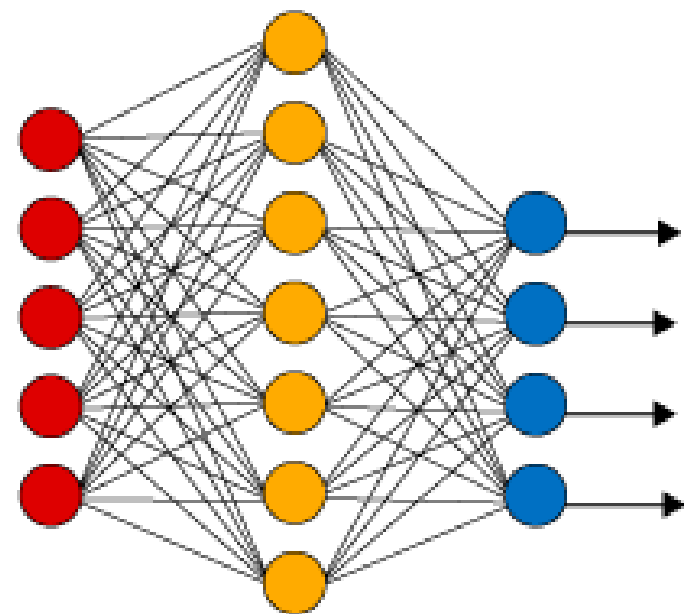# Introduction To Various Neural Network Architectures

Ankur Bohra
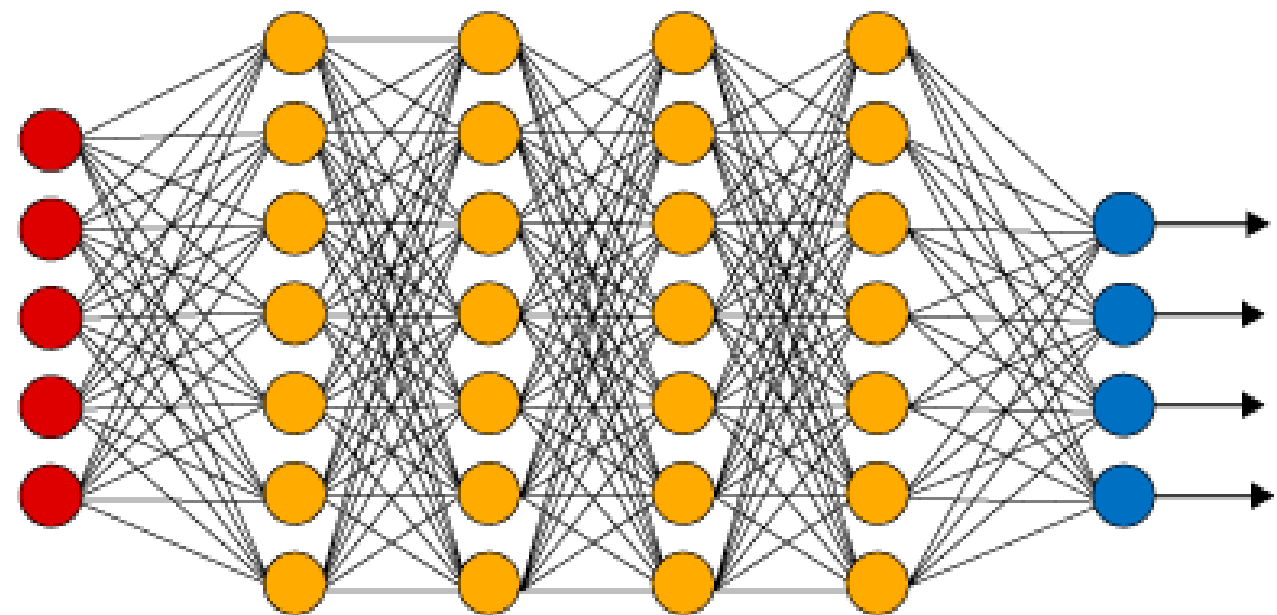
What are Neural Networks?

Universal Approximation Theorem
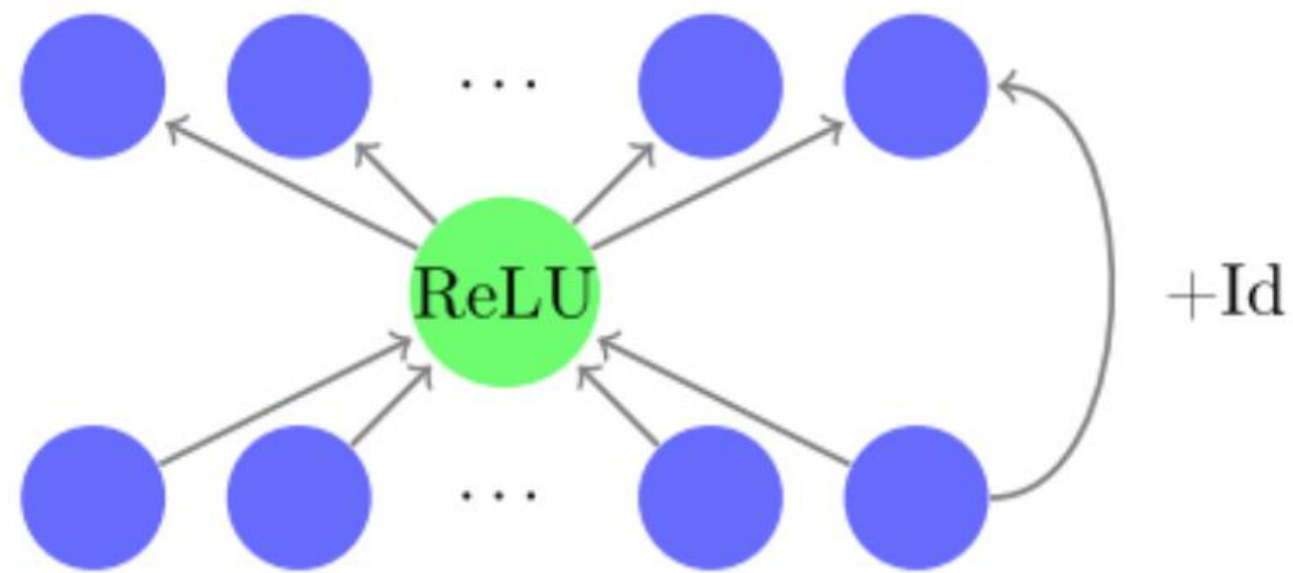
Simple Neural Network

