

Skill Overview

Introduction to Machine Learning

Objectives: Introduction to Machine Learning

Overview

Machine learning algorithms

Neural Networks

Deep Learning

Machine learning model evaluation

Introduction to IBM Watson Studio

Exercise 1: Getting started with Watson Studio

Assessment

# Machine Learning V2

## Deep Learning

Deep learning is a machine learning technique that uses neural networks to learn. Although deep learning is similar to a traditional neural network, it has many more hidden layers. The more complex the problem, the more hidden layers there are in the model.

Deep learning has emerged now because of the following reasons:

- The continuous increase in big data requires data processing scaling to analyze and use this data correctly.
- Improvement in processing power and the usage of GPUs to train neural networks.
- Advancement in algorithms like the rectified linear unit (ReLU) instead of the Sigmoid algorithm helps make gradient descent converge faster.

## Applications

There are various types of neural networks. Each network is more suitable for a type of machine learning problem. Here is an overview for these networks and their applications:

- Multilayer perceptron (MLP): A class of feed-forward artificial neural networks (ANNs). It is useful in classification problems where inputs are assigned a class. It also works in regression problems for a real-valued quantity like a house price prediction.
- Convolutional neural network (CNN): Takes an input as an image. It is useful for image recognition problems like facial recognition.
- Recurrent neural network (RNN): Has a temporal nature where the input may be a function in time, such as audio files. It is also used for one-dimensional sequence data. It is suitable for inputs like audio and languages. It can be used in applications like speech recognition and machine translation.
- Hybrid neural network: Covers more complex neural networks, for example, autonomous cars that require processing images and work by using radar.

← Previous

Completed 5 of 22 Modules

Next →

Share this page



Contact IBM

Privacy

Terms of Use

Accessibility

Cookie preferences