

Instituto Tecnológico de Culiacán



Actividad:

Resumen-La historia de la IA.

Unidad:

Unidad#1.

Alumno:

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Maestro:

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Materia:

Inteligencia Artificial.

Hora:

18:00-19:00.

Carrera:

Ing. Sistemas Computacionales.

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Some philosophers have ^{recognized} picked up the computational ^{approach} originated by computer scientists and accepted the idea that machines can do everything that humans can do.

What does the word 'intelligence' mean?

1. Someone's intelligence is their ability to understand and learn things.
2. Intelligence is the ability to think and understand instead of doing things by instinct or automatically.

- Now we should discover what thinking means. thinking is the activity of using your brain to consider a problem or to create an idea.

We can define intelligence as "the ability to learn and understand, to solve problems and to make decisions".

The goals of the ~~artificial~~ intelligence (AI) as a science is to make machines do things that would require intelligence if done by humans (Rosen, 1977)

one of the earliest and most significant papers on machine intelligence "Computing machinery and intelligence" was written by the British mathematician Alan Turing over fifty years ago (Turing, 1950)

Alan Turing began his scientific career in the early 1930s by rediscovering the Central Limit Theorem. In 1937 he wrote a paper on computable

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numbers, in which he proposed the concept of a universal machine. After the war, Turing designed the "Automatic computing Engine". He also wrote the first program capable of playing a complete chess game. Turing predicted that by the year 2000, a computer could be programmed to have a conversation with a human interrogator for five minutes and would have a 30 per cent chance of deceiving the interrogator that it was a human.

1.2. The history of artificial intelligence or from the "Dark Ages" to knowledge-based systems

1.2.1. The "Dark Ages", or the birth of artificial intelligence (1943-50)

The first work recognised in the field of artificial intelligence (AI) was presented by Warren McCulloch and Walter Pitts in 1943. His research on the central nervous system resulted in the first major contribution to AI: a model of neurons of the brain. McCulloch and his co-author Walter Pitts, a young mathematician, proposed a model of artificial neural networks in which each neuron was postulated as being in binary state, that is, in either on or off condition (McCulloch and Pitts, 1943).

They ~~demonstrated~~ ^{in fact} demonstrated that their neural network model was, in fact, equivalent to the Turing machine, and proved that any computable function could be computed by some network of connected neurons. McCulloch and Pitts also showed that simple network structures could learn.

The Third Founder of AI was John von Neumann, the brilliant Hungarian born mathematician. In 1930, he joined the Princeton University, lecturing in mathe-

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mathematical physics. In 1930, he joined the Princeton university. Von Neumann was fired of Turing and played a key role in the Manhattan project that built the nuclear bomb.

1.2.2 The rise of artificial intelligence, or the era of great expectations (1956-late 1960s)

John McCarthy ~~the~~ defined the high-level language LISP - one of the oldest programming languages. In 1958, He presented a paper, 'Programs with Common Sense', in which he proposed a program called the Advice Taker to search for solutions to general problems of the world (McCarthy, 1958). He demonstrated how his program could generate, for example, a plan to drive to the airport, based on some simple axioms.

one of the most ambitious projects of the era of great expectations was the General Problem Solver (GPS) (Newell and Simon, 1961, 1972). It was based on the technique now referred to as means-ends analysis. The means-ends analysis was used to determine a difference between the current state and desirable state or the goal state of the problem, and to choose and apply operators to reach the goal state.

1.2.3 Unfulfilled promises, or the impact of reality (late 1960s-early 1970s)

~~Because of~~ ~~the~~

the main difficulties for AI in the late 1960s were:

- Because AI researchers were developing general methods for broad classes of problems, early programs contained little or even no knowledge about a problem domain.
- many of the problems that AI attempted to solve were too broad and too difficult. A typical

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for early AI was machine translation.

1.2.4 The technology of expert systems, or the key to success (early 1970s-mid-1980s)

Probably the most important development in the 1970s was the realisation that the problem domain for intelligent machines had to be sufficiently restricted. The DENDRAL Program is a typical example of the emerging technology, was developed at Stanford University to analyse chemical. The project was supported by NASA, because an unmanned spacecraft was to be launched to Mars and a program was required to determine the molecular structure of Martian soil, based on the mass spectral data provided by a mass spectrometer.

1.2.5 How to make a machine learn, or the rebirth of neural networks (mid-1980s-onwards)

by the late 1960s most of the basic ideas and concepts necessary for neural computing had already been formulated (Lewin, 1990). However, only in the mid-1980s did the solution emerge. The major reason for the delay was technological; there were no PCs or powerful workstations to model and experiment with artificial neural networks.

1.2.7 The new era of knowledge engineering, or computing with words (late 1980s-onwards)

Neural network technology offers more natural interaction with the real world than do systems based on symbolic reasoning. However they lack explanation facilities and usually act as a black box. The process of training neural networks with current technologies is slow, and frequent retraining can cause serious difficulties.

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Summary

Alan Turing defined the intelligent ^{comportment} behaviour of a computer as the ability to achieve human-level performance in a ^{activation} cognitive task. The Turing test provided a basis for the verification and validation of knowledge-based systems. In 1960s to the disillusionment and funding cutbacks in the early 1970s; the development of the first expert systems such as DENDRAL, MYCIN and PROSPECTOR in the 1970s to the maturity of expert system technology and its massive applications in different areas in the 1980s/1990s.