

# 深度学习基础课程

## Deep Learning Foundation Course



<https://www.streamingnology.com>



<https://github.com/streamingnology>



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# What is Deep Learning?

## 人工智能 ARTIFICIAL INTELLIGENCE

Any technique that enables computers to mimic human behavior



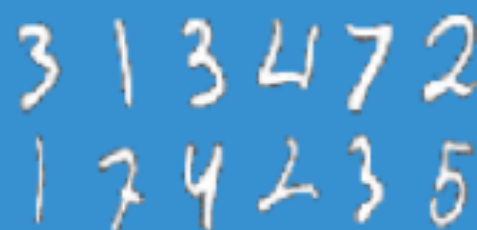
## 机器学习 MACHINE LEARNING

Ability to learn without explicitly being programmed

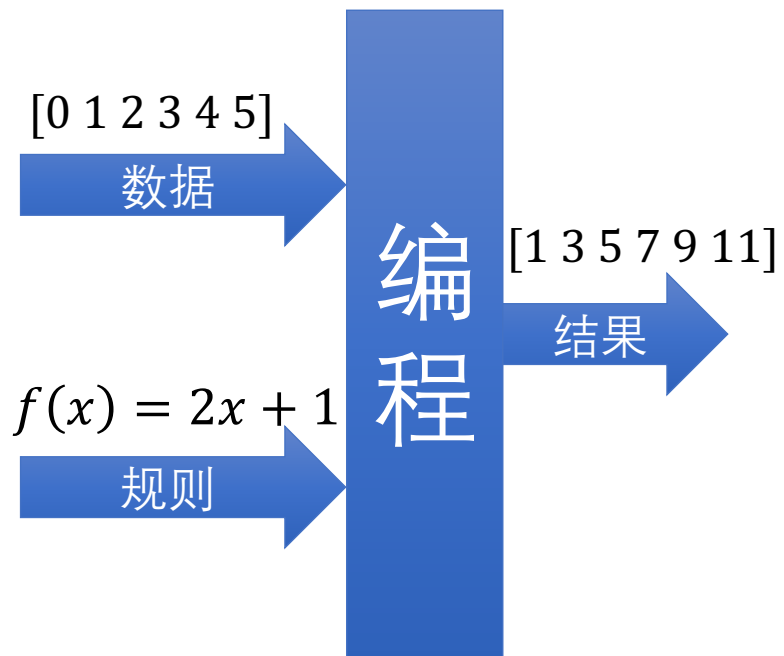


## 深度学习 DEEP LEARNING

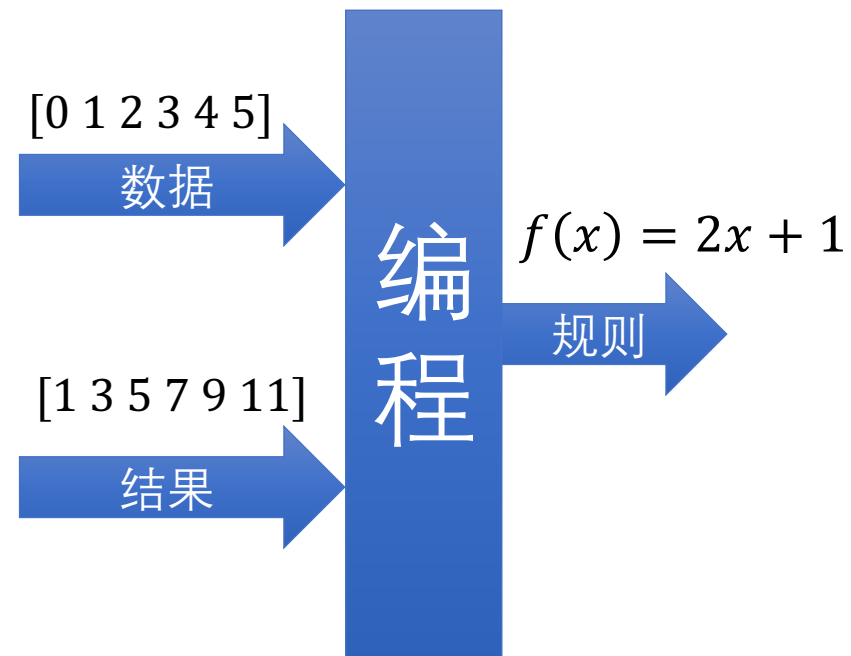
Extract patterns from data using neural networks

