

COMP6247 : Short Assignment One

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Describe, in your own words what you understand by intelligence, with reference to biological and artificial systems. You may make reference to notions of learning, genetic inheritance and measurement (e.g. IQ) in your answer.

In my perspective, intelligence is the ability to achieve the goals. These goals could be as simple as to survive and reproduce in order to continue the species which all animals have. The objectives could also be very abstract such as to gain money, to make a family happy, to succeed in a career like normal people would do. Moreover, these also include the goals which are assigned by others for artificial systems such as robots and computer programs.

To achieve the goals, it is necessary to have the skills to solve a set of relevant problems. Some of these abilities are inherited genetically on biological organisms while others are obtained from experience. For the artificial system, there are various methods of achieving these abilities. In the early days, the creators replicate his problem-solving processes into to system and make it work like their replicas. However, the more popular method nowadays is to use machine learning and train machines using data.

Another important component of intelligence is reactivity which is the ability to respond to any change that occurs in the environment. This ability is crucial for any intelligent system(both biological and artificial) because the changes impact the capability of the agent to achieve the goal whatever it is. Any system or unit which fails to operate in the new environment will no longer have a place. For biological units like animals or plants, this means extinction, while for artificial systems, it means getting replaced by other artificial systems.

In summary, intelligence is the ability to achieve goals. In order to do that the intelligent system or agent must have abilities to solve a set of problems relating to it. In addition, it is also crucial to adapt to the change in the environment because it could impact the way the objectives are resolved.