An internet bot, also known as web robot, WWW robot or simply bot, is a software application that runs automated tasks over the Internet. Typically, bots perform tasks that are both simple and structurally repetitive, at a much higher rate than would be possible for a human alone.

*The internet has been playing an increasingly important role in our daily life, with the availability of many web services such as email and search engines. However, these are often threatened by attacks from computer programs such as bots. To address this problem, CAPTCHA (Completely Automated Public Turing Test to Tell Computers and Humans Apart) was developed to distinguish between computer programs and human users.*

A CAPTCHA is a program that protects websites against bots by generating and grading tests that humans can pass but current computer programs cannot

Keras is an open-source neural-network library written in Python. It is capable of running on top of TensorFlow, Microsoft Cognitive Toolkit, Theano, or PlaidML. Designed to enable fast experimentation with deep neural networks, it focuses on being user-friendly, modular, and extensible

As we saw in the previous chapter, Neural Networks receive an input (a single vector), and transform it through a series of *hidden layers*. Each hidden layer is made up of a set of neurons, where each neuron is fully connected to all neurons in the previous layer, and where neurons in a single layer function completely independently and do not share any connections. The last fully-connected layer is called the “output layer” and in classification settings it represents the class scores.