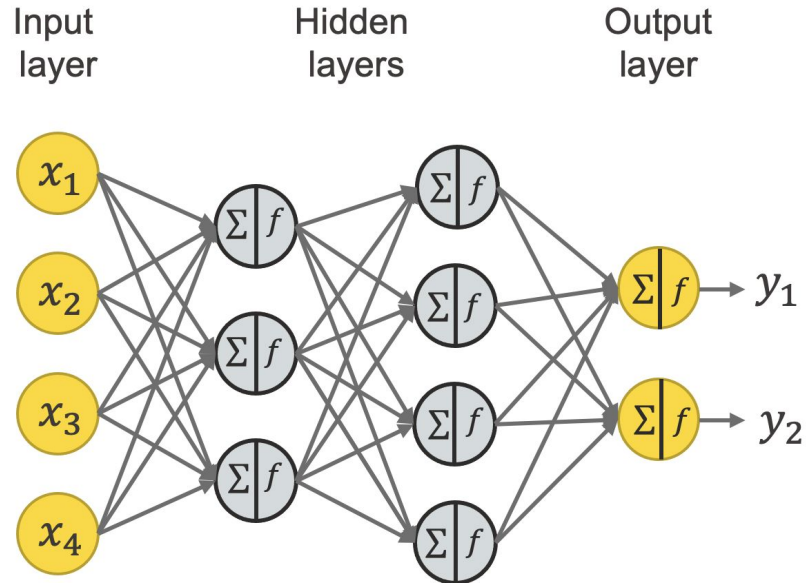# An Introduction to PyTorch

UPE Lunch & Learn
Presented by N'yoma Diamond

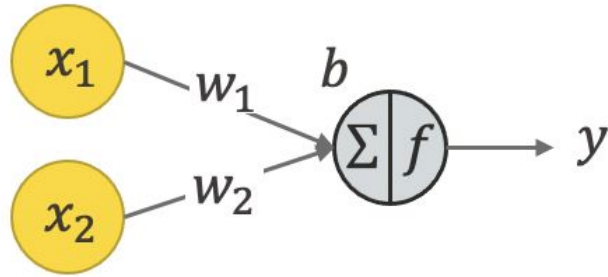# Neural Networks: A Crash Course

Networks

Neural Networks: A Crash Course

Neurons

$$y = f\left(b + \sum_{i=1}^{n_x} w_i \cdot x_i\right)$$
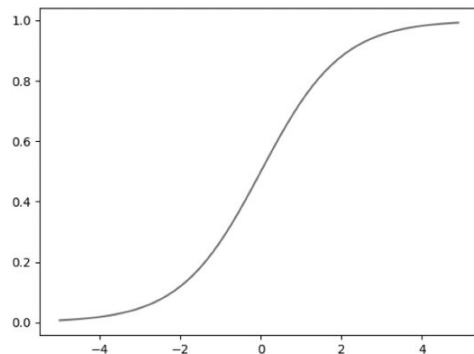
$x_i = \text{input value } i$

$w_i = \text{weight of } x_i$

$b = \text{bias}$

$y = \text{neuron output}$

Activation Functions

Sigmoid

Tanh
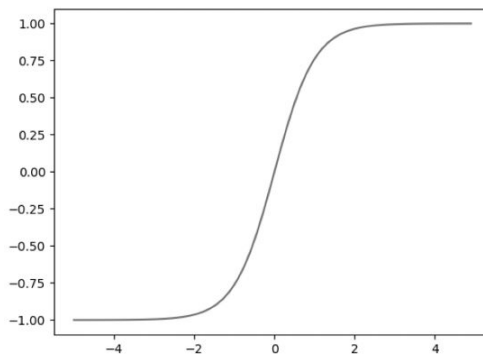
Rectified Linear Unit (ReLU)
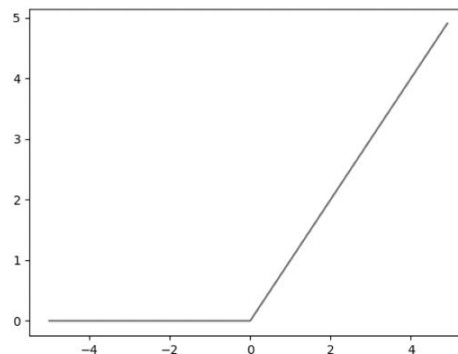
$$f(a) = \frac{1}{1 + e^{-ha}}$$

