

What Machine Learning Can Do: A Look At Supervised Learning

Ekata | 8.1.2018 | [in](#) [t](#) [f](#) [e](#)

If you're a data scientist or a machine learning engineer, you already know what machine learning is and what it can do. And you're already familiar with machine learning training methods such as supervised learning, [unsupervised learning](#), and [deep learning](#). While machine learning is rapidly going mainstream, most people do not know what machine learning is and how it can help organizations streamline business processes, boost productivity, and build intelligent applications. This post highlights some of the things machine learning can do, with a focus on supervised learning. We're focusing on supervised learning because most businesses that are gaining practical value from machine learning today are using supervised learning.

What is Supervised Learning?

Machine Learning is a subset of AI and involves giving computers the ability to learn without being explicitly programmed. Supervised learning is a machine learning training method where algorithms are provided labeled training examples from which the algorithms learn patterns and values. The training data consists of known inputs and corresponding outputs. Each training example is labeled with a value of interest, a "dog" or "cat" for example. The algorithm looks for patterns in the value labels. Once the algorithm finds the best pattern, it uses that pattern to make predictions. For example, an algorithm would be trained to detect if a cat is in a photo. In supervised learning, the algorithms are taught the correct answers from data that is known.

The goal of supervised learning is for machines to map a function based on the training examples given to them and then make predictions without requiring explicit instructions.

What Machine Learning (Supervised Learning) Can Do

The applications for machine learning are endless- businesses in nearly every industry could benefit from machine learning. When it comes to machine learning, supervised learning is the training method most used by businesses.

Here at Ekata, we use supervised learning as do most companies in the fraud space. [Confidence Score](#), a feature of our [Identity Check](#) product, automatically warns businesses when a transaction has a high risk. Confidence Score's ability to assign a risk score to transactions is thanks to supervised learning.

Have you noticed that the photo gallery app on most smartphones automatically tags your photos? If you want to find photos of your cat or dog, all you have to do is search your photos using those keywords. Automatic photo classification and tagging are tasks that are achieved via supervised learning (and often also involve deep learning).

The chatbots that are popping up on many websites and smartphone applications- many of those chatbots are trained to recognize user intent. And in most cases, that training involves supervised learning.

A Simplification of the Supervised Learning Concept

The below chart shows some of the applications of supervised learning. The chart is a simplification of the supervised learning concept:

Input A	Response B	Application
Picture	Is there a cat? (0 or 1)	Photo Tagging
Picture	Is there offensive content? (0 or 1)	Content Moderation
English sentence	French sentence	Language Translation
Audio clip	Transcript of audio	Speech Recognition
Vehicle camera or sensors	Position of other objects	Autonomous Vehicles
Hardware or machine sensors	Is it about to fail?	Preventive Maintenance
Loan application	Does applicant have good credit?	Loan Approvals
Email	Is this spam? (0 or 1)	Email Spam Protection
Phone number	Is this a valid number? (0 or 1)	Phone Number Validation
Text	Positive, negative, or neutral?	Sentiment Analysis
Text or speech	What is the intent?	Chatbot

Want to learn more about machine learning? Download our [Machine Learning eBook](#) or [contact](#) one of our data experts.