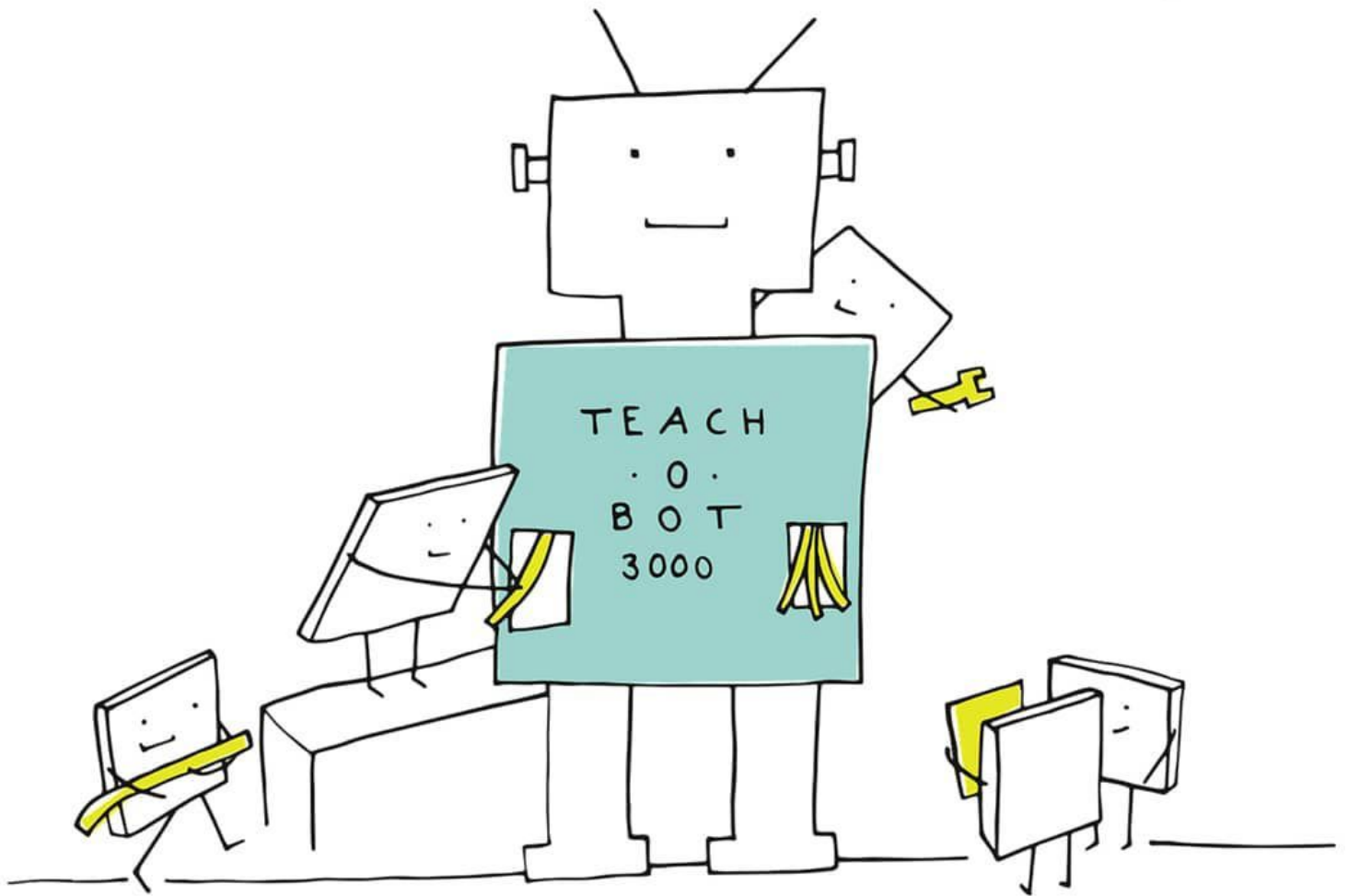
