The Concept of Artificial Intelligence

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Abstract: ***Computers are designed to act like humans in this branch of computer science. Artificial intelligence encompasses games, advanced devices, neural networks, the language of design, and robotics. There are actually no machines with full artificial (that is, they can mimic human behaviour) intellect. In the field of play, the biggest developments have taken place. The best programs in computer chess can now beat people. Neural networks are now the hottest artificial intelligence field and have shown progress in several areas such as voice recognition and computation in the natural language. AI languages are renowned for the fact that they are almost entirely used for AI apps. LISPand Prolog are the two most widely encountered. Artificial intelligence works a lot to reduce human activity, but to reduce production.***

KEYWORDS: Data mining, Epistemology, Ontology, Heuristics, optimization, Big Data, Machine learning.

INTRODUCTION

Artificial intelligence is characterized as computer programs designed to solve complex problems by implementations of processes similar to human cognition. This is the area of computer science where intelligent machines and software are researched and created. The area of research was based on the claim that a fundamental human trait, intellect— the knowledge of Homo sapiens—can be so accurately defined that a computer would replicate it. This presents philosophical problems concerning the nature of the reality and the behaviour of artificial entities, concerns that have been answered since ancient times by legend, literature and theory. Artificial intelligence was incredibly positive but also remarkably changed [1]. It has now become a key part of the technology industry, delivering strong lifts for many of the most complex informatics issues. The main problems (or objectives) in AI science include reasoning, understanding, organizing, studying, communication, vision, and the ability to manipulate and move objects [2]. AI utilizes an enormous number of tools including search and analysis, intuition, probability-and economics-based approaches, and many others [3].

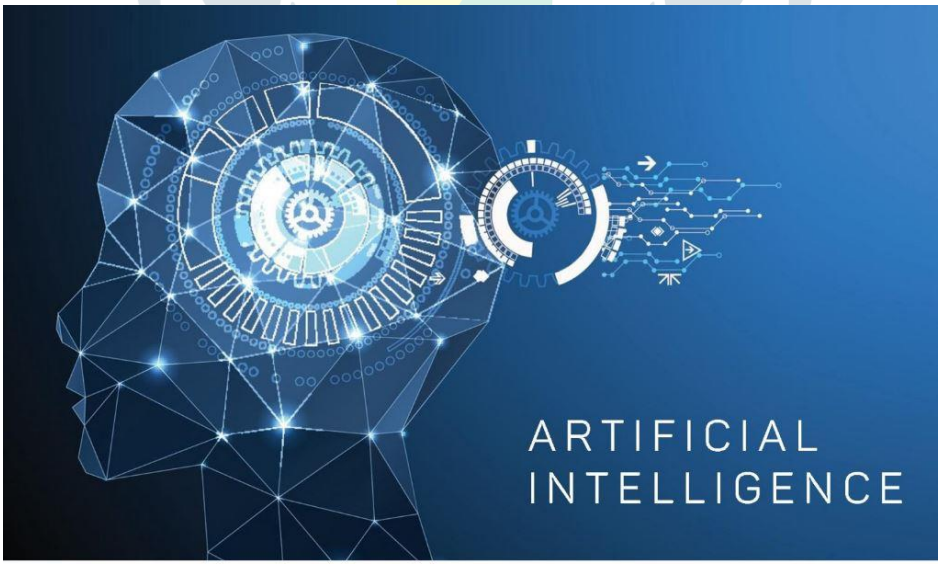

Fig 1. Artificial intelligence

History of Artificial Intelligence

Within Greek Mythologies, AI's scientific origins and the idea of smart machines are to be sought. Smart objects have been prevalent in media, with actual mechanical devices displaying actions that demonstrate certain knowledge. It has become possible to create systems that execute complicated learning activities since modern computers were accessible in the aftermath of the Second World War [4]. The logic analysis led to the discovery explicitly of the programmable digital computer, based on the work of mathematician

Alan Turing et al. The computation theory of Turing proposed that a computer could reproduce any (imaginable) act of mathematical assumption by shuffling symbols as simple as "0" and "1". In tandem with parallel developments in neurology, information theory and cybernetics, a small group of investigators began to think about structuring an artificial brain seriously [5].

