

LITERATURE SURVEY

TEAM ID-PNT2022TMID25959

INTRODUCTION:

The father of Artificial Intelligence, John McCarthy states a definition for AI which says that Artificial Intelligence is the science and engineering of making intelligent machines, especially intelligent computer programs.

Artificial Intelligence (AI) is intelligence exhibited by machines. In computer science the field of AI defines itself as the study of intelligent agents. Generally, the term AI is used when a machine simulate functions that humans associate with other human minds such as learning and problem solving.

HISTORICAL PERSPECTIVE:

During 20th century a brief history of AI can be given as:

1923 Karel Kapeks play named Rossums University Robots (RUR) opens in London, first use of the word robot in English.

- 1945 Isaac Asimov, alumni at Columbia University, invented the term Robotics
- Significant demonstrations in Machine Learning
- Case-based reasoning
- Multi-agent planning
- Scheduling
- Data mining, web crawler
- Natural Language understanding and translation

The two major approaches that has been developed for the regular AI system are: top down approach which started with the higher level functions and implemented those, and the bottom up approach which looked at the neuron level and worked up to create higher level functions.

COMPLICATIONS:

There are abundant complications when trying to create an intelligent system. Much of the old or simple AI is a list of conditions for what reaction to have based on expected stimuli. But this is arguably not intelligence, and imitating true intelligence requires an understanding of how the input relates to the output, as well as large interdisciplinary effort among most AI subfields along with psychology and linguistics. Many complications involve Human Machine interaction because of the complexity of human interaction.

A lot of the communication that happens that happens between humans cannot be coded facts a machine could simply recite. There are hundreds of subtle ways that humans interact with each other that affect communication. Innovation in voices, body language, and response to various stimuli, emotions, popular culture facts, and slang all affect how two people might communicate. This is hard to model in a machine that does not have basic common sense model already in place that can learn or make inferences.

RISKS:

Most of the scientists believe that an intelligent system is not capable of representing human emotions like love or hate, and on the second thought there is also no need for a system to willfully become generous or vengeful.

While thinking of many different ways in which an AI system may behave, the experts simply narrowed it down to two synopsis:

AI systems that are programmed to kill i.e. Autonomous weapons. If the wrong persons get their hands on these kinds of weapons then they would be able cause mass casualties easily and also, an AI arms race will hastily head towards an AI war that's also going to head towards mass casualties. Well, in order to steer clear of the thought of being conquered by the enemy, these weapons are programmed to be extremely difficult to just simply turn off, and that's the reason why humans will be most likely to lose control of such a situation.

1. The second type of case happens whenever we fail to fully align the AI's goal with ours, which is strikingly difficult. If you ask a well trained intelligent car to take you to a particular destination as fast as it can, then it might get you there covered in vomit and chased by helicopters, doing literally what you have asked for. If a super intelligent system is tasked with an ambitious geoengineering project, it might create disruption with our ecosystem as a side effect.

The ultimate goal is to keep the concussion of Artificial Intelligence in favor to the society which in turn results in triggering the research in many areas like control and security, validation and verification and even also law and economics.

2. Lets just assume that your system gets hacked or crashed down then it will be quite a problem. Now, when it comes to an AI system it becomes really essential that the intelligent system does what weve asked it to do specially when it comes to systems lie vehicles such cars, airplane or a power grid or an automatedtrading system or may be a pacemaker.

FUTURE

Artificial Intelligence has come a long way in the last decade. But theres still a large amount of work required to develop strong AI. Giving a machine Common Sense or intuition is a critical component of allowing a machine to truly learn. Knowing how to convert the input to output appears important, but amachine that truly understands why output relates to the input is necessary for strong AI. It is also necessary to further develop methods for detecting human emotions and actions. This is a multi disciplinary subject and will require advancements in Psychology, Linguistics, Machine Learning, Natural Language Processing and Image Processing to learn how humans.