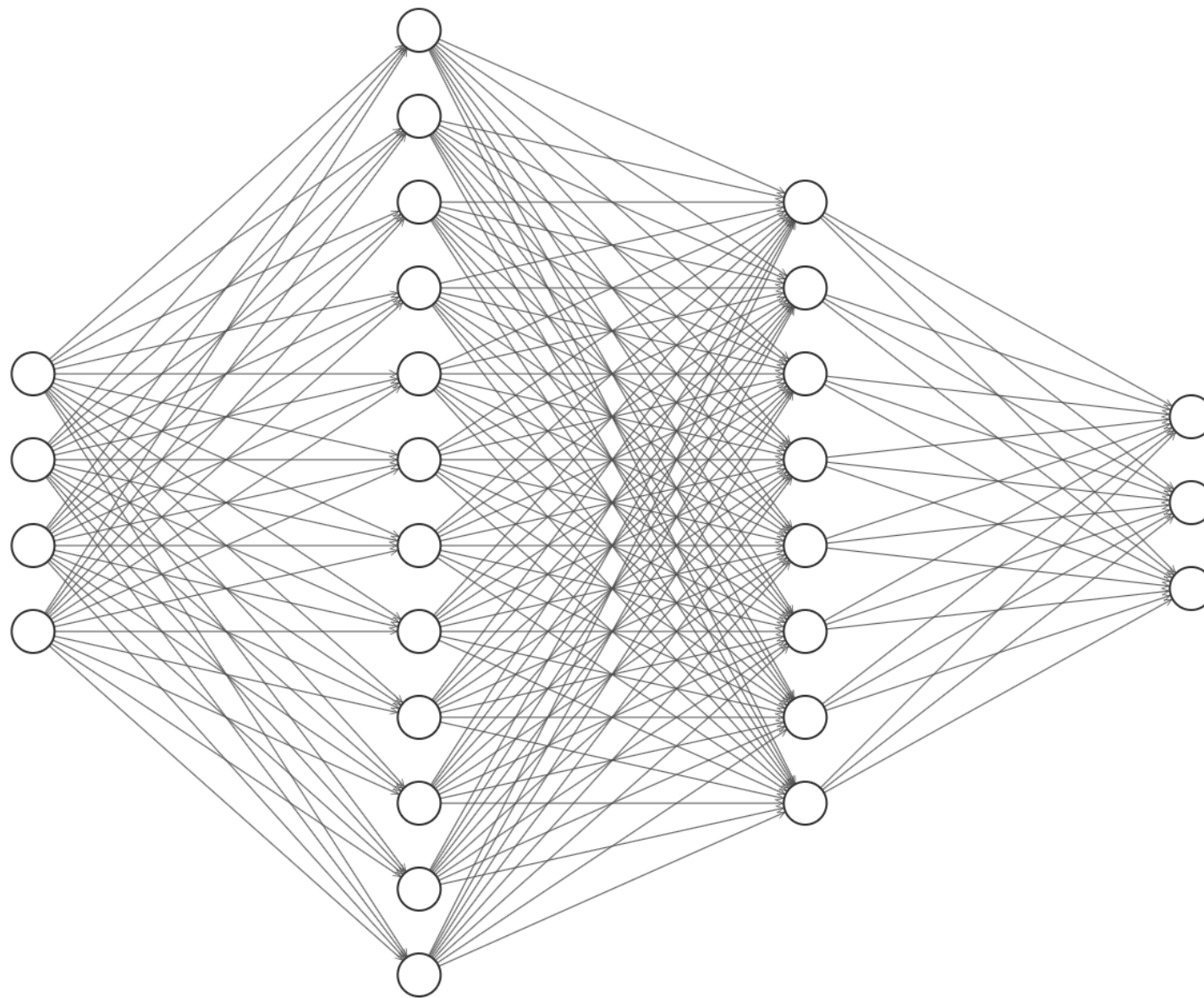


## 非机器学习



## 机器学习





Input Layer  $\in \mathbb{R}^4$

输入层

Hidden Layer  $\in \mathbb{R}^{12}$

隐藏层

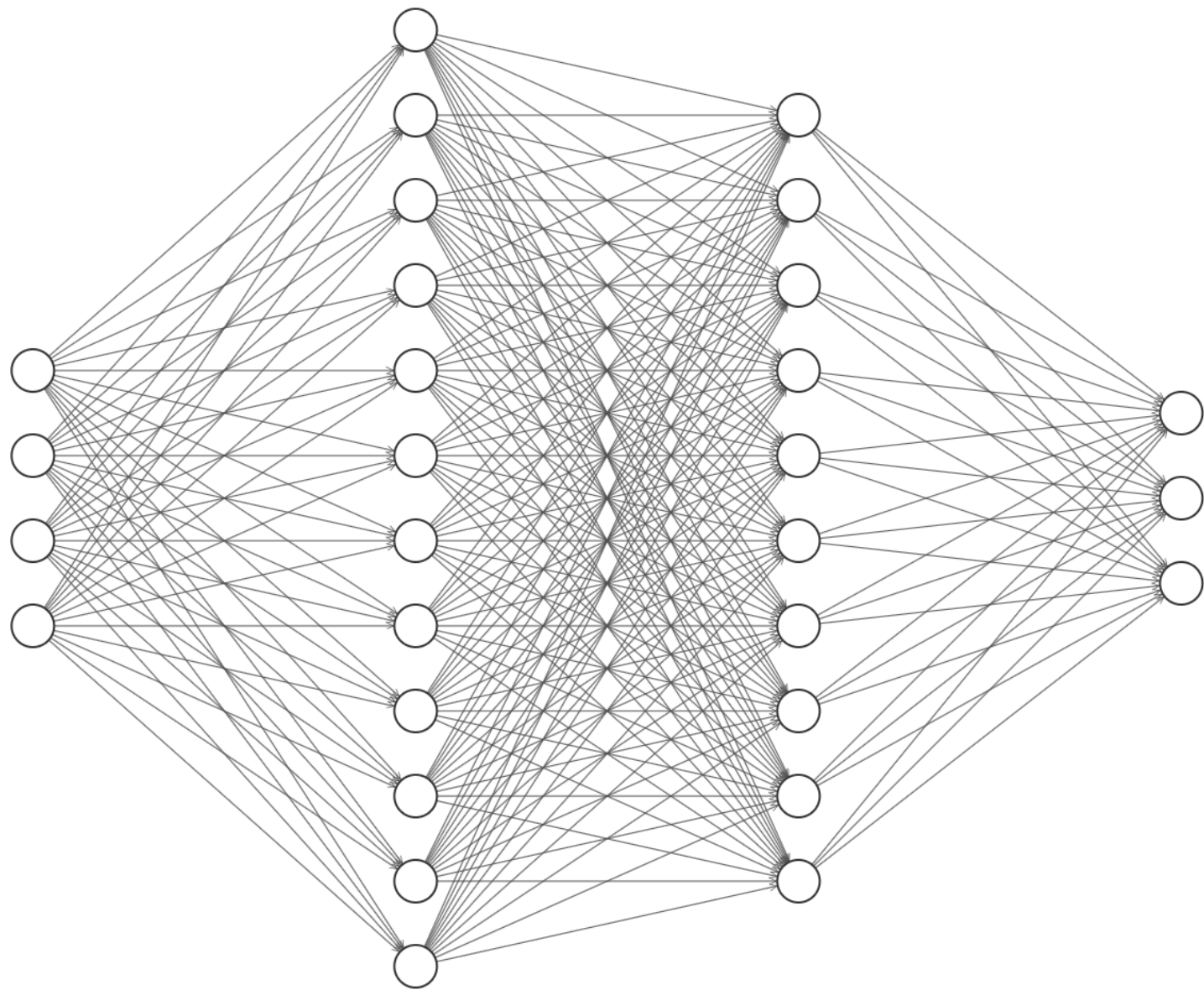
Hidden Layer  $\in \mathbb{R}^8$

隐藏层

Output Layer  $\in \mathbb{R}^3$

输出层

- 神经元 **neuron**
- 层 **layer**
  - 输入层 **input layer**
  - 隐藏层 **hidden layer**
  - 输出层 **output layer**
- 全连接 **full connect**



