



## AI/MACHINE LEARNING WORKSHOP

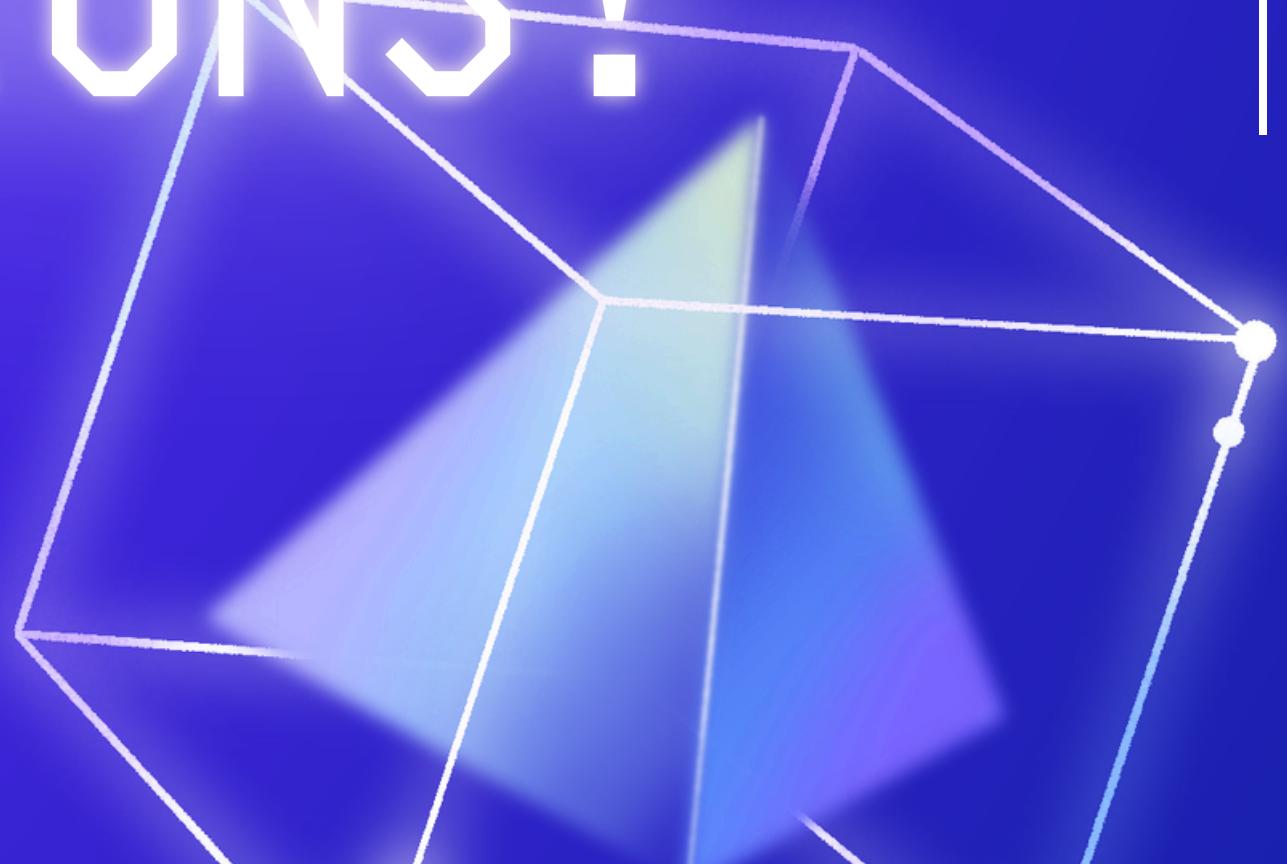
# DAY 11: INTRODUCTION TO AI & ML: NEURAL NETWORKS

