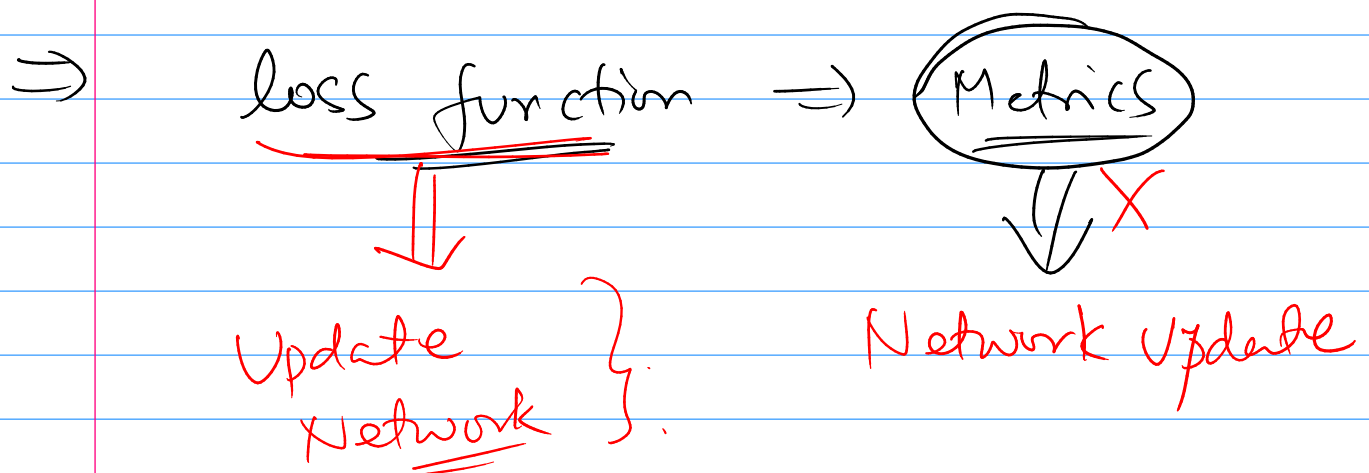


\Rightarrow $0.9 < \underline{\text{accuracy}}$

$100 \Rightarrow 90 \checkmark$
 $10 \times$

\Rightarrow mse $\Rightarrow \frac{1}{2} (y_{true} - y_{pred})^2$

$\text{mae} \Rightarrow \frac{\text{abs}(\text{abs}(y_{true} - y_{pred}))}{\text{abs}(\text{abs}(y_{true} - y_{pred}))}$



- ⇒ Classification {
 - (i) Binary Cross entropy ✓
 - (ii) Categorical Cross entropy ✓
- Regression {
 - (iii) Mean Squared Error.

⇒ Create our own loss function.

y_{pred}

predicted
Values

Ground
Truth

Optimiser from Network

y_{true}

loss-function (y_{true} , y_{pred})

Mean Squared Error.

return $\frac{1}{2} (y_{true} - y_{pred})^2$

(i) Binary Cross entropy ÷ $\log(y_{pred})$

$$L = - \sum \left(y_{true}^1 \ln(y_{pred}) + (1 - y_{true}) \ln(1 - y_{pred}) \right)$$

$\ln(1) = 0$

⇒ Binary Cross entropy: $y_{true}=1$ for $y_{true}=0$

$$L = - \sum (y_{true} \ln(y_{pred}) + (1 - y_{true}) \ln(1 - y_{pred}))$$

y_{true}	y_{pred}	
0 ✓ ✓	0.05	$\ln(0.95)$
1 ✓	0.9	0.9
0 ✓	0.9	$\ln(0.9)$
1	0.1	$\ln(0.1)$

model.fit(, , , batch_size =)

⇒ Categorical Cross entropy:

$$L = - \sum y_{true} \ln y_{pred}$$

⇒

Dog	Cat	Goat	y_{pred}
1	0	0	0.8
0	1	0	0.1
0	0	1	0.1

$$L =$$