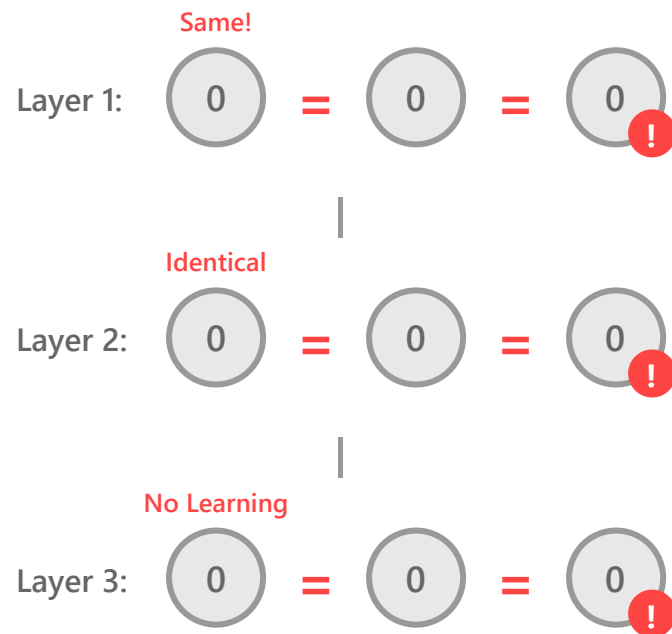


Problems with Zero Initialization



1 **Symmetry problem:** All neurons compute identical outputs

2 Gradients are **identical** for all neurons in same layer

3 Network fails to **break symmetry** during backpropagation

4 Results in **redundant neurons** learning same features

5 **No learning** occurs - weights remain constant

6 Effectively reduces network to **single neuron** per layer