

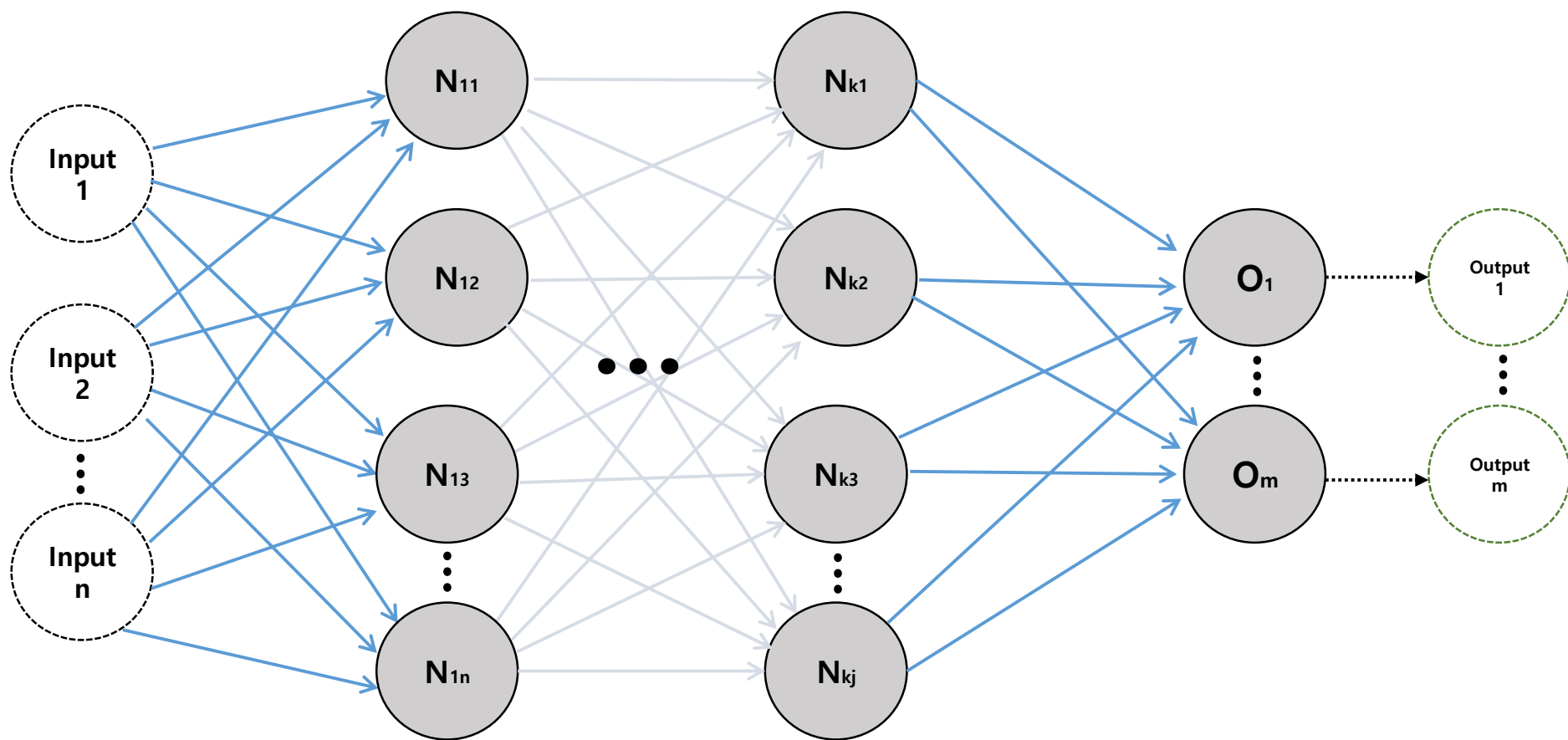
Input

Hidden layer

Output layer

Output





**n-Input**

**k-Hidden layers  $\rightarrow$  deep layer**

**m-Output layer**

# A mostly complete chart of Neural Networks

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-  Backfed Input Cell
-  Input Cell
-  Noisy Input Cell
-  Hidden Cell
-  Probabilistic Hidden Cell
-  Spiking Hidden Cell
-  Output Cell
-  Match Input Output Cell
-  Recurrent Cell
-  Memory Cell
-  Different Memory Cell
-  Kernel
-  Convolution or Pool

