Logistic $\quad \sigma(x) = \dfrac{1}{1+e^{-x}} \in (0,1)$

$$\sigma'(x) = \sigma(x)(1-\sigma(x))$$

Hypobolic tangent

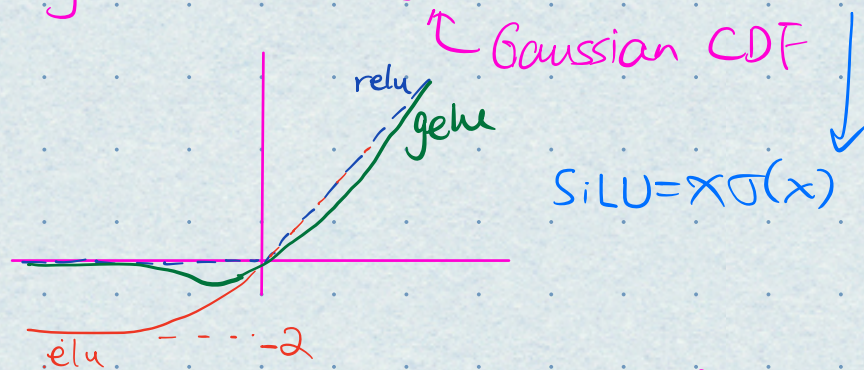$$\tanh(x) = \frac{e^x - e^{-x}}{e^x + e^{-x}} \in (-1, 1)$$

$$\tanh'(x) = 1 - \tanh^2(x)$$

ReLU $\quad relu(x) = \max(0, x)$

Leaky ReLU $\quad f(x) = \begin{cases} 0.01x & , \text{ if } x < 0 \\ x & , \text{ if } x \geq 0 \end{cases}$

GELU $\quad gelu(x) = x\phi(x) \approx x\,\sigma(1.702x)$

$\qquad\qquad\qquad\quad \hookleftarrow$ Gaussian CDF

relu

gelu

$SiLU = x\sigma(x)$

elu $\quad\cdots\cdots -2$

ELU $\quad elu(x) = \begin{cases} 2(e^x - 1) & , \text{ if } x < 0 \\ x & , \text{ if } x \geq 0 \end{cases}$