Humanity’s evolution has been the driving energy for the impending reinforcement learning revolution and the drasticity of problems it will solve. The following video gave rise to a curiosity in me if I should to learn and understand about the problem-solving skills that living beings have acquired over the years. All the information learned about how to save oneself from the enemy, how to search for food has been transferred from generations using the genetic information module named DNA. Is it possible to save all the evolution strategies that we have learned till now and crunch it into 0’s and 1’s? I think yes, and that’s where the modern DL and RL approaches tend to go towards. How a machine learns clever tactics and can be better than humans? The field of RL is expected to show us things in future we never thought could be done in an efficient way. Take for example, the game below, in case if you have played it, have you ever thought that beyond saving the punk from falling off, you could device a clever strategy? When the RL agent was asked to play the game, it developed a clever strategy to push the punk up the edge and gain all the extra points in lesser time.

The whole idea of RL is to allow the agent to play in an environment and punish it if it performs bad. You might say that’s what the humanity has been doing to the world and creatures around it – harming animals, creating noise pollution from endless horns of vehicles, releasing harmful gases and increasing earth’s temperature making it difficult for animals to live? Indeed, exploiting it for its own good. Breathe - Let me make it very clever, although the idea may seem the same, It is totally not harmful and doesn’t give rise to global warming/hurt anyone’s sentiment. Although, it is a possibility that some day it may outsmart humans. – (That’s’ what Elon says, we gotta believe him?)

Ok, Now that we have discussed in brief about this, let’s start our journey to try and understand how this works?

Let’s spawn Tom and jerry at random locations.