Perceptron (P)



Feed Forward (FF)



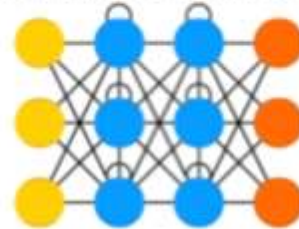
Radial Basis Network (RBF)



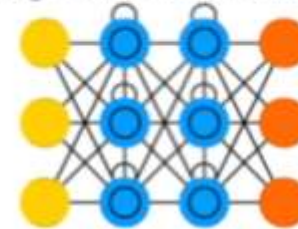
Deep Feed Forward (DFF)



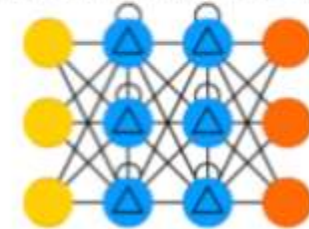
Recurrent Neural Network (RNN)



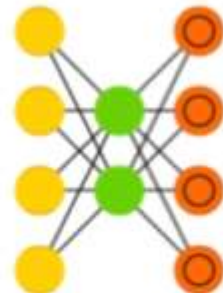
Long / Short Term Memory (LSTM)



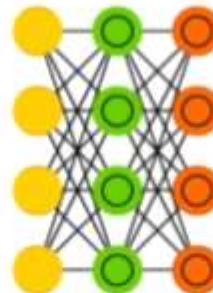
Gated Recurrent Unit (GRU)



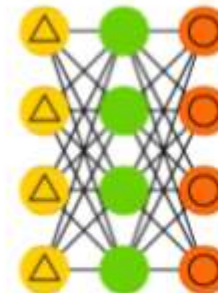
Auto Encoder (AE)



Variational AE (VAE)



Denoising AE (DAE)



Sparse AE (SAE)