Youth Opportunities in Tech Innovation



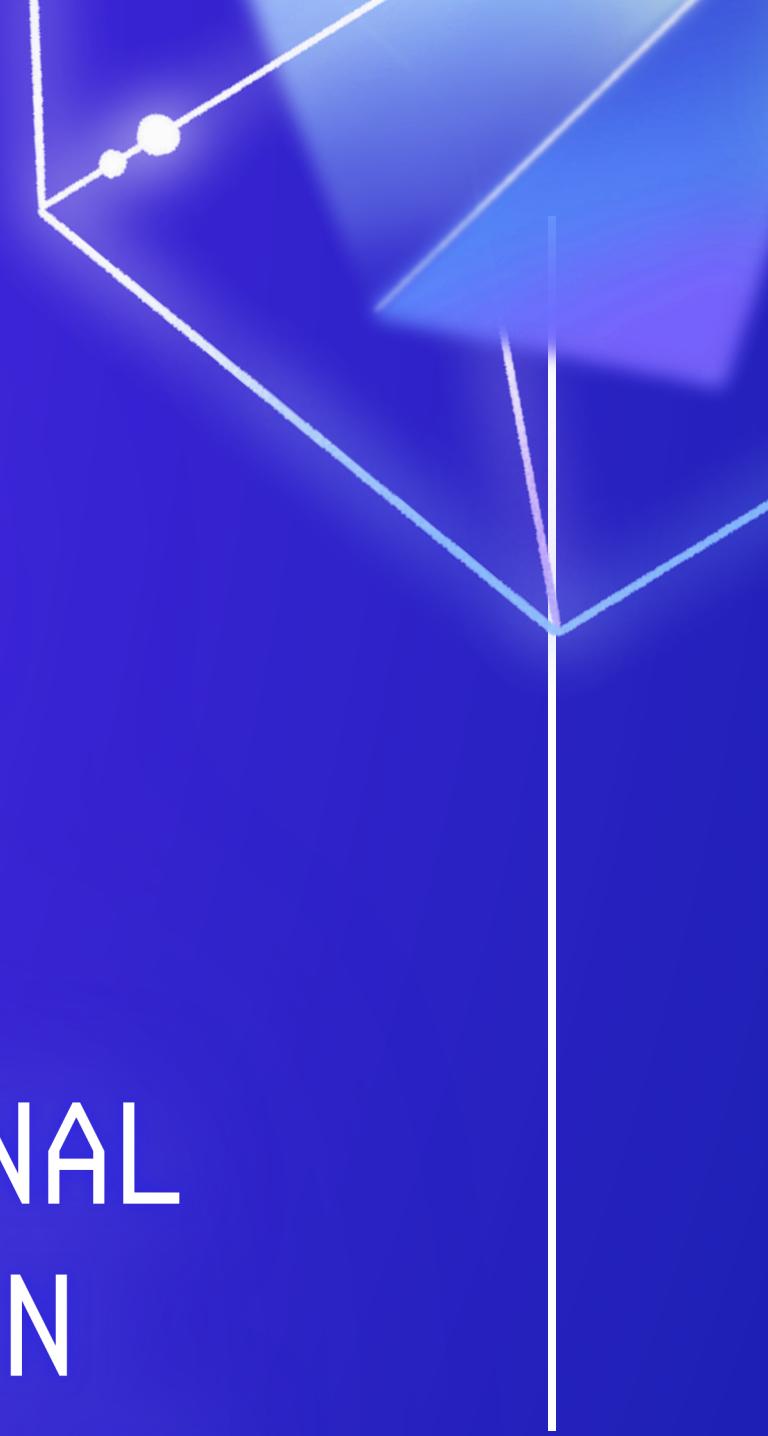


REMINDER PLEASE  
ASK QUESTIONS!