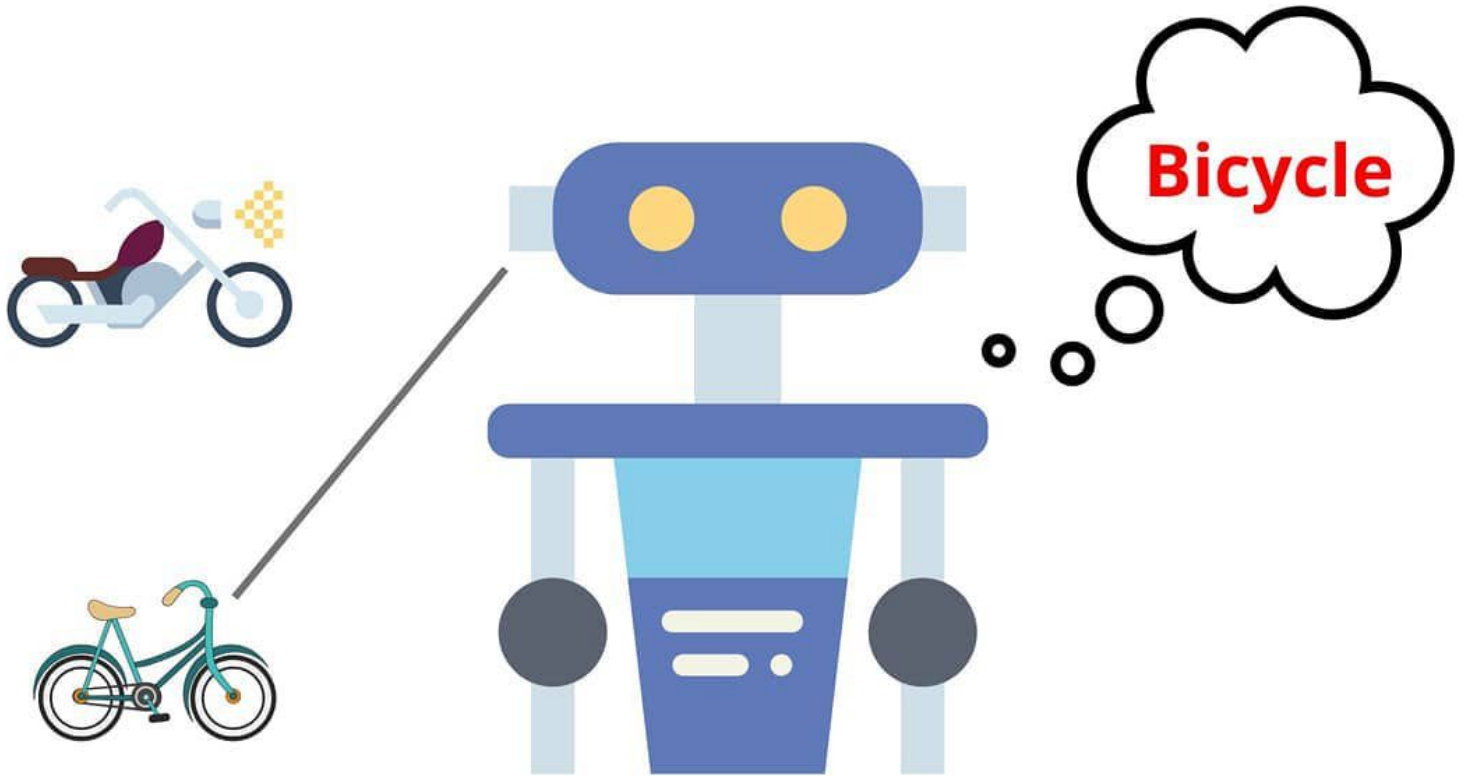


