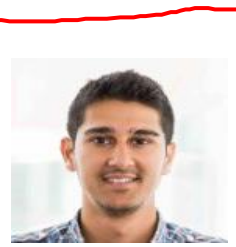
deeplearning.ai

Face recognition

Face verification and binary classification

Learning the similarity function



$x^{(i)}$

$x^{(j)}$

Siamese Neural Networks (with same parameters)

Logistic Regression output unit

$f(x^{(i)})$

$f(x^{(j)})$

$\hat{y}$

precompute

$$\hat{y} = \sigma\left(\sum_{k=1}^{128} w_i \left| f(x^{(i)})_k - f(x^{(j)})_k \right| + b\right)$$

Chi-square Similarity

$$\frac{\left(f(x^{(i)})_k - f(x^{(j)})_k\right)^2}{f(x^{(i)})_k + f(x^{(j)})_k}$$

χ^2

Sigmoid function used in the logistic regression at the end, using the output of two Siamese neural networks as the input, output binary classification.

[Taigman et. al., 2014. DeepFace closing the gap to human level performance]

Face verification supervised learning

x	y	
	1	"Same"
	0	"Albert"
	0	
	1	

[Taigman et. al., 2014. DeepFace closing the gap to human level performance]