Deep Learning Neural Network
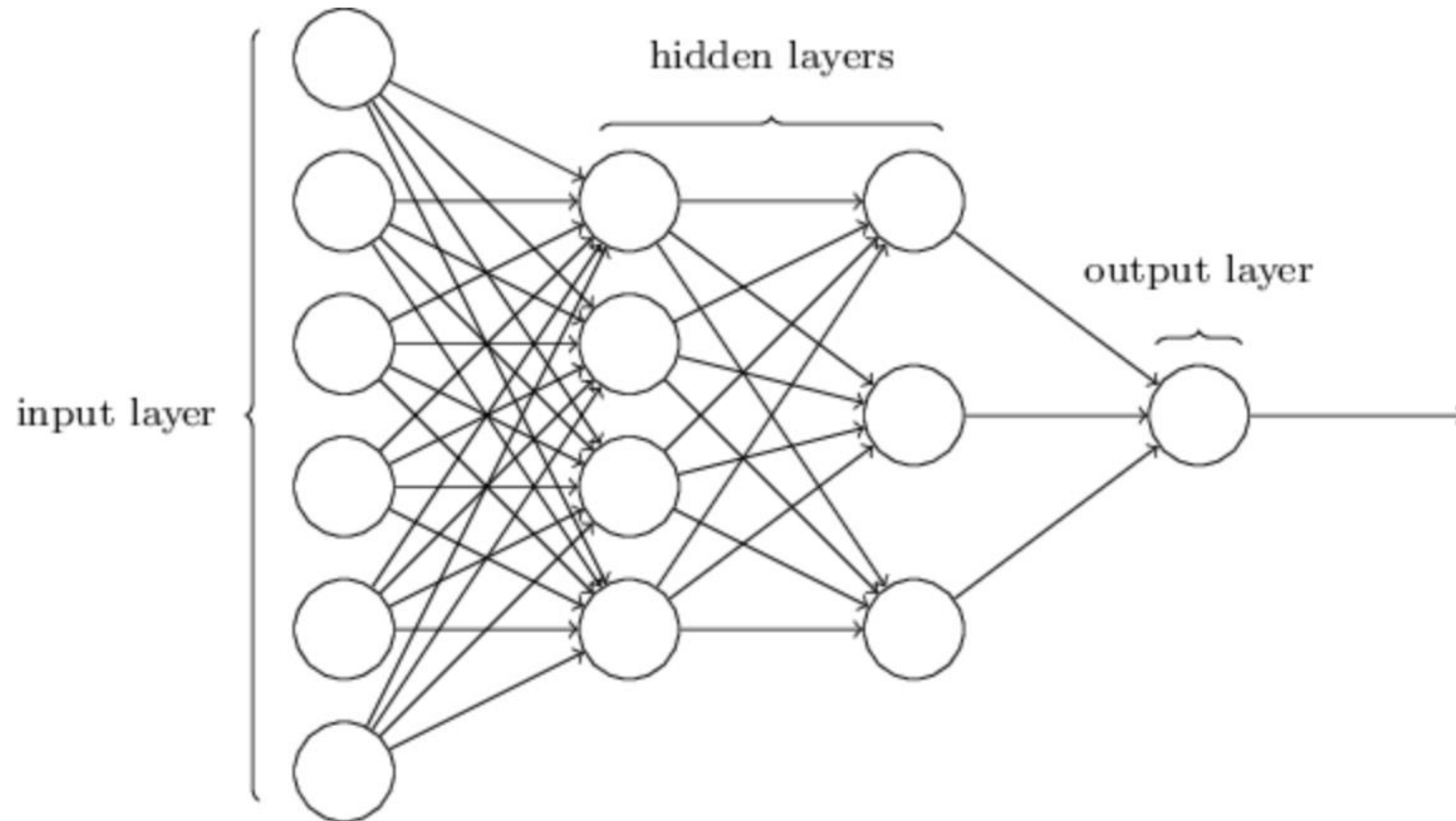
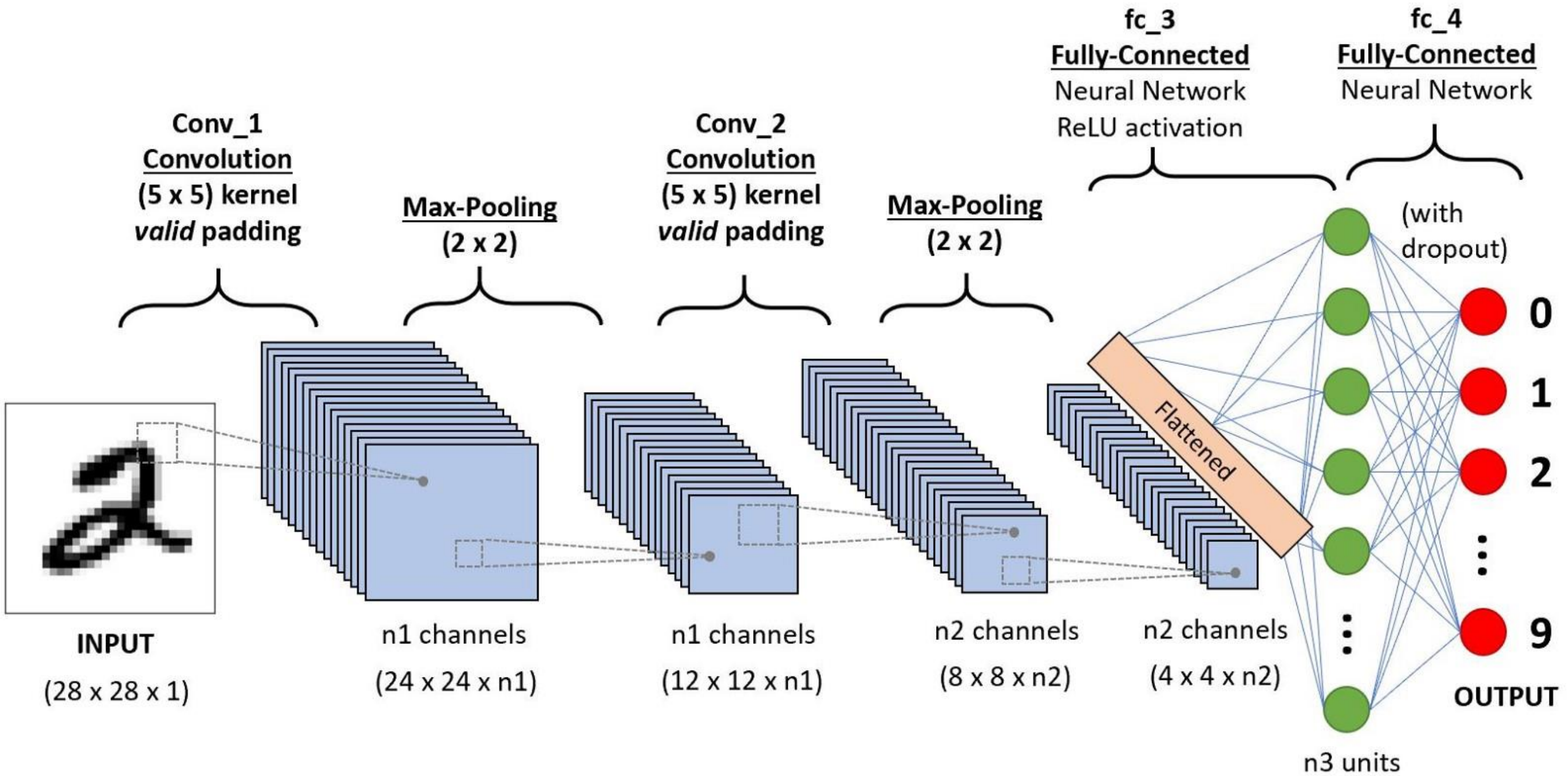● Input Layer ● Hidden Layer ● Output Layer

