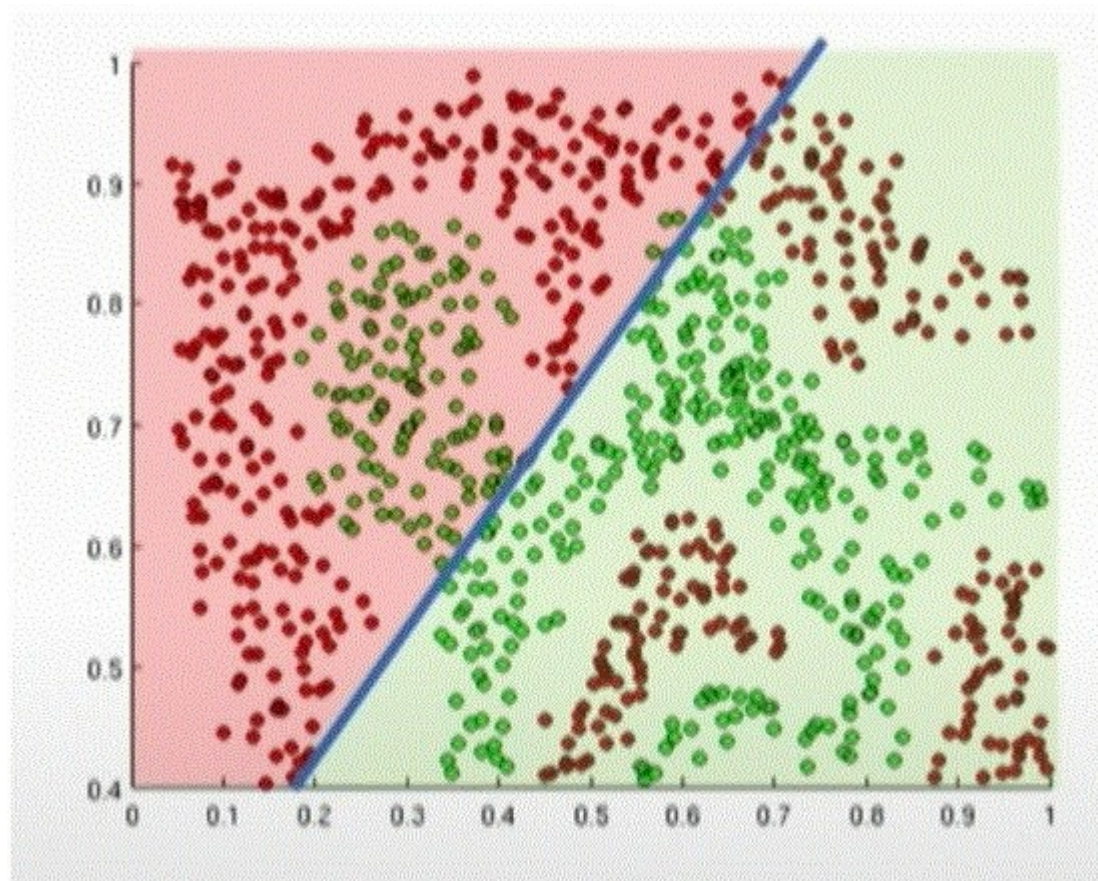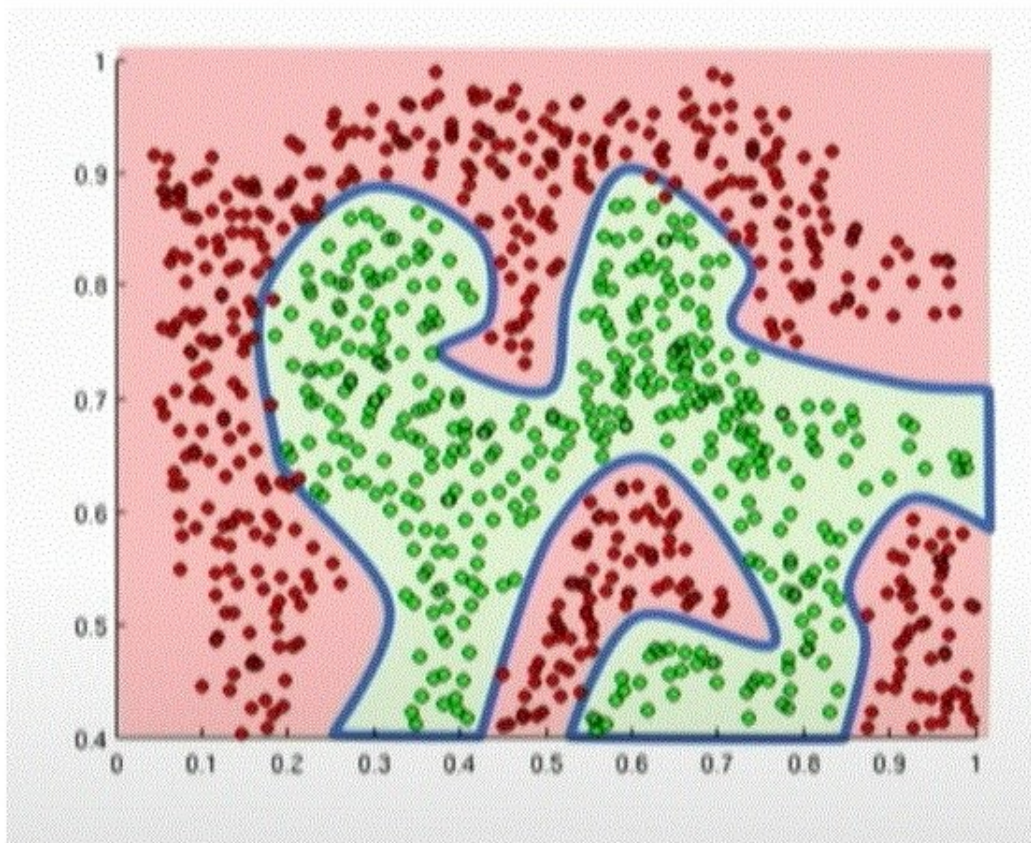Figure: Non-Linear dataset
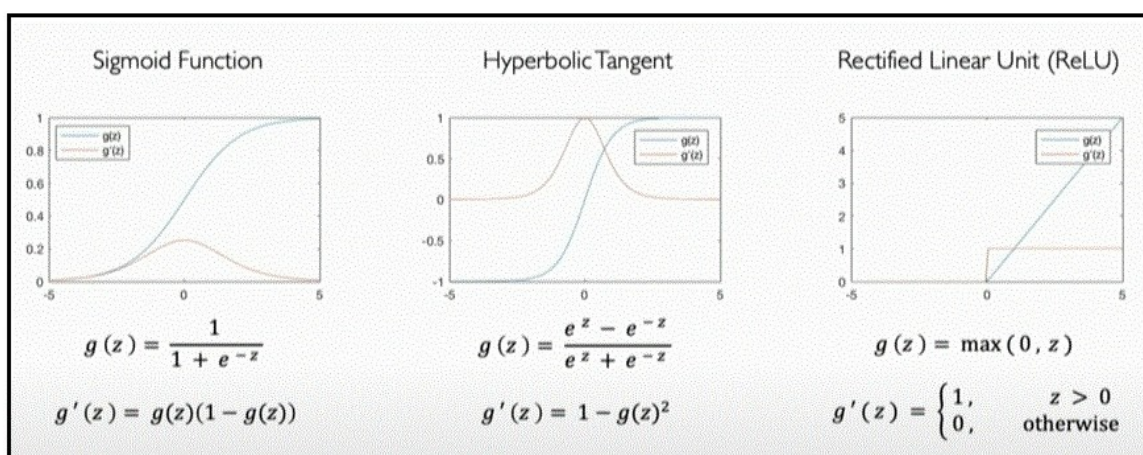
Figure: Straight line (linear approach) to construct the decision boundary.

Figure: Decision boundary after using on-linear activation functions

Sigmoid Function	Hyperbolic Tangent	Rectified Linear Unit (ReLU)
$g(z) = \dfrac{1}{1+e^{-z}}$	$g(z) = \dfrac{e^z - e^{-z}}{e^z + e^{-z}}$	$g(z) = \max(0, z)$
$g'(z) = g(z)(1 - g(z))$	$g'(z) = 1 - g(z)^2$	$g'(z) = \begin{cases} 1, & z > 0 \\ 0, & \text{otherwise} \end{cases}$

Figure: Activation Functions