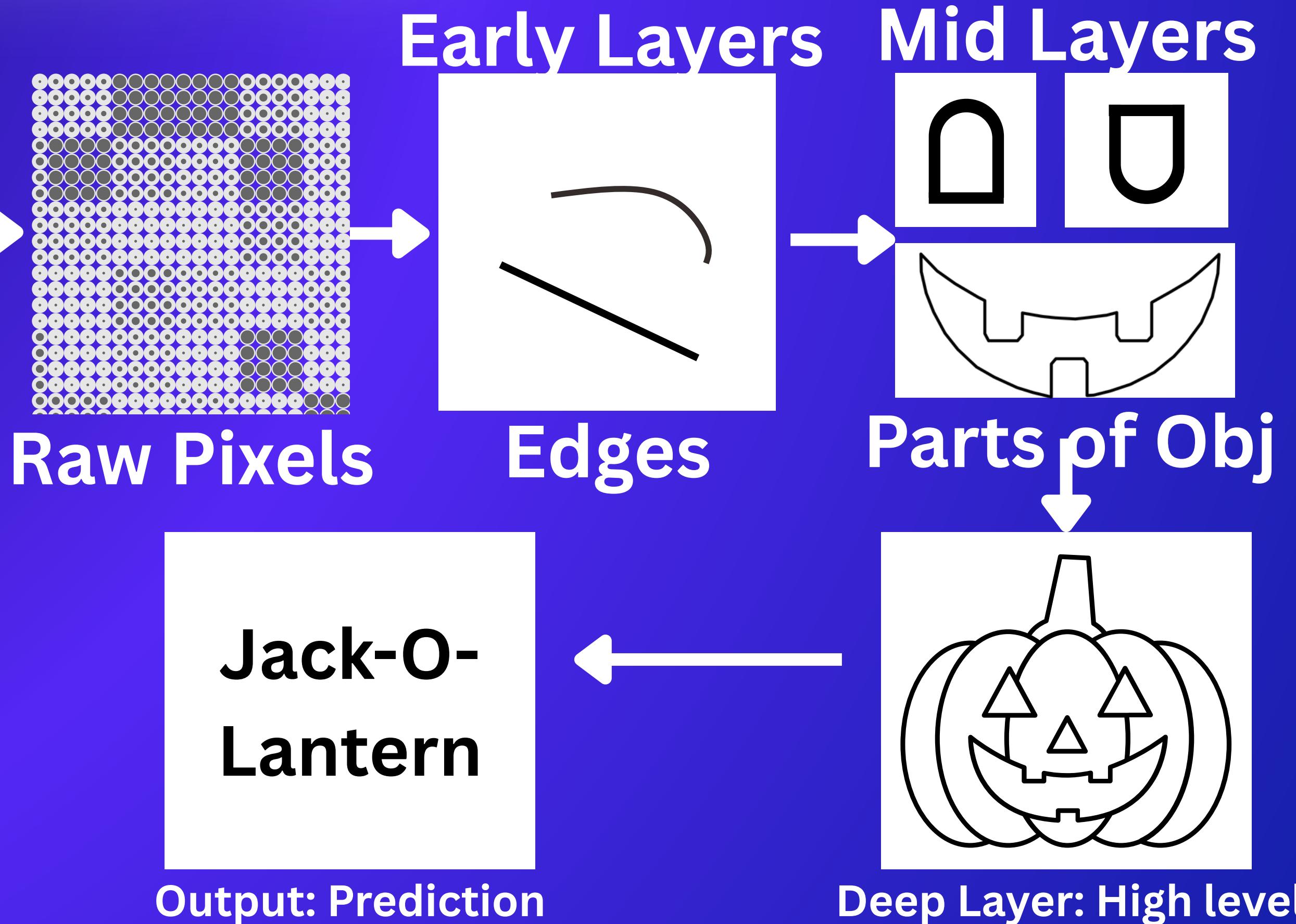


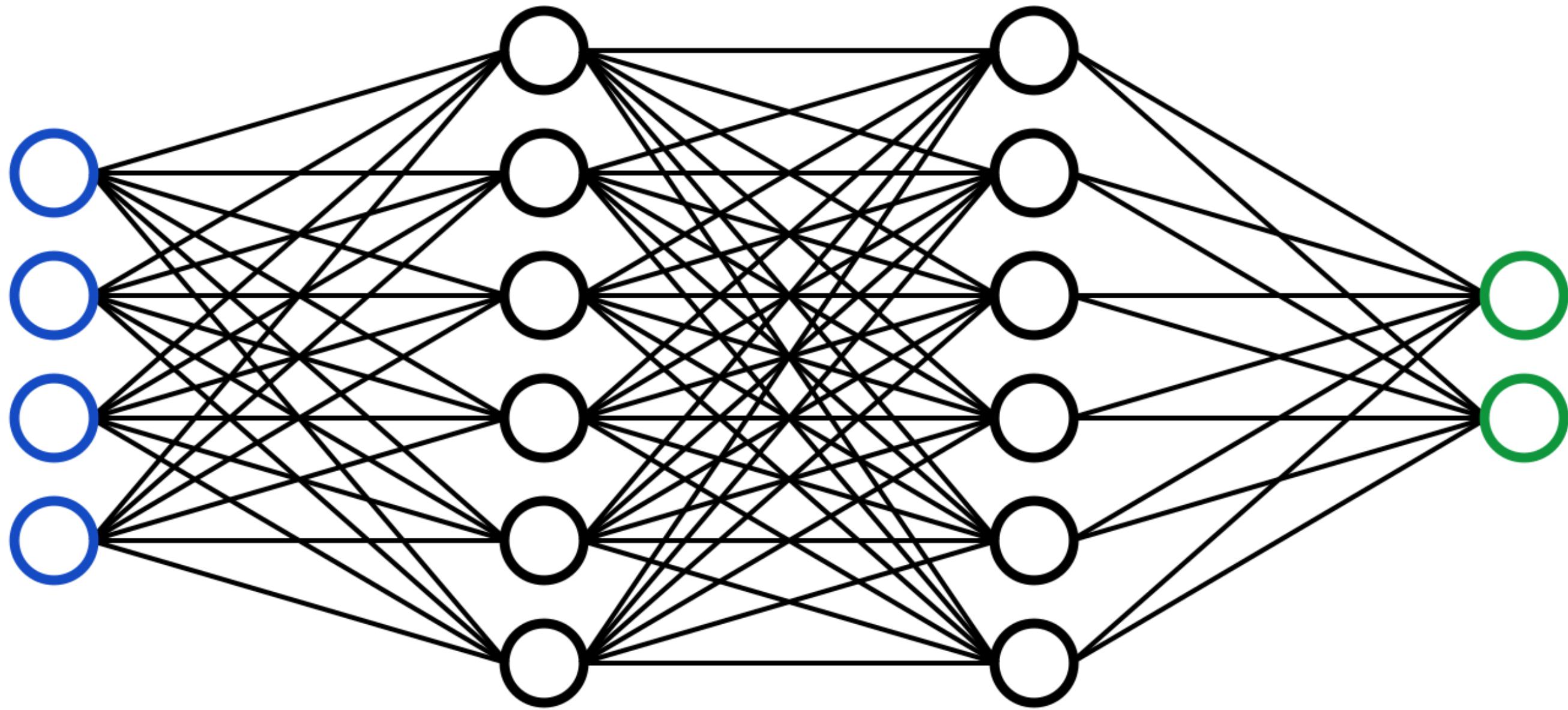
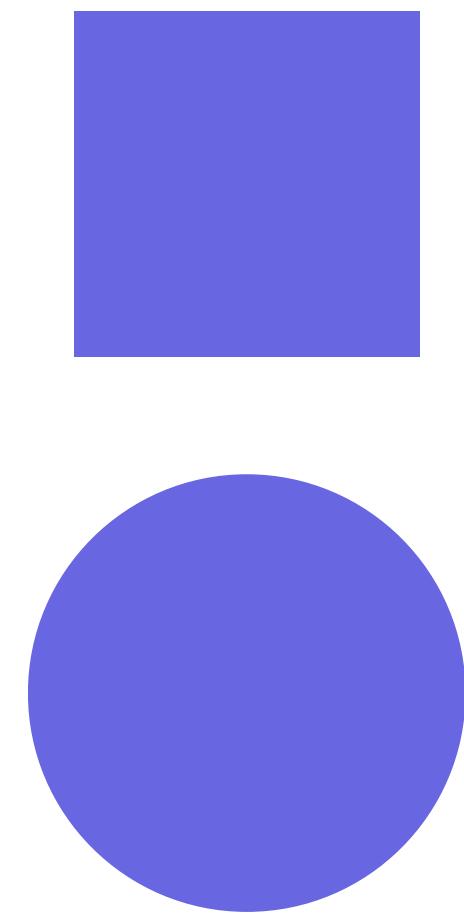
# WHAT IS NEURAL NETWORK

A NEURAL NETWORK IS A COMPUTATIONAL MODEL INSPIRED BY THE HUMAN BRAIN THAT PROCESSES DATA THROUGH LAYERS OF INTERCONNECTED NODES TO RECOGNIZE PATTERNS AND MAKE PREDICTIONS.