$$f(a) = \frac{e^{2ha} - 1}{e^{2ha} + 1}$$

$$f(a) = max\{0, ha\}$$

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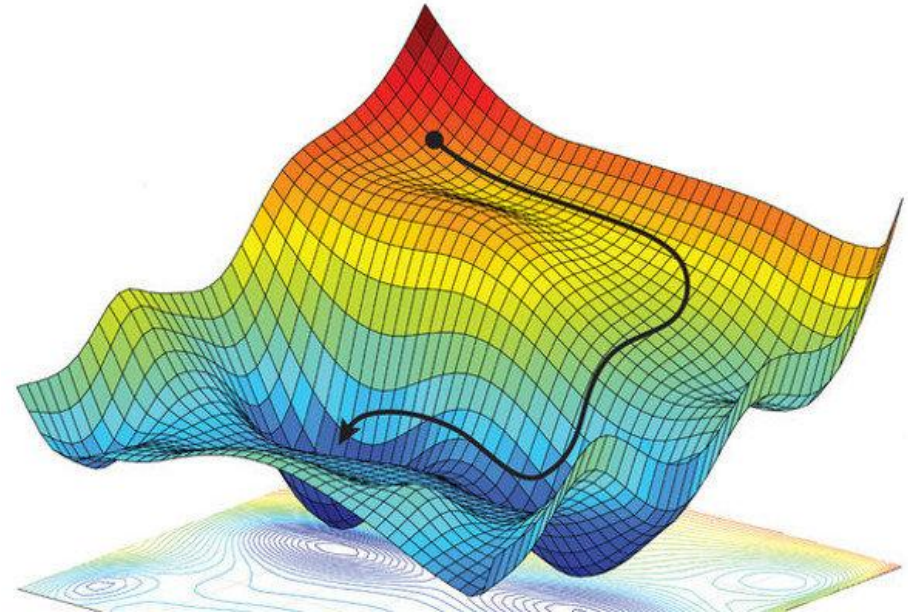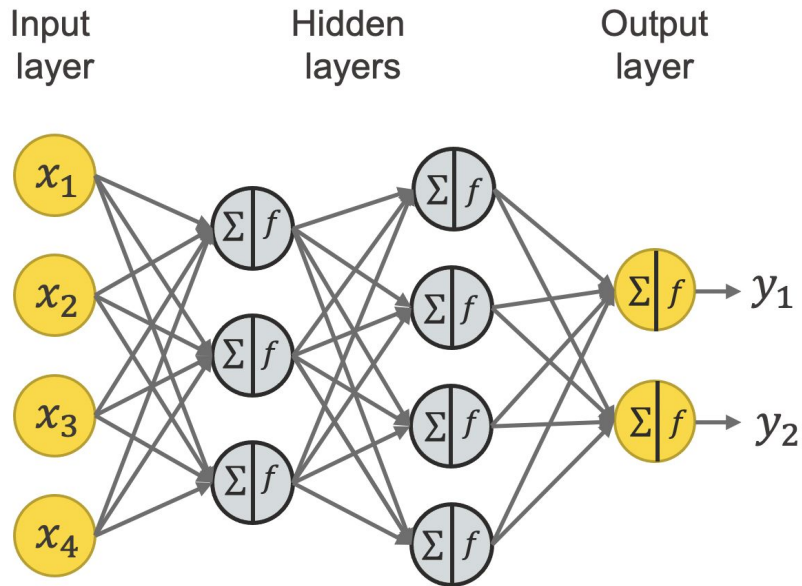
Optimization (Training)

Optimization (Training)

PyTorch: **What is it?**

Tensors

References
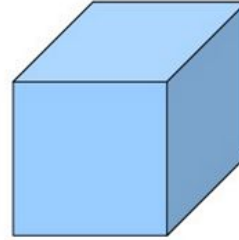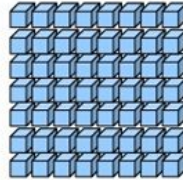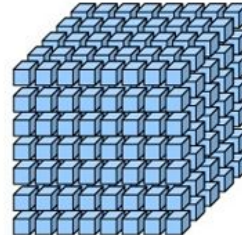
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