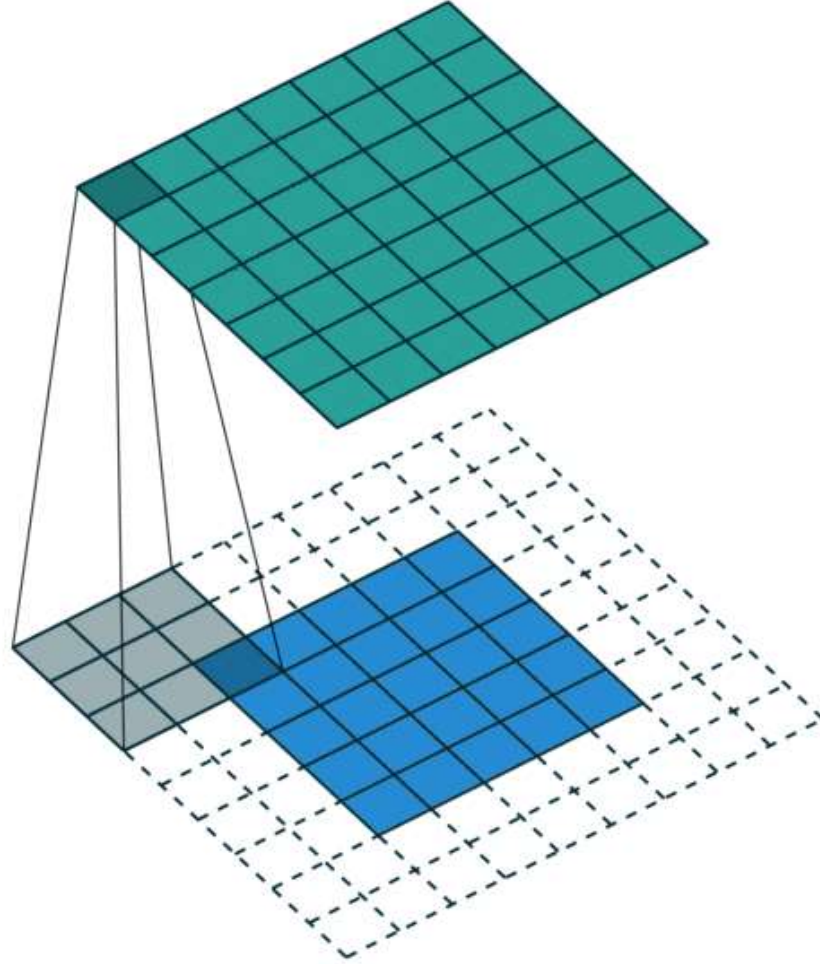


# Deep Learning of Images

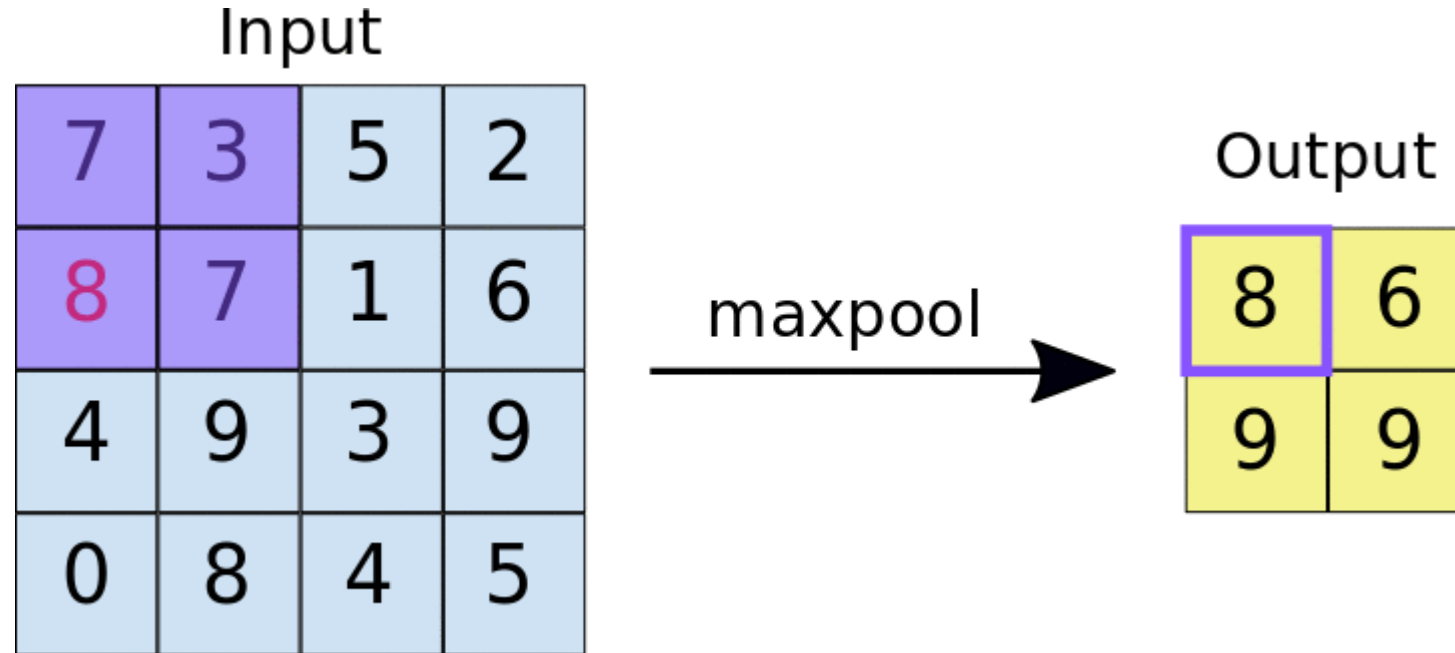
→ Conv2D