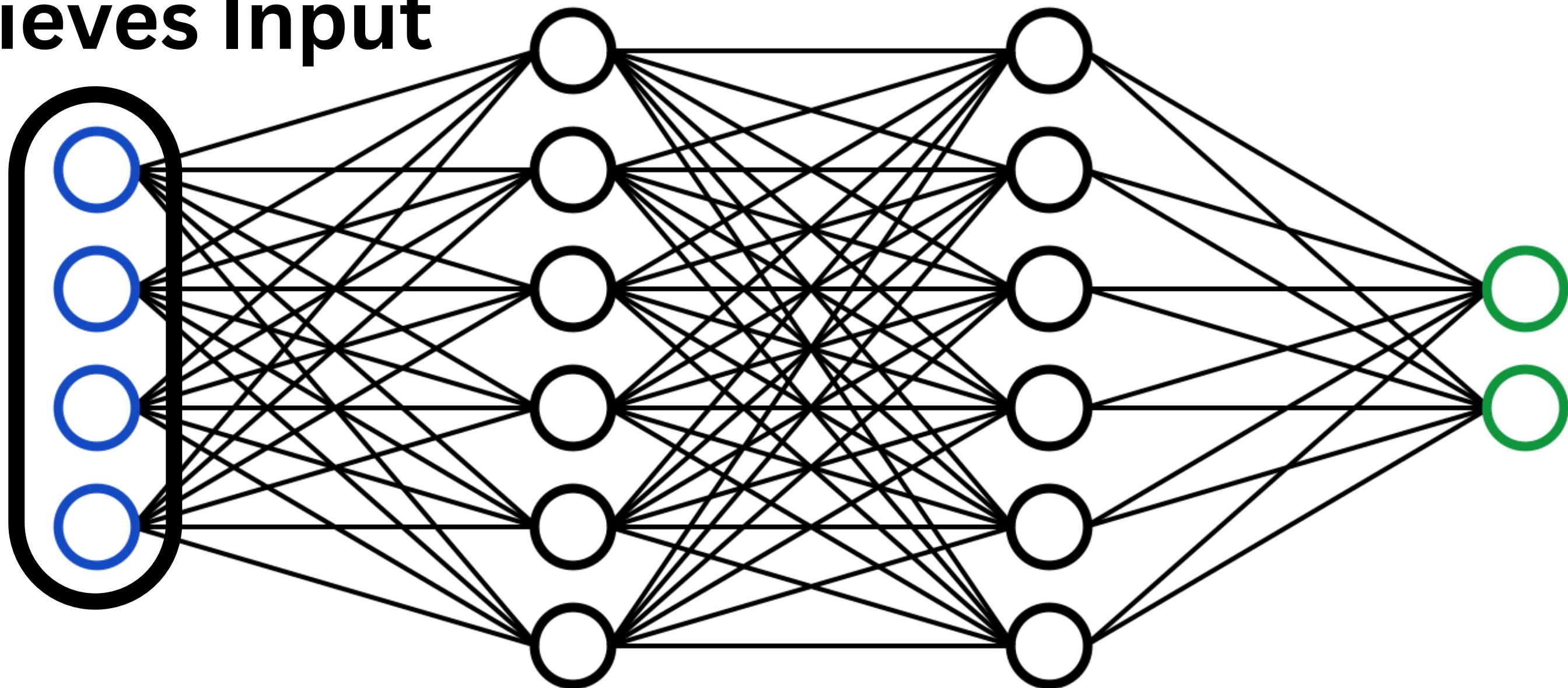
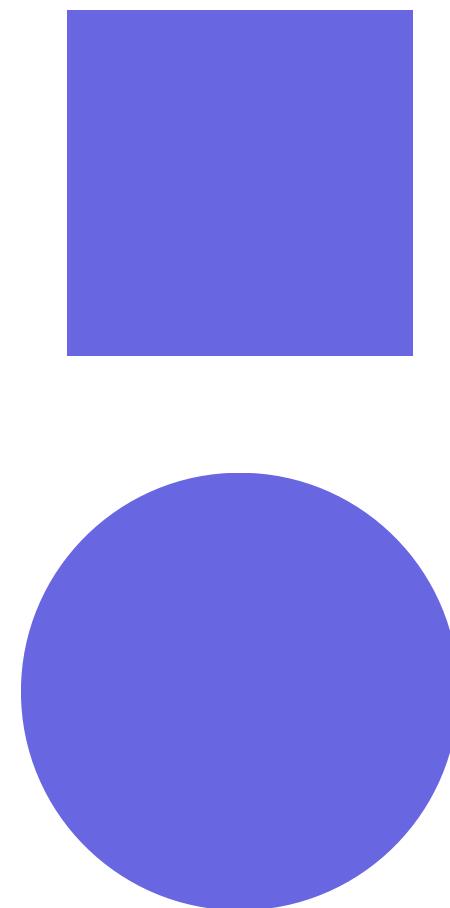
## 2. DEEP LEARNING (DL)



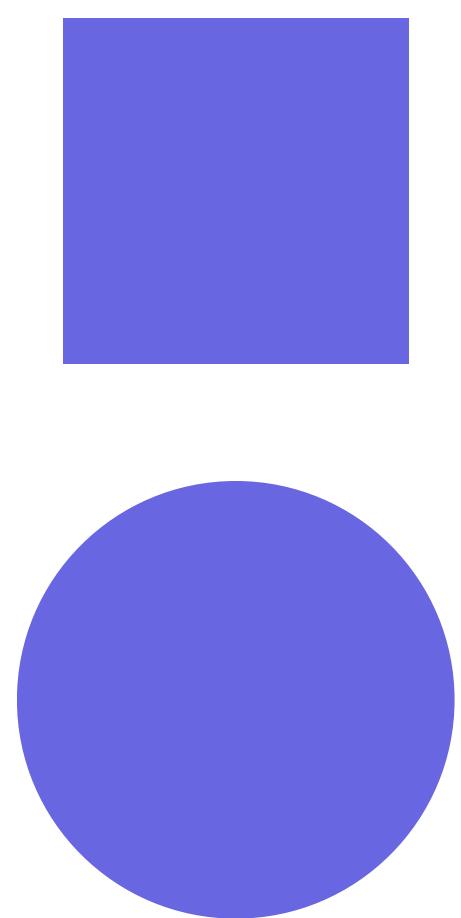
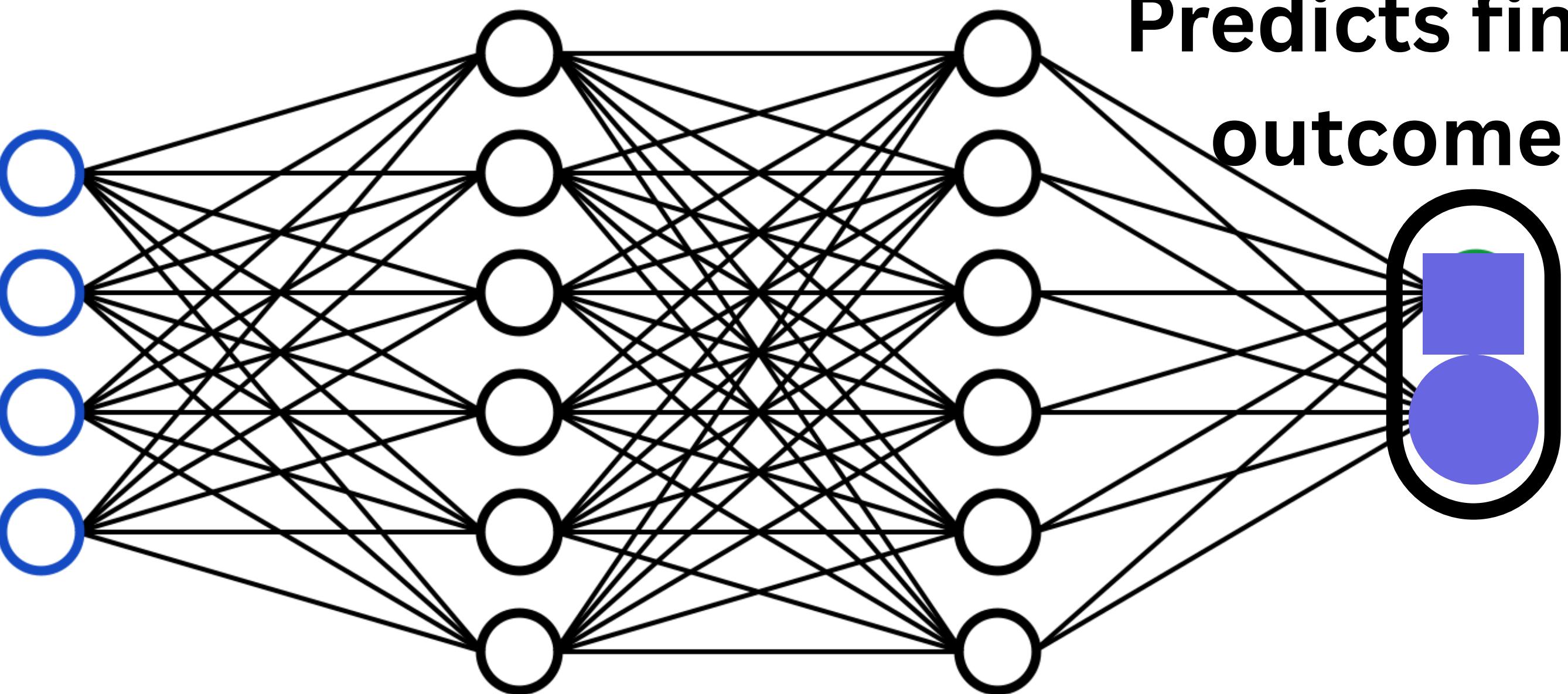


