C ₂	.6	.5	
C ₃	.33	.8	



$N=100$

K-fold cross validation



Validation Dev

Best fit
fit

Dom

$\{0, 1\}$

Acc

Formulas

$$\frac{\sum \text{Correct}}{\text{Total}}$$

$\{0, 1\}$

Precision

$$\frac{\sum \text{Correct true}}{\sum \text{Predicted true}}$$

$\{0, 1\}$

Recall

$$\frac{\sum \text{Correct true}}{\sum \text{Actual true}}$$

$\{0, 1\}$

F1

$$2 \cdot \frac{\text{Prec} \cdot \text{Recall}}{\text{Prec} + \text{Recall}}$$