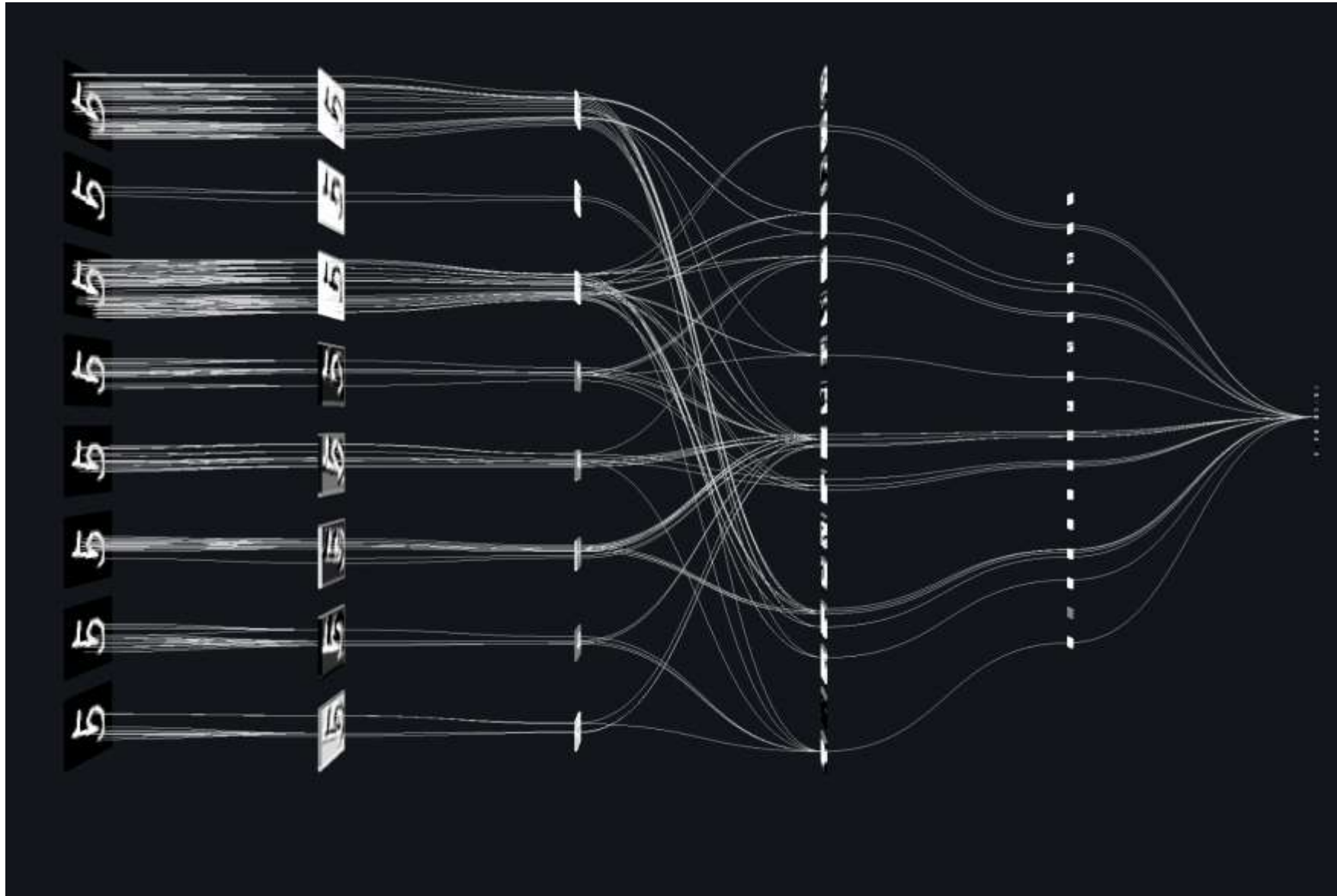
# Conv2D



# Max-Pooling

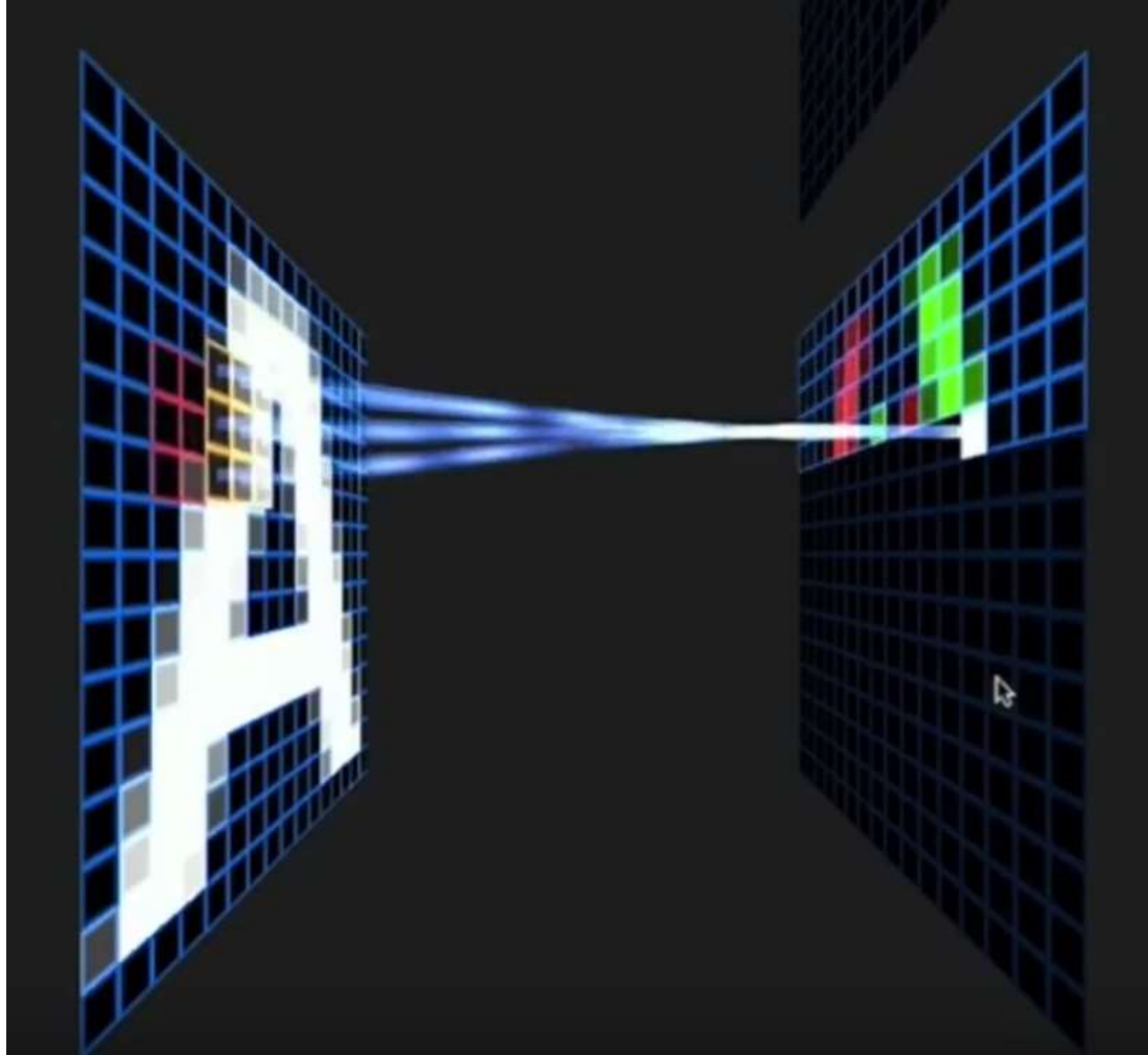


# Convolution & Pooling



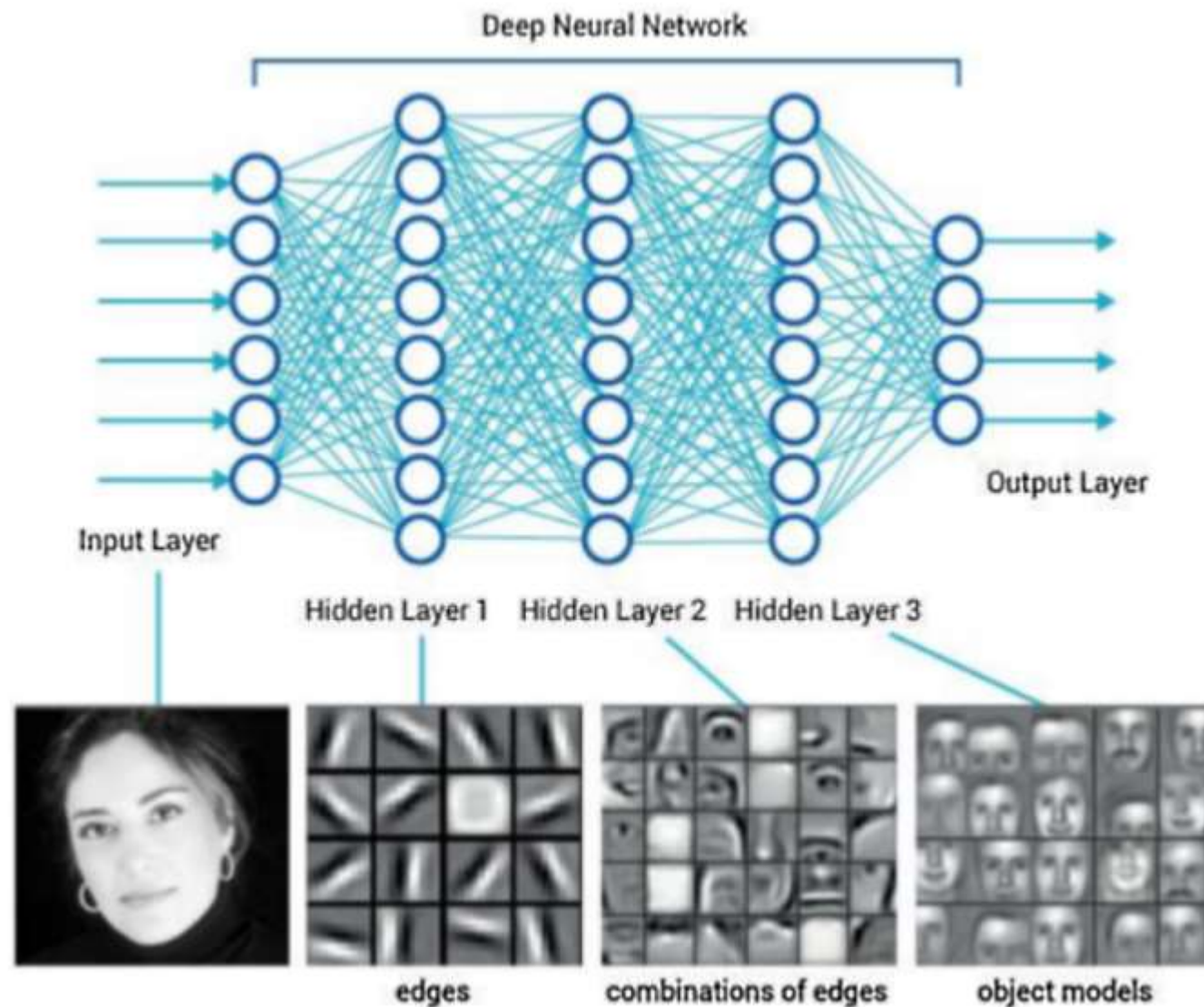
[https://miro.medium.com/max/2250/1\\*dOv2a1ctNrHDo8Zks30Bbw.png](https://miro.medium.com/max/2250/1*dOv2a1ctNrHDo8Zks30Bbw.png)

# Convolution & Pooling



<https://www.youtube.com/watch?v=f0t-OCG79-U>

# How does DL work on images?





# Going deeper in the network