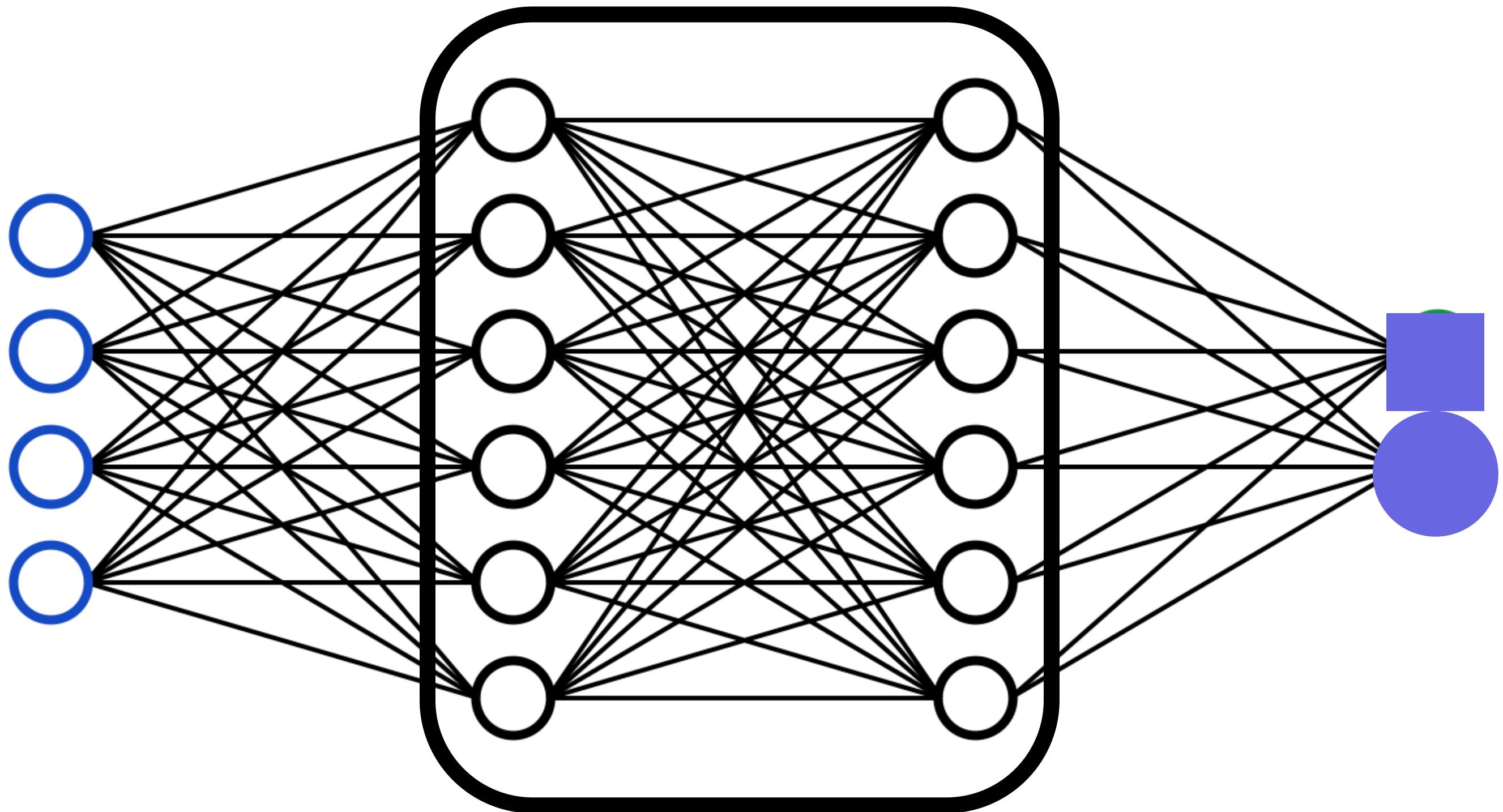
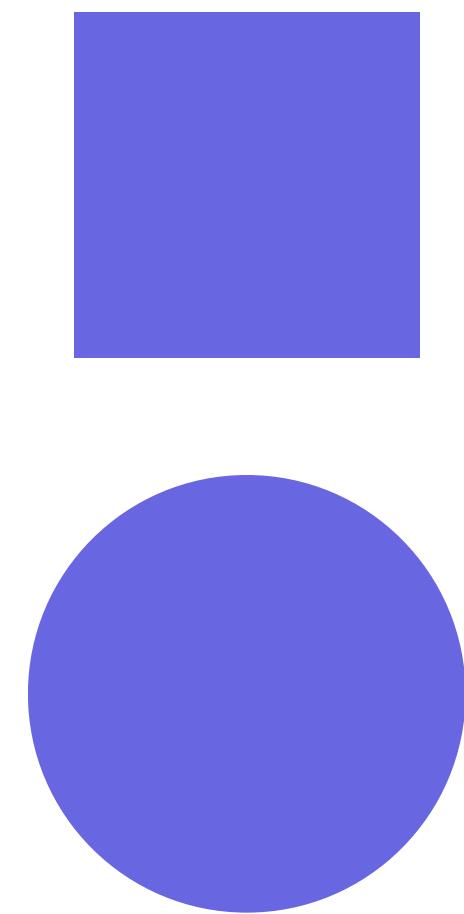
# **Input Layers:**