Universal Approximation Theorem for The One-Neuron ResNet

Why do you need different architectures?
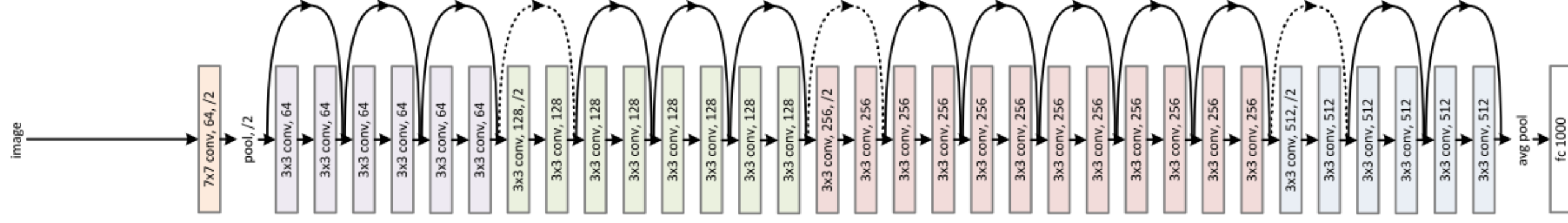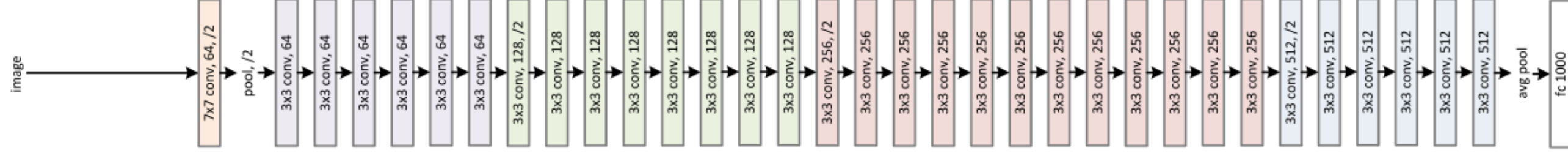
Feed Forward Network

