Training an ML Model Just Like How a Baby Learns

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Training data + machine learning = A machine learning model

There are three parts to a machine learning model.
i.   The training data.
ii. The machine algorithm programmed to have machines learn from the data.
iii. The model itself.

But how do the machines learn from the data?

Think of how machine learning works like how a baby learns. When you teach a baby what a dog is, you will read a story to a baby and point out pictures of dogs and tell the baby, "This is a dog." Alternatively, maybe the baby is watching a cartoon on a screen, and you will point out "That's a dog too". Then over time, after seeing real dogs or pictures and videos of dogs with you pointing out what that is every time, a child will eventually point at a dog and say, "Dog." Now, here is the thing. You do not teach a baby what a dog is by pointing out, "See this animal ? It has a nose, two ears, and walks on all fours. You know, it needs to have fur, but sometimes it has hair. It can be black, white, brown or a combination of colors. Oh, and this one does not walk on all fours because it is doing a trick." That is not how we would teach a child at all. Instead, the baby learns through finding patterns in the examples you have shown it and then the baby finally recognizes a dog based on patterns.

A machine learning model learns in a very similar way. We feed the machine learning model thousands and thousands of examples of what a dog is. When we have found the model enough examples of labelled image data about what a dog is, the model will find patterns in the examples we present it with, and it will make predictions based on what those patterns were. The machine will find the patterns on its own if you have shown it enough examples of training data. The very essence of machine learning is to mimic the cognitive abilities of humans, and therefore, it makes sense that it draws inspiration from how humans themselves learn.