## **Recieves Input**



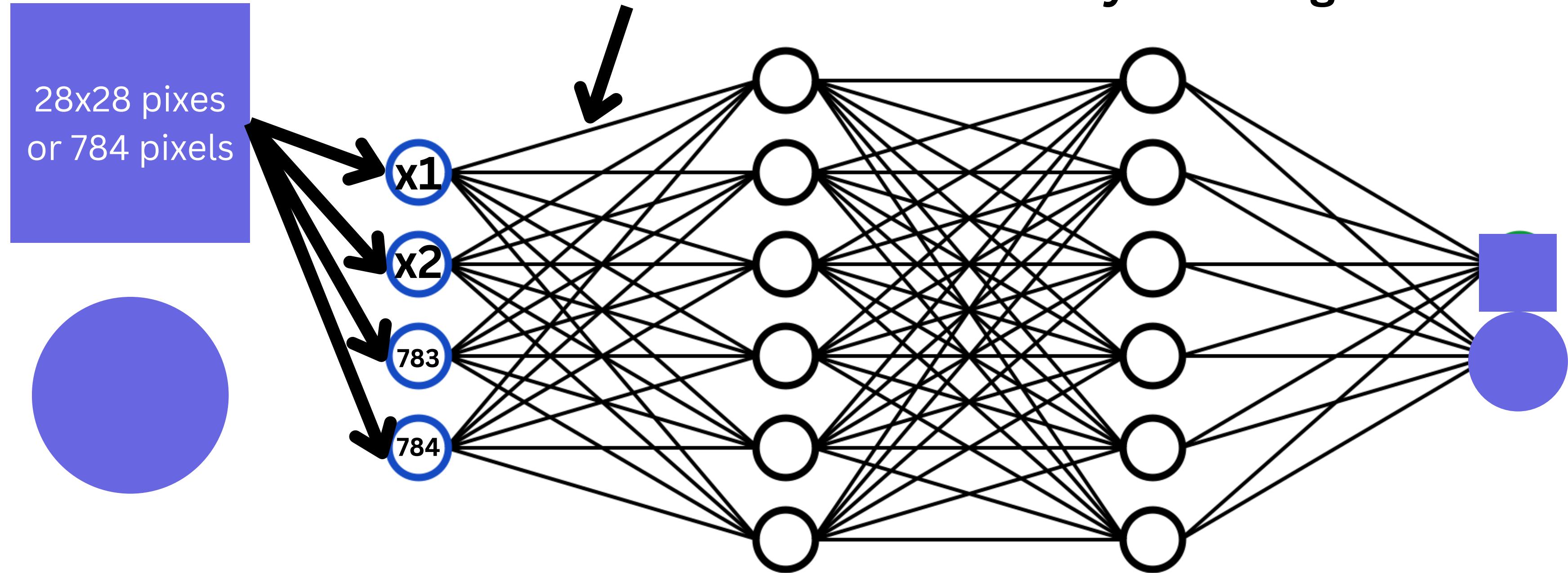
**Output Layers:**  
Predicts final  
outcome