CNN

Resnet

RNN
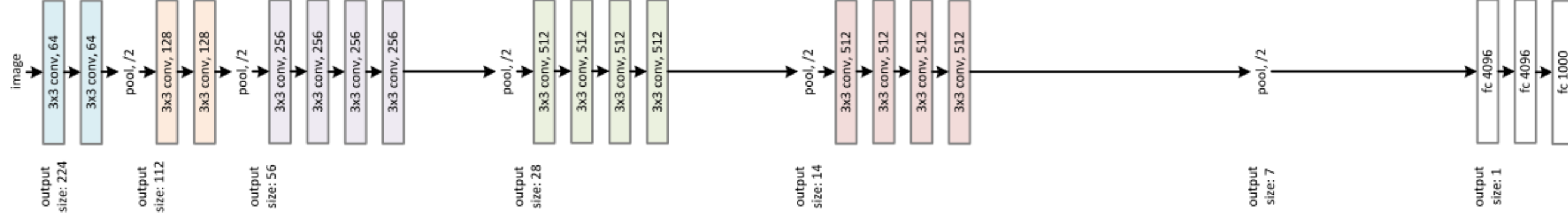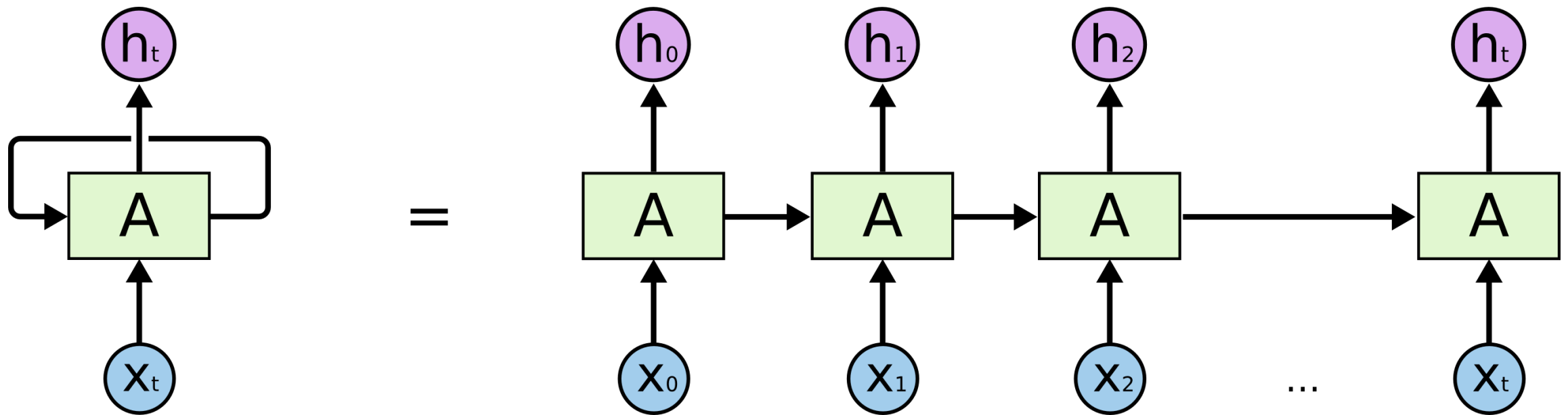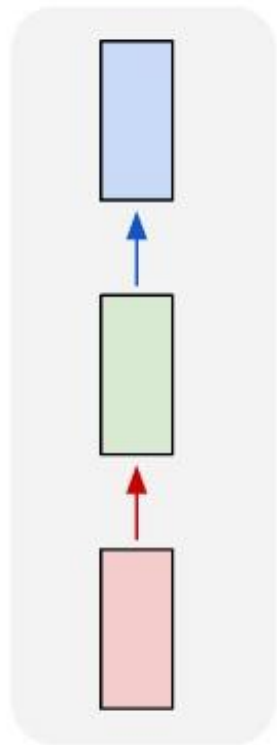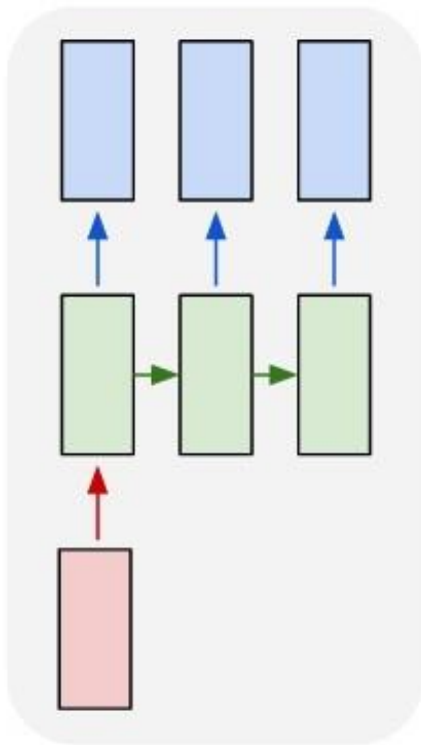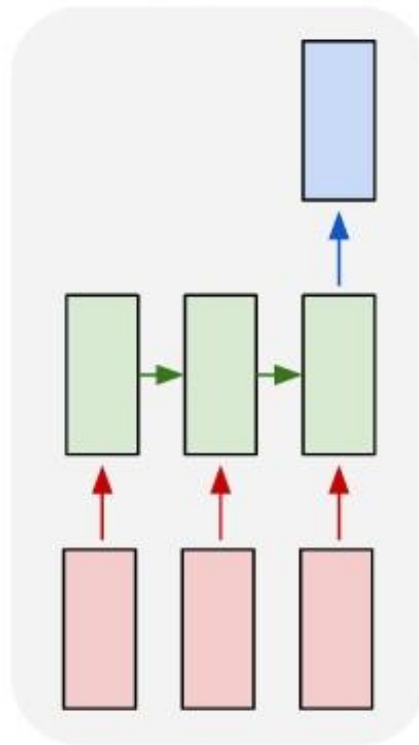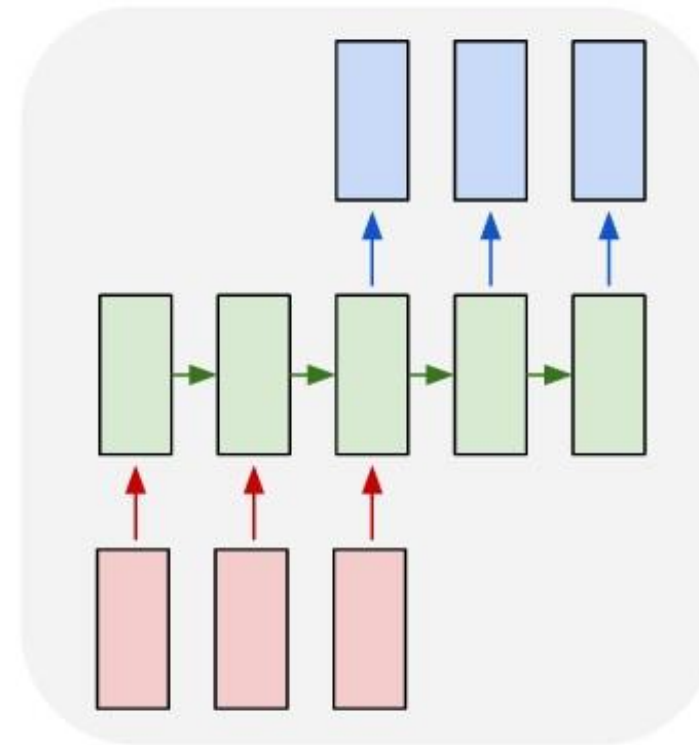
RNN Input/Output Sequence
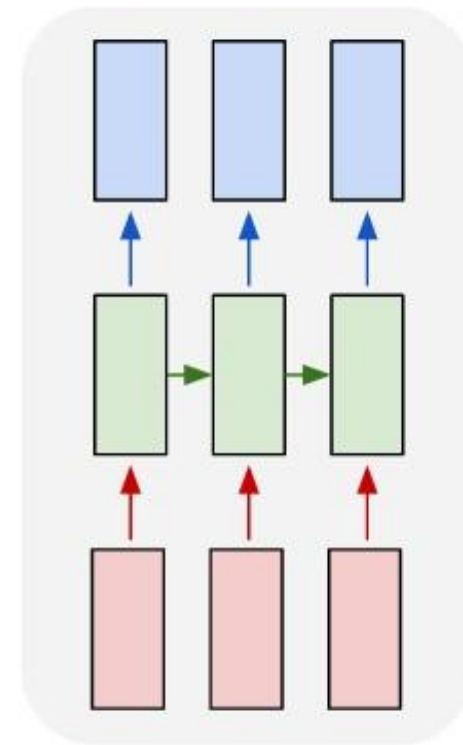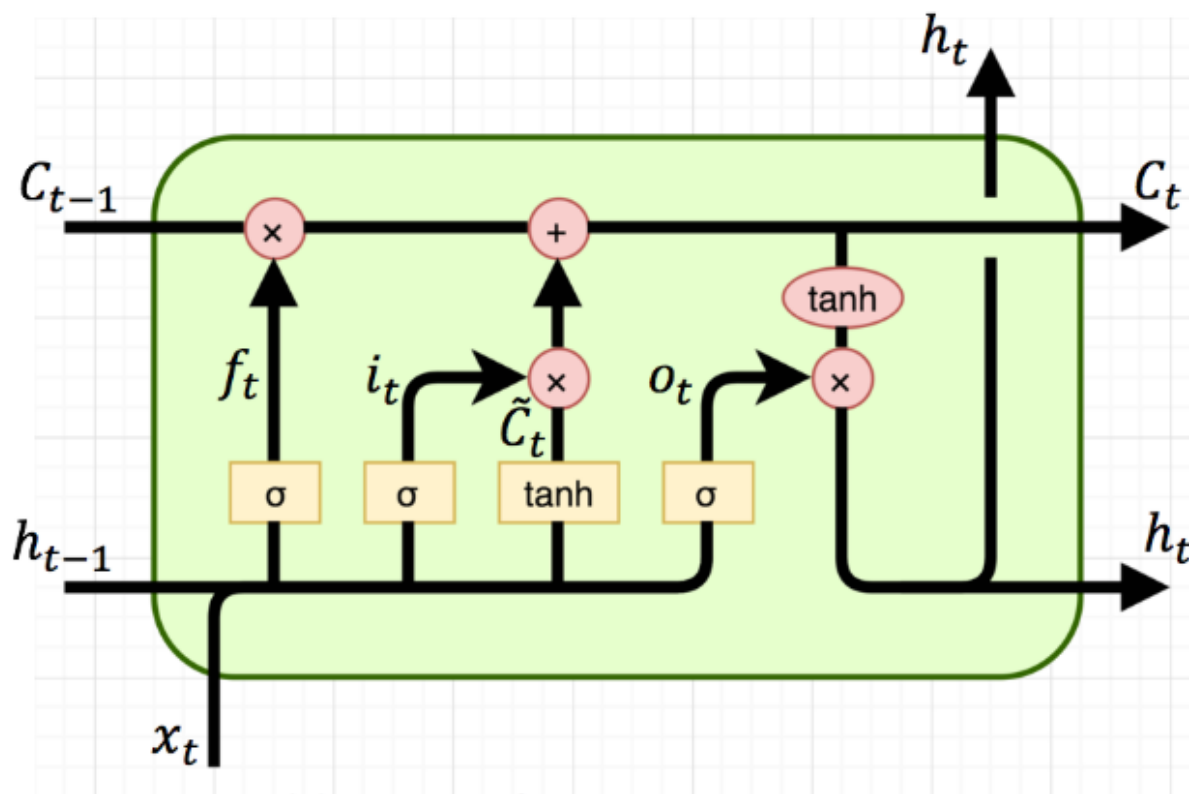

