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Machine Learning with Python-From Linear Models to Deep Learning

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4. Introduction to Supervised Learning

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Introduction to Supervised Learning



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Common to all these “prediction problems” mentioned on the previously is that it is very difficult to find a solution in terms of rules or code directly, and far easier to provide examples of correct solutions. For example, how would you encode rules for translation, or image classification? It is much easier to provide examples of translated sentences, or examples of what the objects are on a large set of images. The solution from examples is what has made machine learning so popular and pervasive. We will start with supervised learning in this course. In supervised learning, we are given an example (e.g. image) along with a target (e.g. what object is in the image), and the goal of the machine learning algorithm is to find out how to produce the target from the example.

More specifically, in supervised learning, we hypothesize a collection of functions (or models) that take a parameter, from the examples (e.g. the images) to the targets (e.g. the objects in the images). A machine learning algorithm then automates the process of finding the parameter of the model that best fits the example-target pairs the best.

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