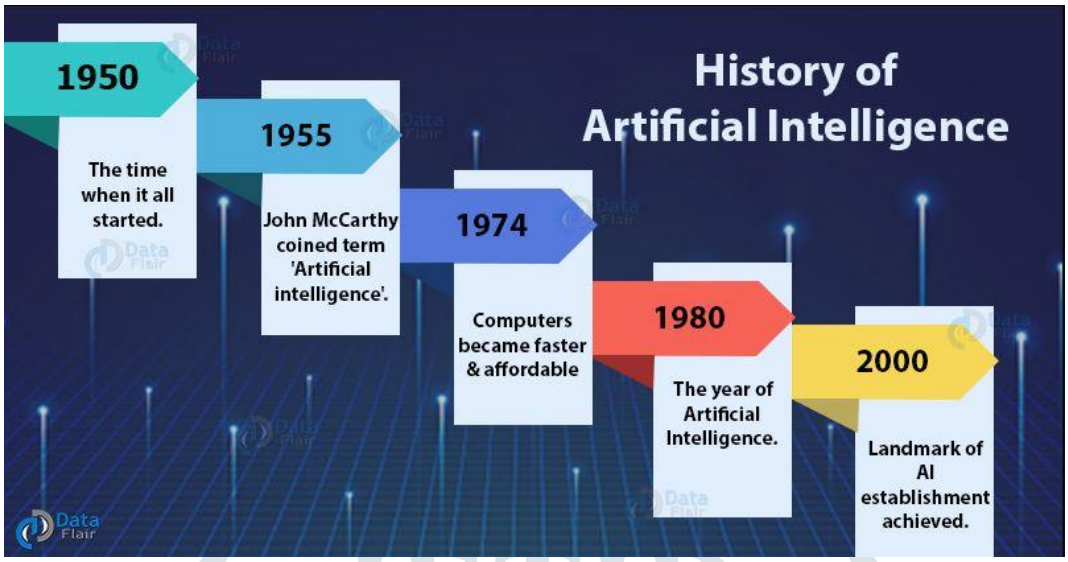

Fig 2. History of AI

1950 -1960

In 1951 the first practical AI programs were produced for the Ferranti Mark I system of the University of Manchester: Christopher Strachey's draughts and DIETRICH PRINZ's chess-play software.

1960 –1970

The prolog computer vocabulary was revisited through MARVIN MINSKY and the SEYMOUR PAPER Tissue PERCEPTRONS in the 1960s and 1970s. The influence of rule-based systems for data representation, treatment and therapy inference has been developed for what is at times referred to as the predominant expert method. TED SHORTLIFFE The first computer-controlled vehicle to address broken barrier path separately was created by HANS MORAVEC.

1980's Onwards

In the 1980s the back-diffusion-algorithm, first described by PAUL JOHN WERBO Since 1974, was widely used by neural networks. By 1985 the AI industry was more than $1 billion. At the same time, Japan's fifth generation computer project stimulated the U.S and British governments to return grant for academic research in the field. However, beginning with the fall down of the Lisp Machine market in 1987 [6].

1990's Onwards

In the 1990s and the beginning of the 21st century AI accomplished much, but not least in the history. Artificial intelligence is used throughout the expertise markets of manufacturing, data mining, scientific research and many other fields. The performance was due to many factors: the increasing computing power of the machine puts greater emphasis on exact sub-issues, establishing new relations between AI and other areas which operate on similar issues, and providing researchers with new guarantees on tough mathematical approaches and exact science standards.

COMPONENTS OF AI

The major components of AI are:

The User Interface

The user interface is the medium for reporting the problem solving mechanism between a customer and professional programs. If it does not have a functional gui, a strong expert program is not very effective. You must be able to confirm the directions in the process the consumer uses. the responses provided by the program must be understood.

The Information Base

All the information and rules concerning a relevant problem area are kept. The data are available in a way that can be used by the inference engine. The information can be built into the system as a context. The guidelines include the engineering rules for the expert method as well as the heuristic andruli-of-thumb rules offered by the field specialist to find solutions to the framework [7].

The Shell or interface Engine

The configuration engine is the software that locates the appropriate information in the database and produces new information through the implementation of coherent retrieval and interpretation technique.

BRANCHES OF ARTIFICIAL INTELLIGENCE

Genetic Programming

Genetic engineering reflects on the ways whereby algorithms execute correct tasks and solve accurate problems. That is achieved with spontaneous lisp programs and millions of generation options' hidden together. In other terms, genetic programming is a revolutionary approach focused on algorithms that can derive its roots from the organic growth that has been in the pursuit of programs for user-defined activities. For the process of genetic programming the planet should say thanks to JOHN KOZA and his specialists in Artificial Intelligence [8].

Ontology

Ontology is an artificial intelligence field that is interested in studying different types of artifacts. It is a collection of principles formally defined in a field. The interaction of terms in their identical realms is therefore afraid of spotlight. Ontology can also be used to describe the challenging environment in depth to the person in a demanding region.