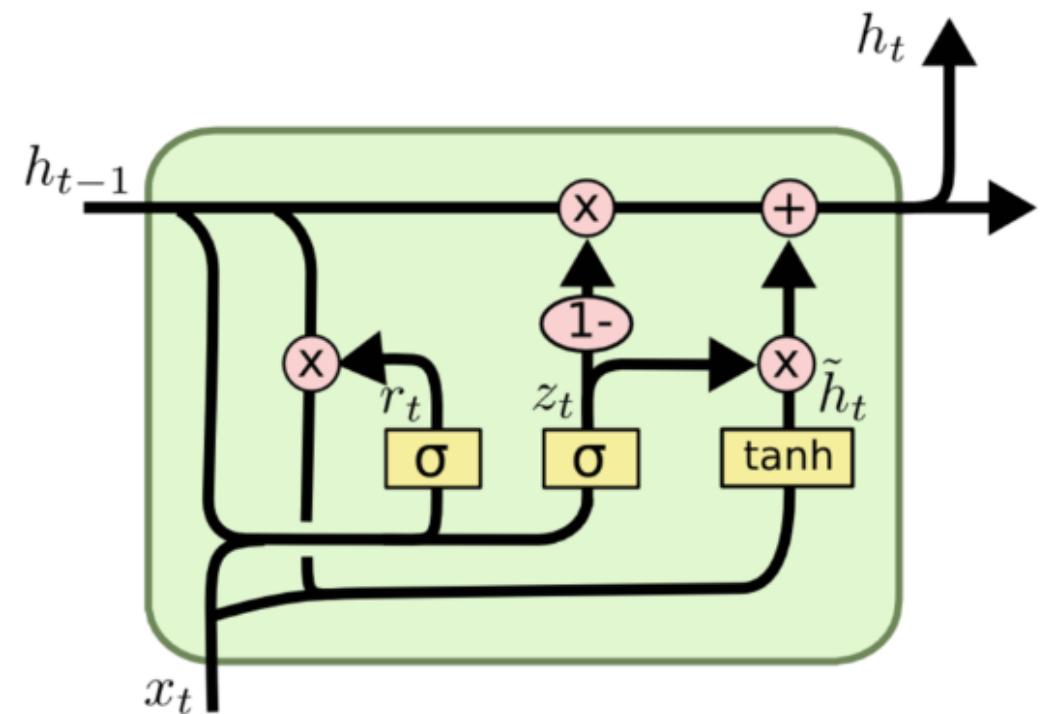one to one   one to many   many to one   many to many   many to many
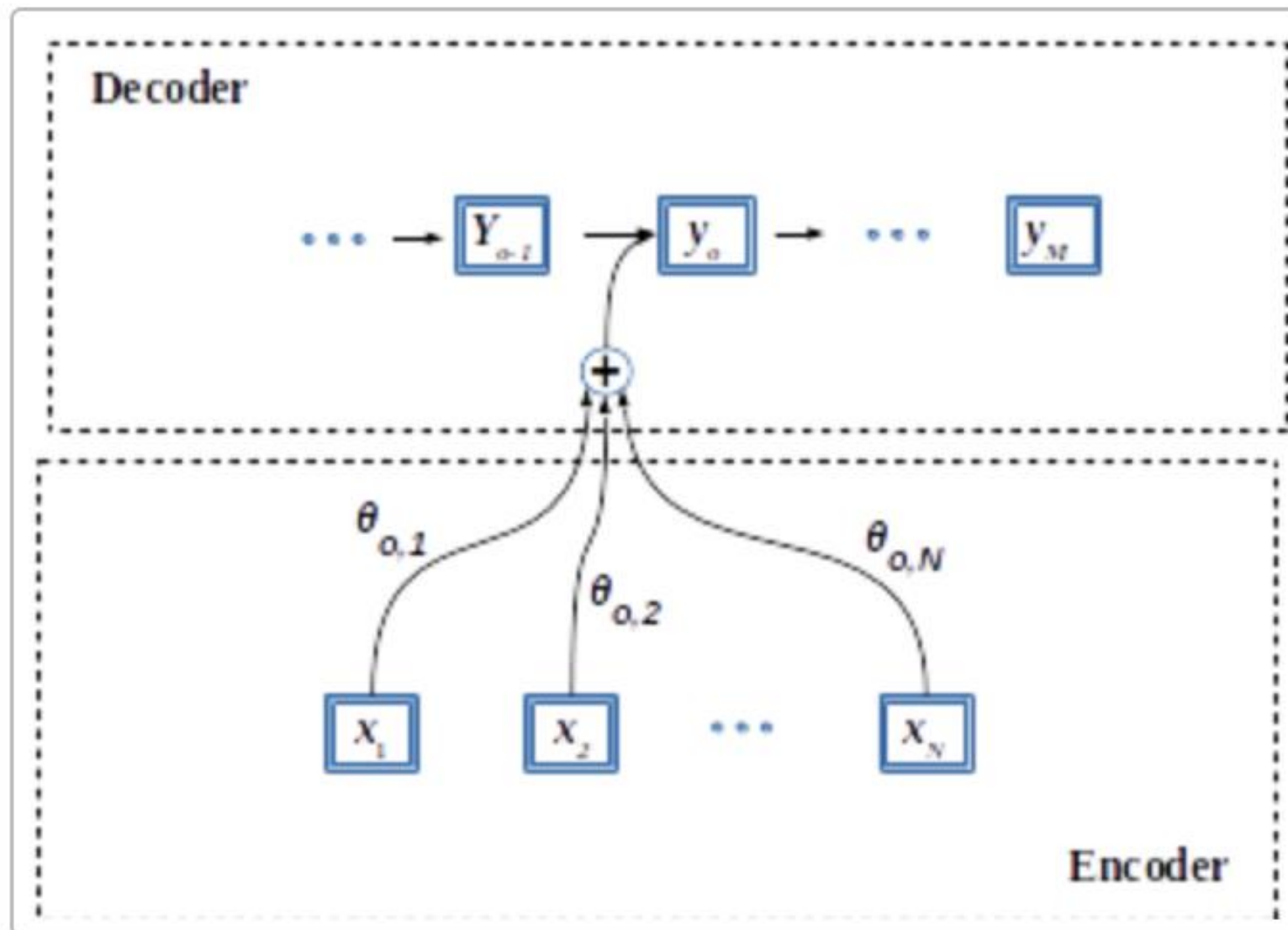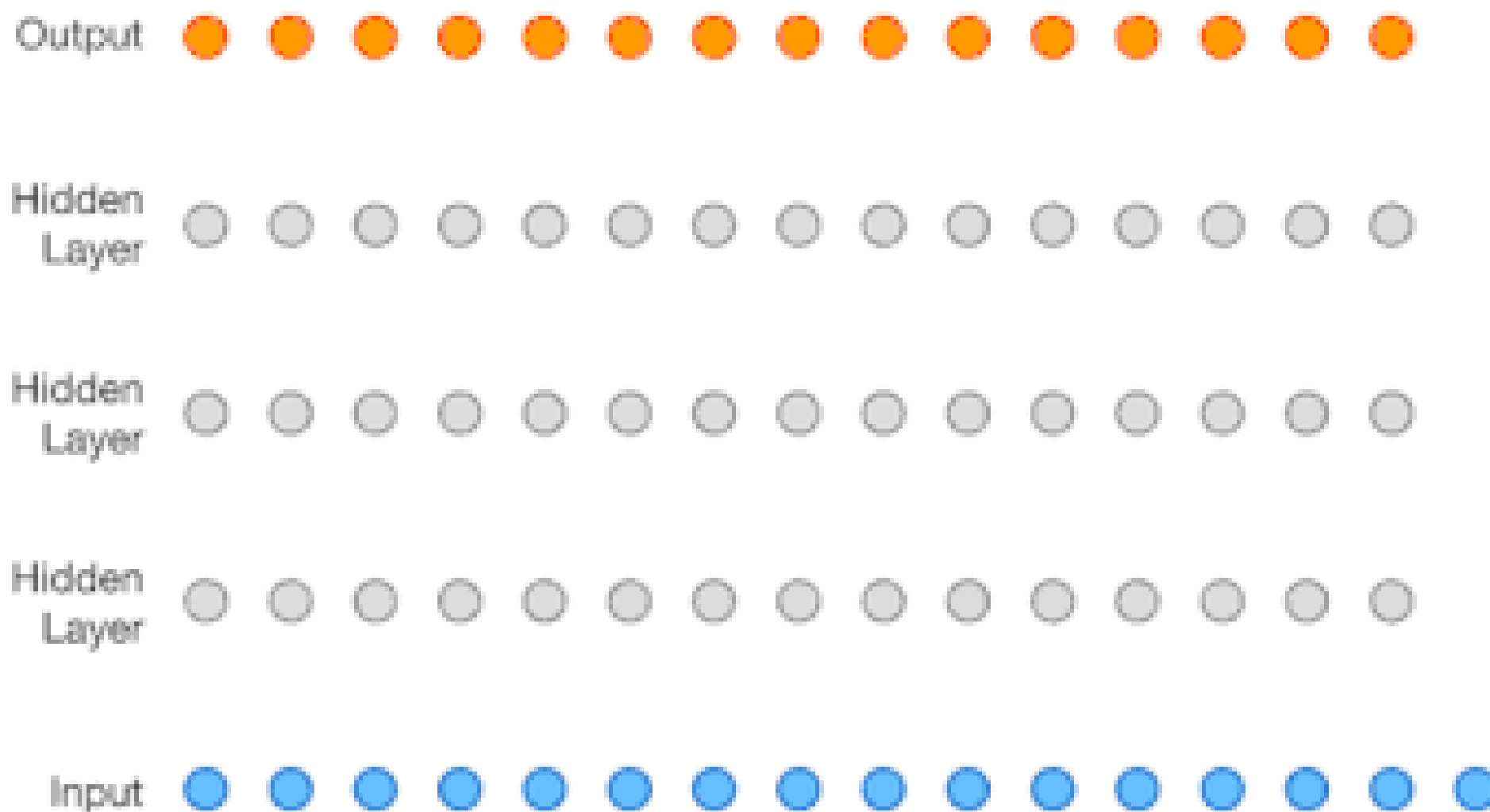
LSTM and GRU

