

Generative Models

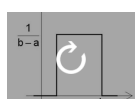
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[Generative model](#)



[Probability density function](#)



Let's say you have input x and a model learns the **joint** probability $p(x, y)$ and the **conditional** probability $p(y|x)$ given x .

$p(x, y)$ is		
	$y=0$	$y=1$

$x=1$	$1/2$	0
$x=2$	$1/4$	$1/4$
$p(y x)$ is		
	$y=0$	$y=1$

$x=1$	1	0
$x=2$	$1/2$	$1/2$

data x and you want to classify the data into labels y . A generative probability distribution $p(x,y)$ and a discriminative model learns distribution $p(y|x)$ - which you should read as "*the probability of y*