

Assignment 1 – theoretical Submission

What is Machine Learning?

Machine learning is a collection of techniques and algorithms used to learn a pattern from datasets. The definition of “learned pattern” might vary from problem to problem. It could be a classifier (like an image classifier), or it could be predicting a numerical value (like predicting stock prices based on historical data), or it could be an “action predictor” meaning what the system should do (action) when given a certain input (like a robot trying to find a way out of a maze).

Usually, a machine learning problem has certain features describing a certain data point (called the input) and an output. This output might be known directly like in the case of an image classifier dataset or it could be in the form of a goal that the system has to achieve. An example of the latter one would be, again, a robot trying to find a way out of a maze. In this case, the output is not defined at every step rather it is given in some form of reward (after an iteration of the episode) which doesn't indicate whether the action at that point was correct or not.