(a) Long Short-Term Memory

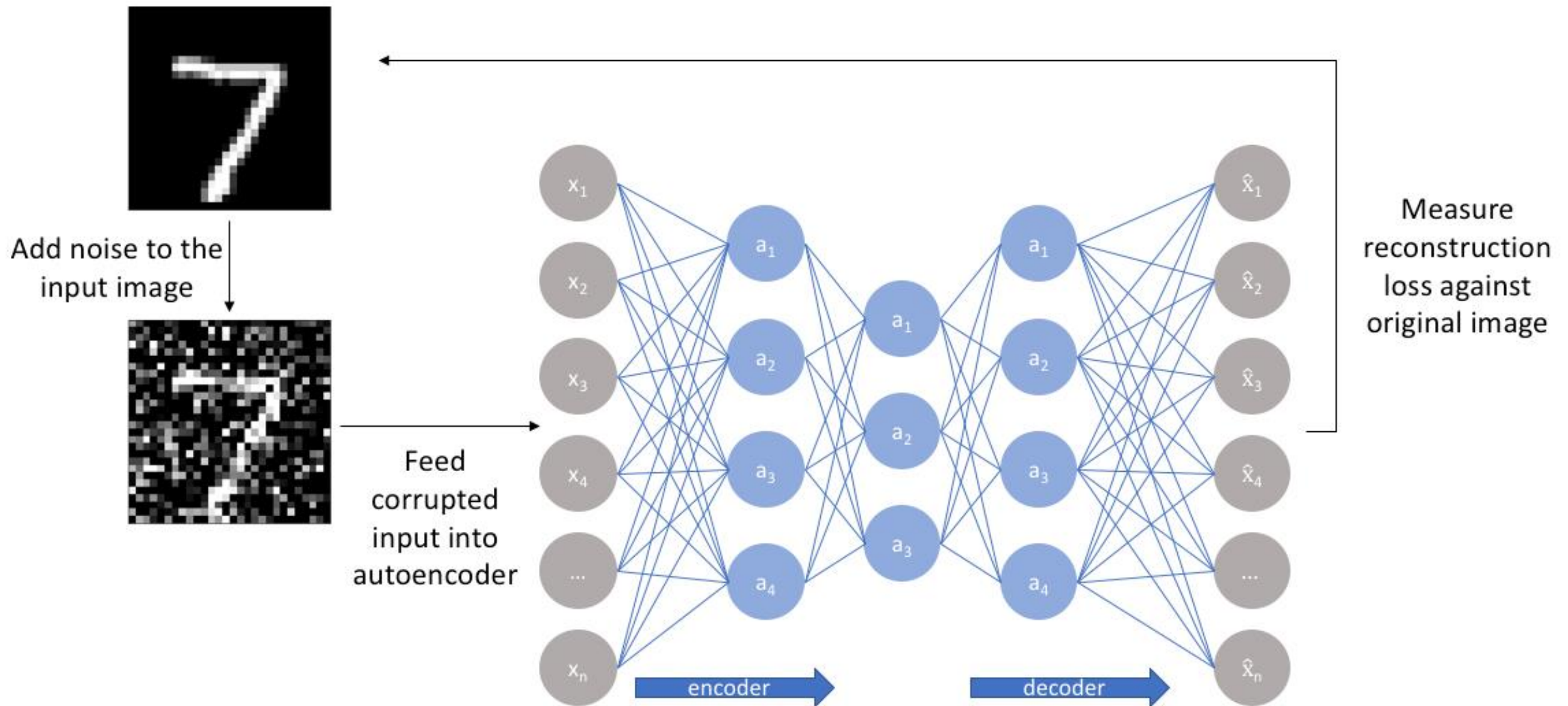(b) Gated Recurrent Unit

Attention Network

. la maison de Léa <end> .

