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Robotics and Artificial Intelligence

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ABSTRACT

Artificial intelligence and robotics are very recent technologies and risks for our world. They are developing their capacity dramatically and shifting their origins of developing intention to other dimensions. When humans see the past histories of AI and robotics, human beings can examine and understand the objectives and intentions of them which to make life easy and assist human beings within different circumstances and situations. However, currently and in the near future, due to changing the attitude of robotic and AI inventors and experts as well as based on the AI nature that their capacity of environmental acquisition and adaptation, they may become predators and put creatures at risk. They may also inherit the full nature of creatures. Thus, finally they will create their new universe or the destiny of our universe will be in danger.

KEYWORDS

AI, Destiny of Universe, Intelligence, Robotics

1. INTRODUCTION

Artificial intelligence describes the work processes of machines that would require intelligence if performed by humans (Wisskirchen et al., 2017). The term ‘artificial intelligence’ thus means ‘investigating intelligent problem-solving behavior and creating intelligent computer systems.

There are two kinds of artificial intelligence:

- **Weak Artificial Intelligence:** the computer is merely an instrument for investigating cognitive processes – the computer simulates intelligence.
- **Strong Artificial Intelligence:** The processes in the computer are intellectual, self-learning processes. Computers can ‘understand’ by means of the right software/programming and are able to optimize their own behavior on the basis of their former behavior and their experience. 4 This includes automatic networking with other machines, which leads to a dramatic scaling effect.

According to the Robot Institute of America (1979) a robot is: “A reprogram able, multi-functional manipulator designed to move material, parts, tools, or specialized devices through various programmed motions for the performance of a variety of tasks” (Bansal et al., 2017). A more inspiring definition can be found in Webster. According to Webster a Robot is: “An automatic device that performs functions normally ascribed to humans or a machine in the form of a human.” A robot can be defined as a programmable, self-controlled device consisting of electronic, electrical, or mechanical units. More generally, it is a machine that functions in place of a living agent. Robots are especially desirable for certain work functions because, unlike humans, they never get tired; they can endure physical conditions that are uncomfortable or even dangerous; they can operate in airless conditions; they do not get bored by repetition; and they cannot be distracted from the task at hand.

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Robotics can be defined as the field of knowledge and techniques that can be used to create robots. Robotics is a branch of engineering that involves the conception, design, manufacture, and operation of robots. This field overlaps with electronics, computer science, artificial intelligence, nanotechnology, and bio-engineering. Robotics is the field of knowledge and techniques that permit the construction of robots. Designed to carry out various tasks in place of humans – for example, on a factory assembly line, or on a mission to Mars or other dangerous place – robots are more than simple computers: they must be able to sense and react to changes in their environment.

The robotics intelligence can be efficiently used in wide Industrial Applications that is achieved through Automation of Robotics tasks, and its key expertise in handling utmost requirements in various arenas that leads to cost effective and secured operational processes by

- Reliable advancements of equipment functioning and its control in order to trigger varying applications of automation and to strengthen the recycle of equipment and thereby increasing its competence on demand.
- Incline and controlled mechanized layouts to curtail transportation and to efficiently coalesce physical and computerized work-cells.
- IT enabled manufacturing apparatus for simultaneous artifact and fabrication in development and design, indoctrination and servicing of the tools.
- Robotic testing of electronic machinery (computer vision, electronic test equipment) for achieving 100% excellence.
- Advanced industrialized process like gluing, coating, joining, wiring etc; which are key tools for robot traversal and control the same time suitable for mass products and robot guidance and control. Here, laser based processes will play an increasing role in terms of joining, coating, cutting, and finishing.

The paper is organized in nine sections followed by recommendation, conclusion, acknowledgement and references. Section 2 describes about history of robotics and AI in detail. Section 3 gives a detailed explanation about robotics and AI. Section 4 and 5 talks about the seasons of robotics and AI, and AI technologies & disciplines respectively. Section 6 gives a detailed explanation of AI and robotics limitations. Section 7 and 8 talks about the weak and strong AI and robotics, and the impact of government on AI and Robotics respectively. Finally, Section 9, 10 and 11 deals about major technological firms AI and robotics, programming languages for AI and robotics, and risks and fears of AI and robotics respectively.

2. HISTROY OF ROBOTICS AND AI

The birth of the computer took place when the first calculator machines were developed, from the mechanical calculator of Babbage, to the elector-mechanical calculator of Torres-Quevedo (Perez et al., 2017). The dawn of automata theory can be traced back to World War II with what was known as the “codebreakers”. The amount of operations required to decode the German trigrams of the Enigma machine, without knowing the rotor’s position, proved to be too challenging to be solved manually. The inclusion of automata theory in computing conceived the first logical machines to account for operations such as generating, codifying, storing and using information. Indeed, these four tasks are the basic operations of information processing performed by humans. The pioneering work by Ramón y Cajal marked the birth of neuroscience, although many neurological structures and stimulus responses were already known and studied before him. For the first time in history the concept of “neuron” was proposed. McClulloch and Pitts further developed a connection between automata theory and neuroscience, proposing the first artificial neuron which, years later, gave rise to the first computational intelligence algorithm, namely “the perceptron”. This idea generated great

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