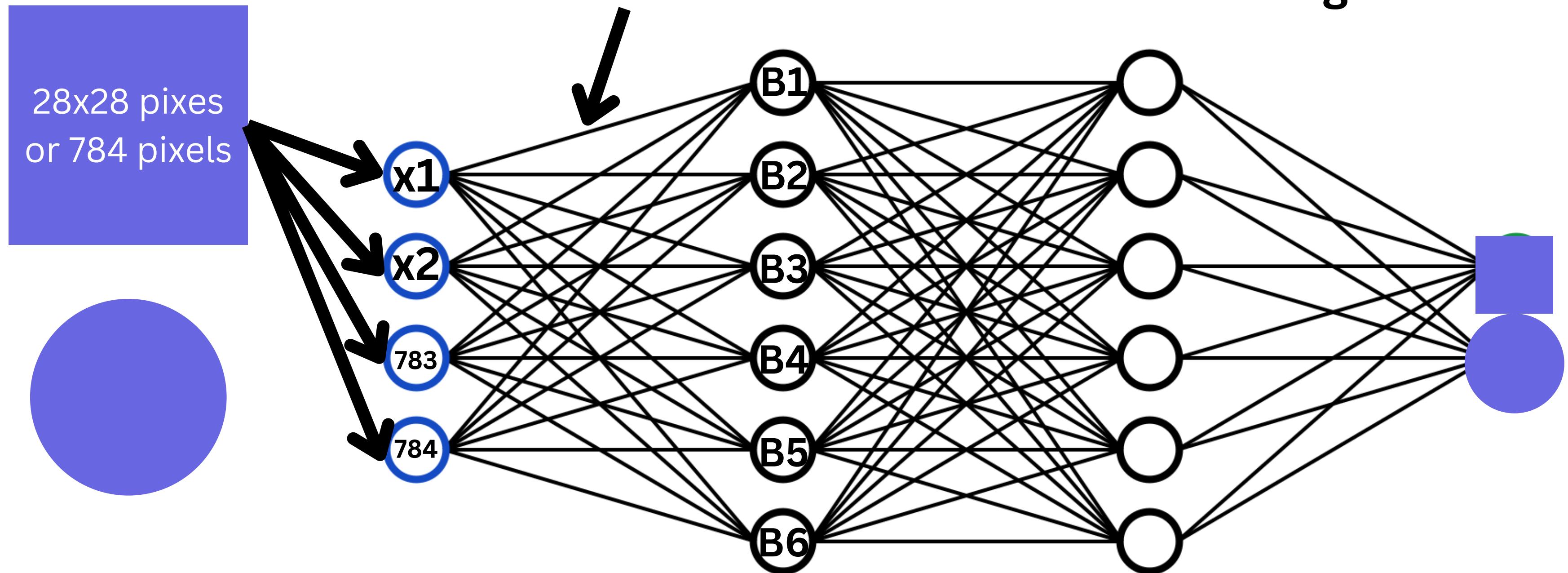


**Hidden Layers:** perform most of the computation for the network

**Neurons are connected to next layer through channels**



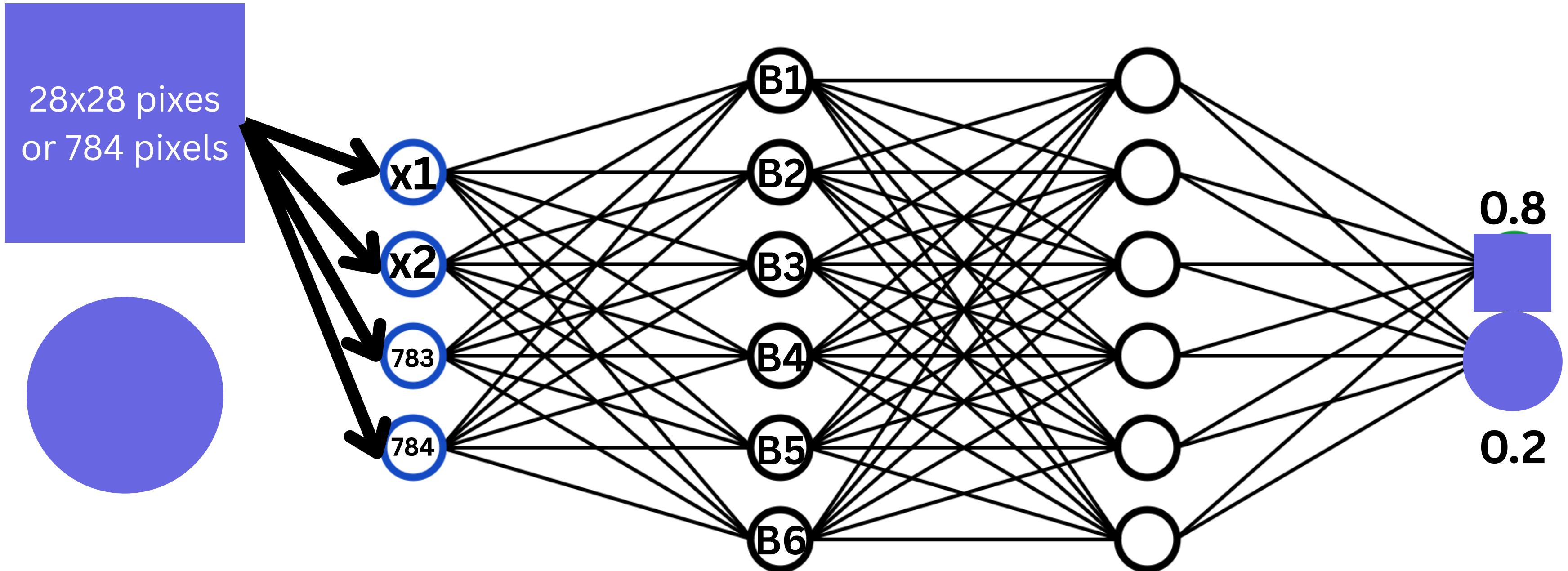
**Each pixel is fed as input to each neuron of the first layer**