# How Machines Learn??

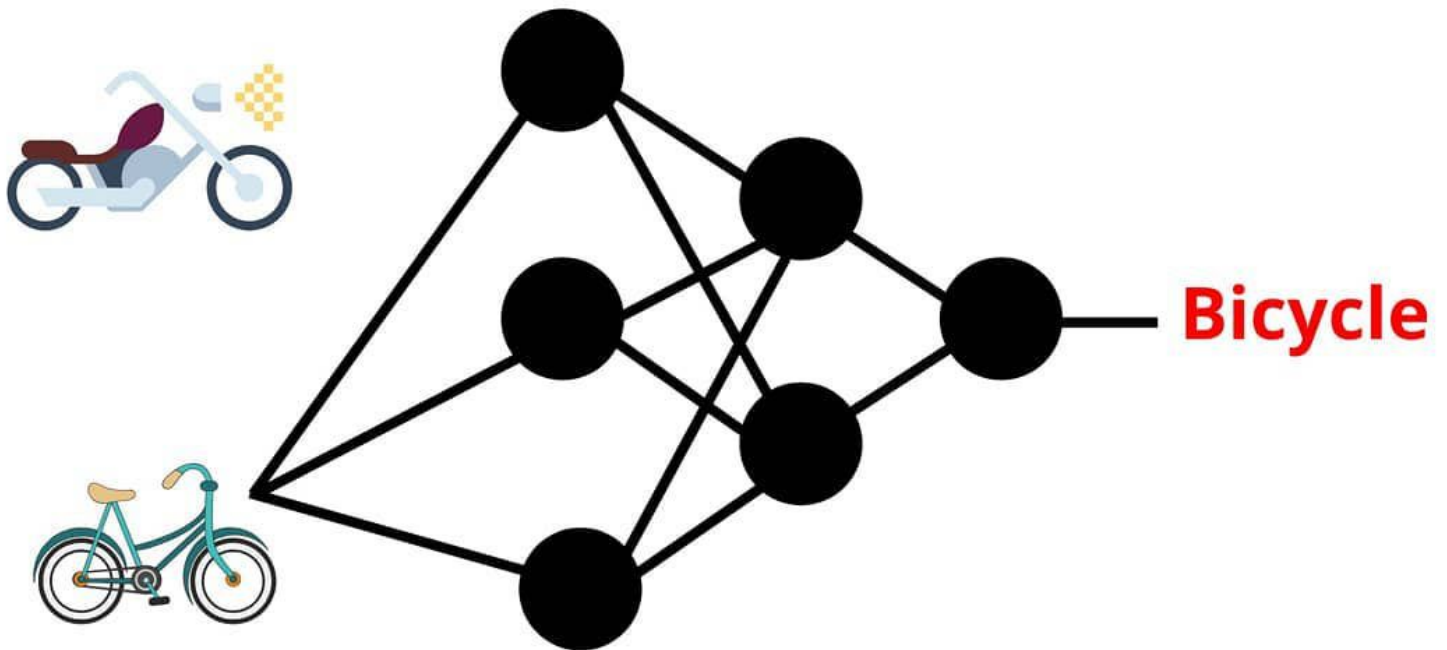




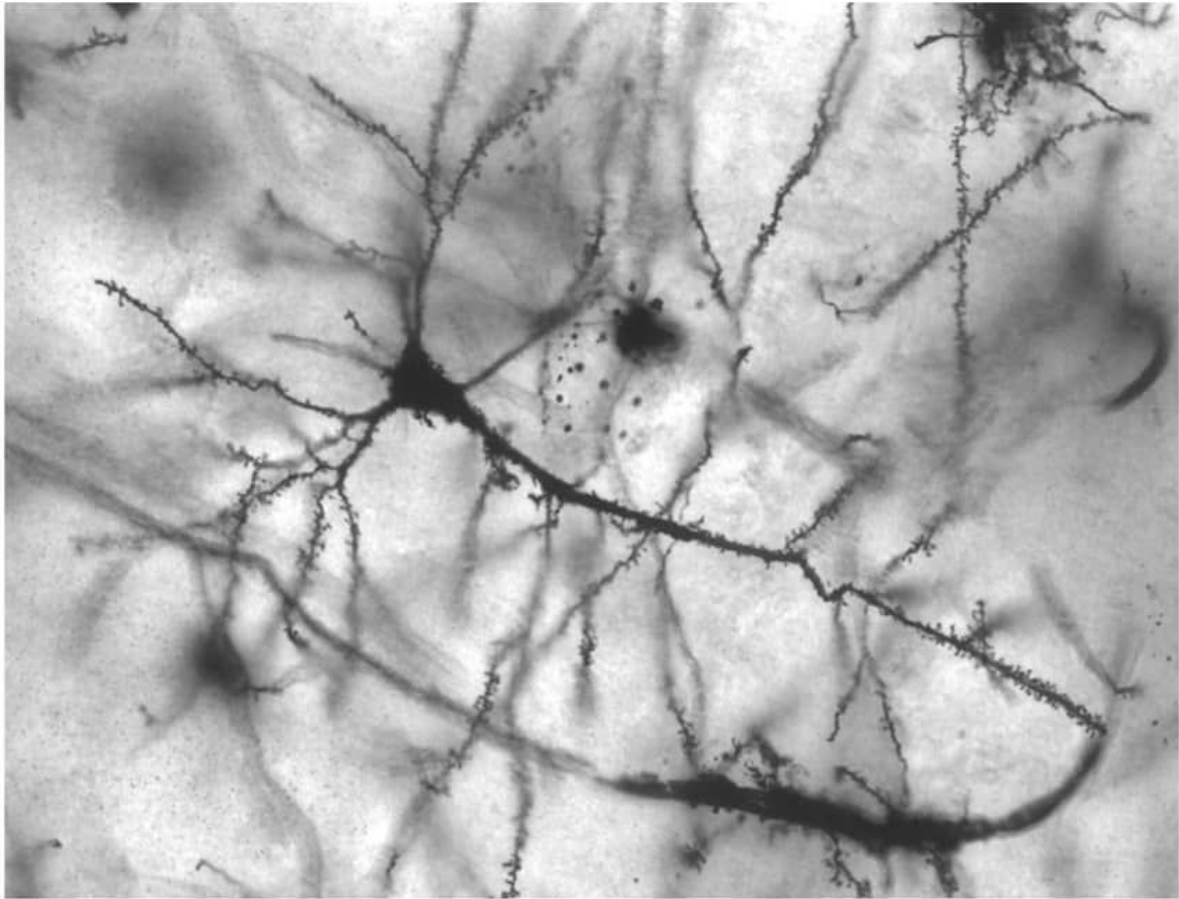
Before understanding how machines learn. Let's see how kids learn. If we want them to differentiate between motorcycles and bicycles, We show multiple images of them and say this is this. We don't teach them like if this feature (Tyre size, type of seat, height & width and etc...) is there then it will be a motorcycle or bicycle. He will learn how to differentiate both of them. Let's see



Machines also learn in a same way how humans learn with the help of **Machine learning**. In past, normally we teach them by showing what is what with an **If-Else** conditions. But now by using Machine learning/Deep learning we don't write any explicit rules or code to teach them. It will learn by its own from its experience how humans are. We give a lot of examples with answers and ask them to learn. We make mistakes while learning and learn from that mistakes to not make them in the future ( This is what learning from experience).



Deep Learning is a sub-field of ML. Which uses an architecture called neural networks. This works better than ML in many use-cases because of its **automatic feature engineering** feature. It will also learn from its mistakes and give more weights to the features which are really important in differentiating these classes. And we called all these techniques as Supervised learning. It is a type of learning where we will teach what is right.



**These all work in a way how human brains work. If you see there are many connections between the neurons and there is also a difference in connection strength. This is where it gives importance to a particular feature. If that feature is important the connection strength will be high or else low. These strengths will change by experience. Same happens in Deep learning but not 100% replicated.**

# Thank You.

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**Happy Learning**

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