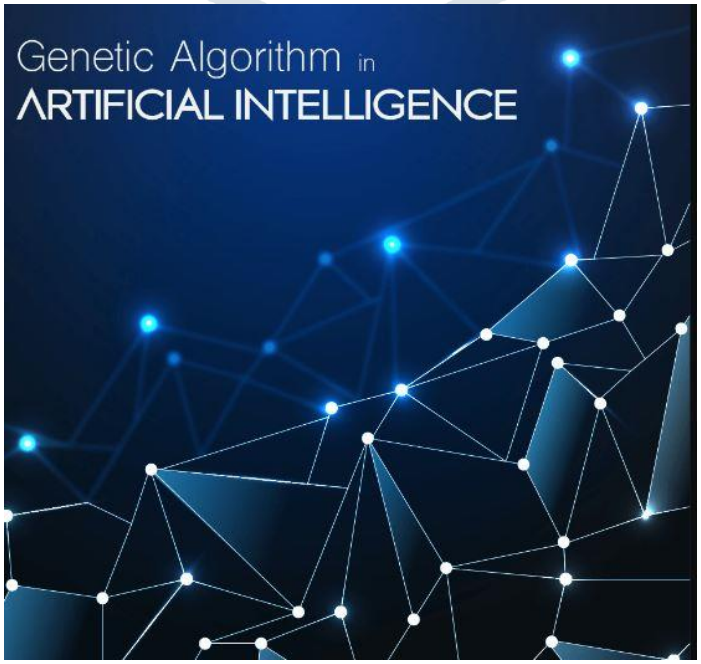

Fig 3. Genetic algorithm in Artificial Intelligence

Epistemology

The collection of facts can be beneficial to research the treatment of the risks of this epidemic worldwide. Epistemology involves itself. Epistemology, has succeeded in taking a role in digital intelligence for itself. Yet epistemology focuses on answering 4 core questions: What is information? As a branch of artificial intelligence? How are details collected? What do people know? What do people know? How do we know what we know, what do we think? The first definition was used in the English language by James Frederick Ferrier, the Scottish philosopher [9].

Heuristics

It is an artificial intelligence division that deals with the methods based on experience for problem solving, research and exploration. Heuristic approaches and strategies are all about seeking an appropriate solution to a particular problem easily and effectively. Heuristics, generally speaking, means determining many or similar approaches to a specific problem.

Search and Optimization

Most problems in AI may potentially be solved by smartly searching for many possible solutions and reduce thinking to searching. For example, rational proof can be seen to seek a way from assumptions to conclusions when an inference rule is applied at each stage. Planning algorithms look for expectations and sub-goals, trying to find the path to an objective, a technique called review of the means. Local searches in design field using robotic algorithms for shifting limbs and grabbing objects. For most real world problems, easy and thorough searches are seldom enough: the search area (number of search places) is rapidly increasing to astronomer amounts. For many problems the answer is to use "heuristic" or "thumb laws" and exclude choices which would not lead to the objective (called "sprinting the search tree"). Heuristics offers the plan, for the way the answer falls, a "best guess." We begin searching at a certain level, and then, through leaps or moves, we push our assumption upwards until we get to the end. Such algorithms can be visualized as blind climbing's. Progressive estimation includes a preference for optimisation. For instance, they can begin with a population of species (the deviations), then they can mutate and re-combine and only pick the most suitable to live per generation (refining the deviations) [10].

Logic

Logic is used for describing facts and solving problems, but it is also appropriate for other problems. AI Analysis uses various types of inference. The reasoning of assumptions that may be true or false is proposal or sentential logic. First order logic often permits quantifiers and predicates to be used, and it can include knowledge regarding artifacts, their property and their relationships. Fuzzy logics are the first-order logic versions which make it possible to express the truth of a statement as a value between 0 and 1, instead of true (1) or false (0). For modern industrial and consumer product control systems, fuzzy structures may be used for unclear logic and have been used extensively. In a particular and more straightforward manner than Fuzzy logic the individual logic models are confusion. Standard logics, non-monotonic logics and electoral districts are logic structures that endorse standard thinking and the certification question. Various logic extensions have been invented with the purpose of treating specific information domains such as concise logics, situation calculus, case calculus and the fluent calculus, causal calculus, faith calculus and modal logic.

CONCLUSION

We have addressed up to now the important characteristics of artificial intelligence i.e. benefits, infrastructure, precision and clear interpretation. Today, we might claim that it's not so easy to make a computer or tell a robot. It is hard to produce a machines like humans, who in various circumstances will show feelings or behave like individuals. The potential of artificial intelligence cannot be easily predicted. In the 90's, the emphasis was on artificial intelligence to boost people's circumstances. But is that the future's only goal? Work focuses on building or robots like human beings. This is because physicists

confuse themselves with human intelligence and are fascinated to try to copy it. The position of people definitely would shift if robots do the job done by people. Researchers will work hard all day and our work is done by equipment and a robot walking with us.

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