$$(X_1 * 0.4 + X_2 * 0.6) + B_1$$

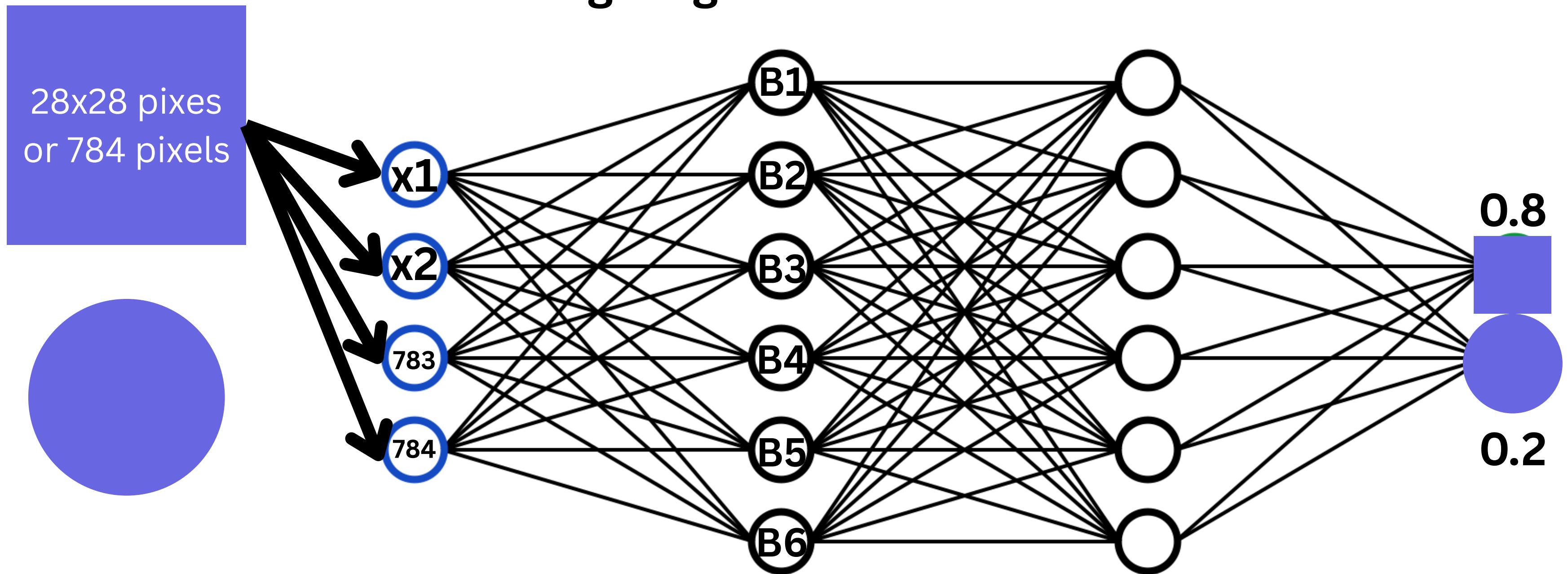
Forward Propagation → activation function to check

Does a check through activation function to  
see if the cell can be activated or not



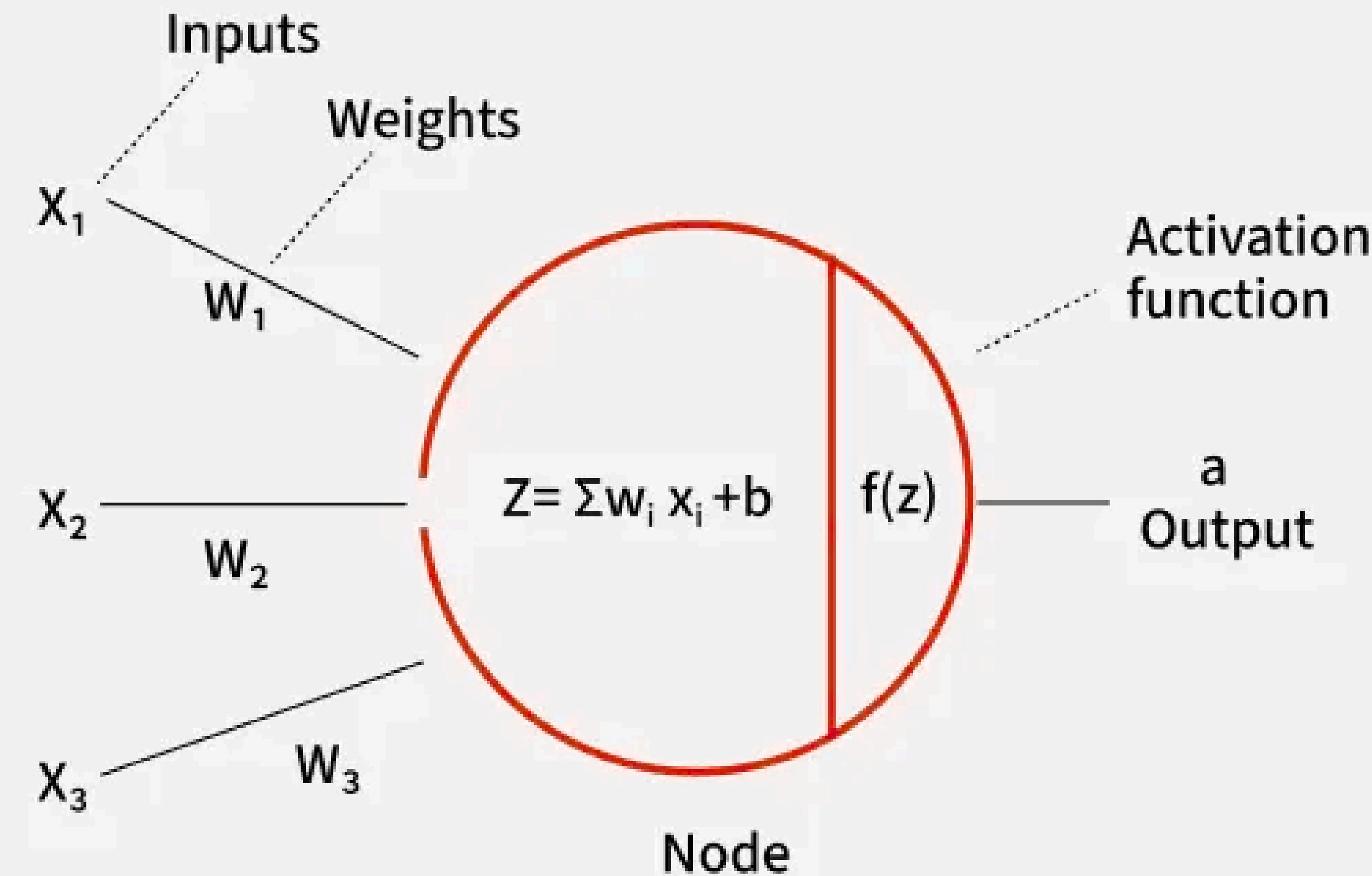
$$P(y=1|x) = \frac{1}{1 + e^{-(\sum w x + b)}}$$

Since the output is wrong the model does back propagation and adjusts the values and keeps doing it again when the results are correct



$$P(y=1|x) = \frac{1}{1 + e^{-(\sum w x + b)}}$$

## Activation functions in Neural Networks



QUESTIONS AND  
FINAL  
THOUGHTS!

**THANK YOU!**