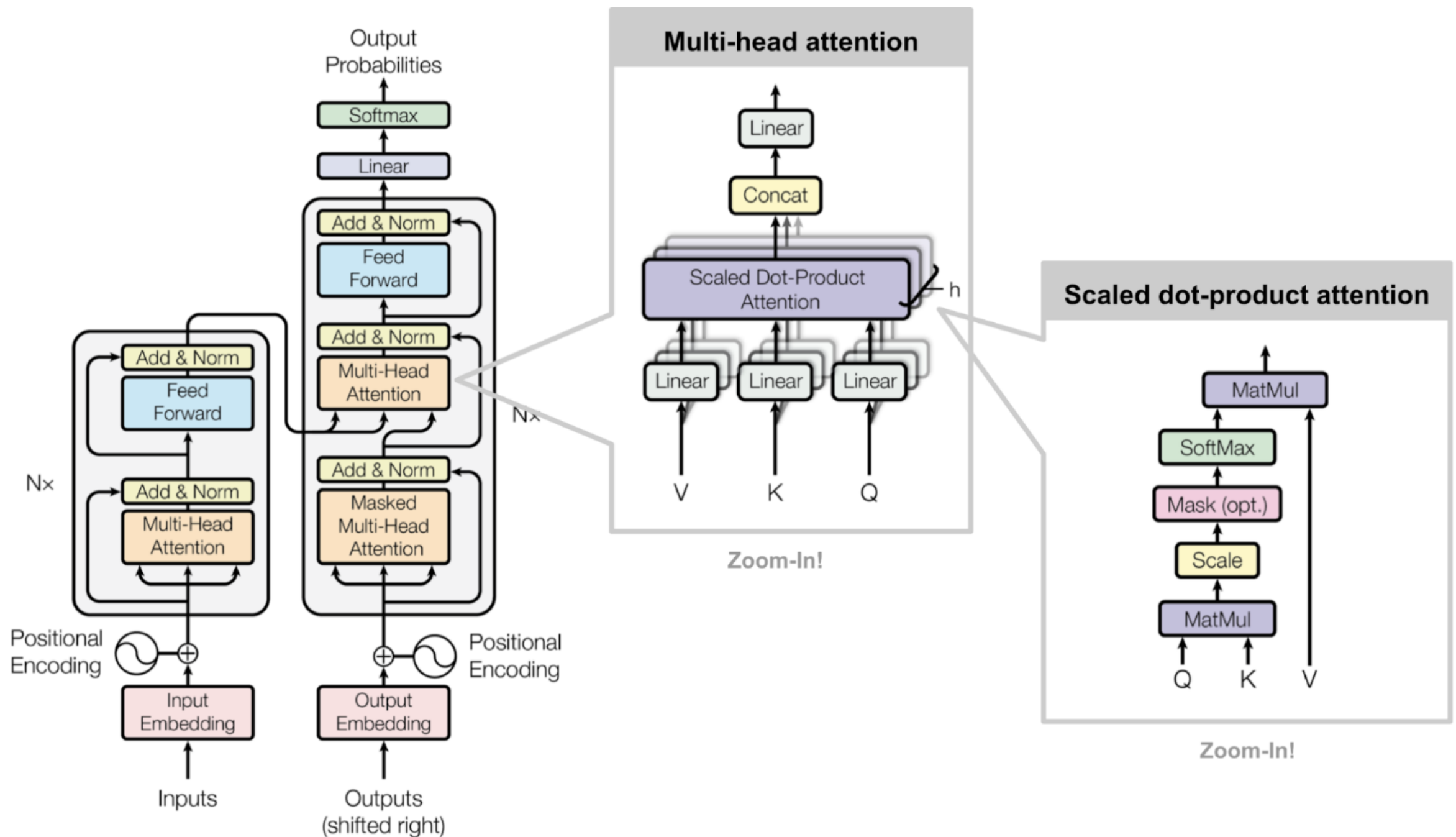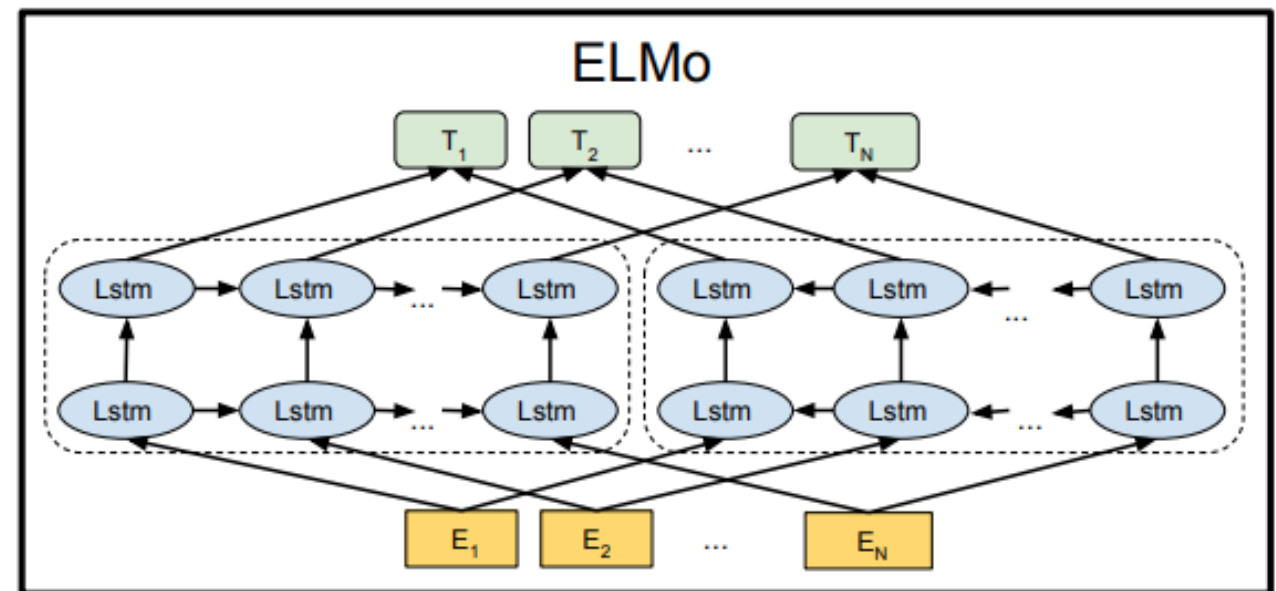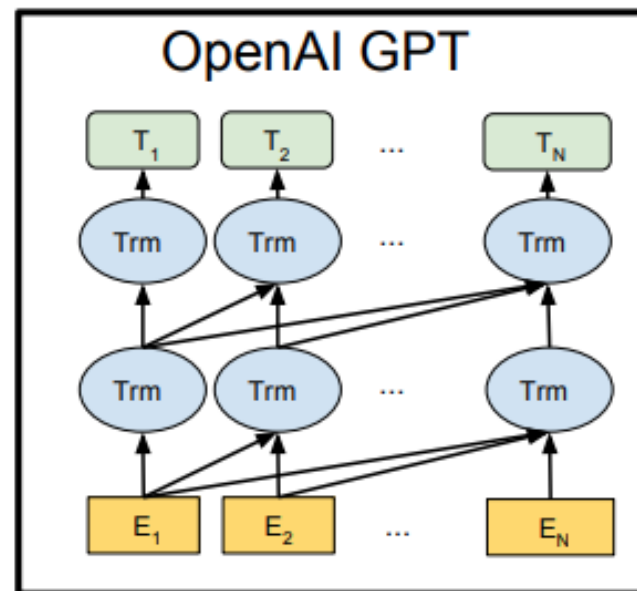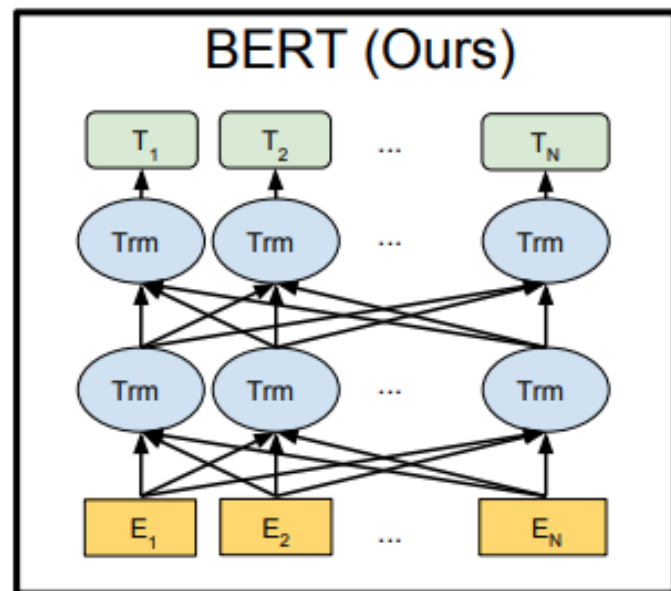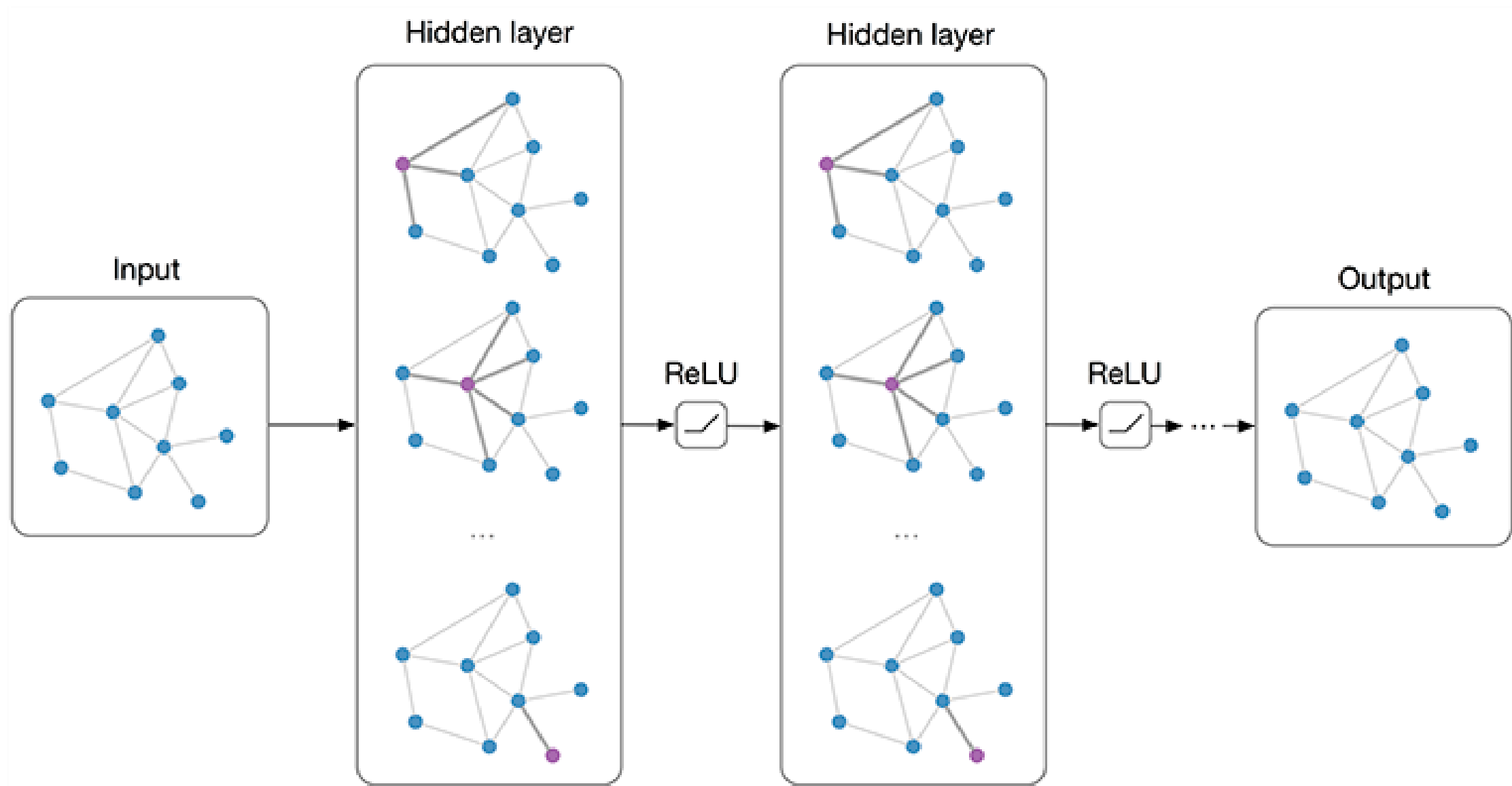# Wavenet (Autoregressive)

Auto-encoders

Transformer

Fig. 17. The full model architecture of the transformer. (Image source: Fig 1 & 2 in Vaswani, et al., 2017.)

BERT, GPT & ELMO

GNN

Questions?

Twitter: @ankurbohra