Input Layer  $\in \mathbb{R}^4$

输入层

Hidden Layer  $\in \mathbb{R}^{12}$

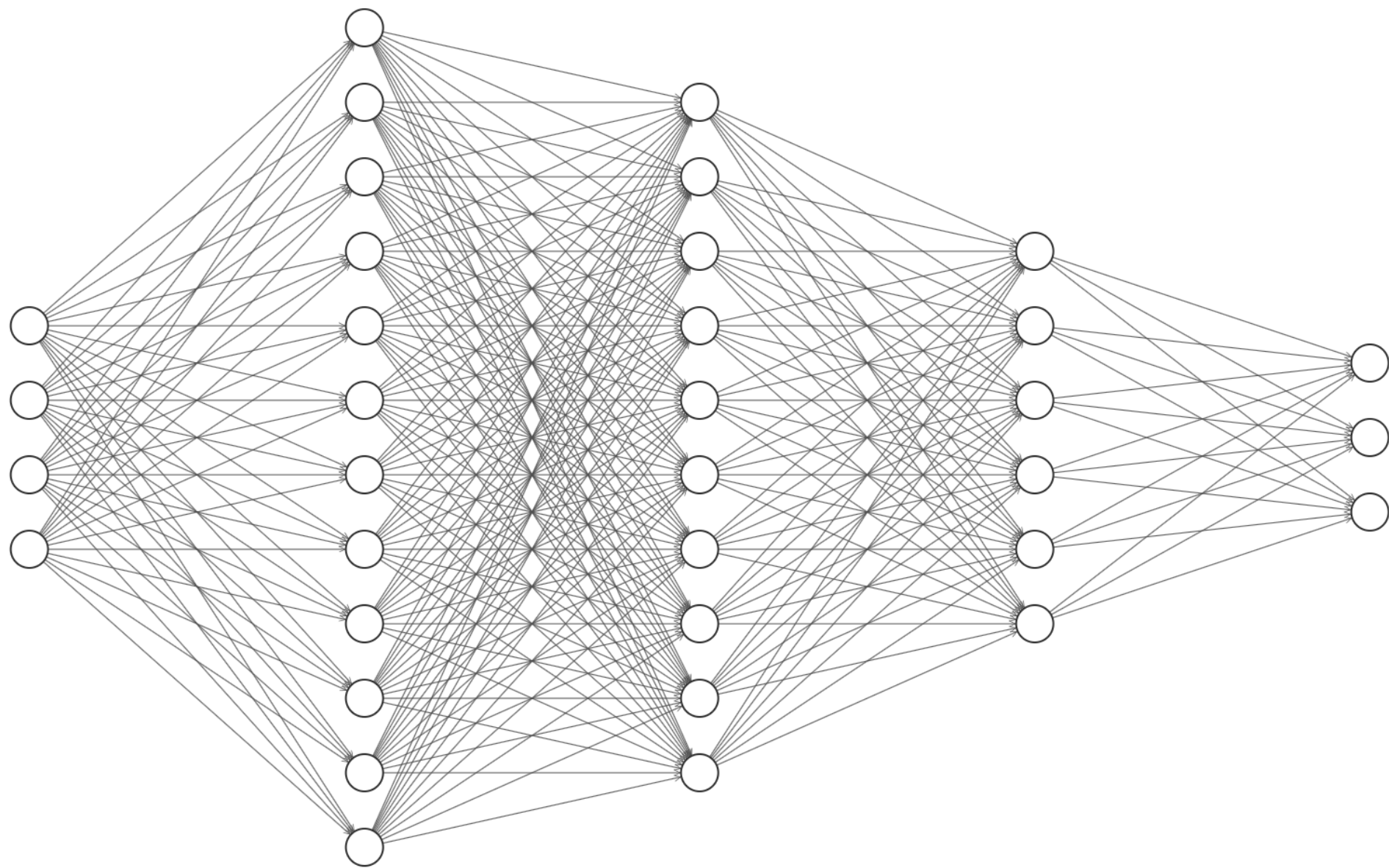
隐藏层

Hidden Layer  $\in \mathbb{R}^{10}$

隐藏层

Output Layer  $\in \mathbb{R}^3$

输出层



Input Layer  $\in \mathbb{R}^4$

输入层

Hidden Layer  $\in \mathbb{R}^{12}$

隐藏层

Hidden Layer  $\in \mathbb{R}^{10}$

隐藏层

Hidden Layer  $\in \mathbb{R}^6$

隐藏层

Output Layer  $\in \mathbb{R}^3$

输出层

# Reference

- MIT 6.S191 Introduction to Deep Learning  
<http://introtodeeplearning.com>
- Python深度学习 弗朗索瓦著 张亮译
- Neural Network 画图  
<http://alexlenail.me/NN-SVG/index.html>