

AI Advantages & disadvantages

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Abstract

Artificial intelligence (AI) is kind of technology that makes the devices smart as human beings to develop the human's life by using these devices in all of the life's aspects such service robots, healthcare, education, including electronics, software, medicine, entertainment (games), engineering, communications and manufacturing. AI is a science and technology based on disciplines such as Computer Science, Biology, Psychology, Linguistics, Mathematics, and Engineering.

Artificial Intelligent Technologies provide competitive advantage such as increase the productivity and accuracy in industrial filed.

Keywords: AI, Applications, Advantages & Disadvantages and Limitations.

1. Introduction

Artificial Intelligence is a branch of Science which deals with helping machines finds solutions to complex problems in a more human-like fashion. This generally involves borrowing characteristics from human intelligence, and applying them as algorithms in a computer friendly way. A more or less flexible or efficient approach can be taken depending on the requirements established, which influences how artificial the intelligent behavior appears. AI research development, and systems design, as well as programs and policies to help ensure that these systems broadly benefit individuals and society.¹

It considers the science, engineering, and deployment of AI-enabled computing

systems. As its core activity, the Standing Committee that oversees the One Hundred Year Study forms a Study Panel every five years to assess the current state of AI.²

The term artificial intelligence (AI) refers to the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. Since the mid-20th century, scientists have attempted to develop a system capable of carrying out tasks perceived as requiring human intelligence.³

AI is based computer systems which include software simulate the human brains thinking of making decisions. AI have been invented to ease the human's life.

2. Definition of AI

Artificial Intelligence (AI) is a science and a set of computational technologies that are inspired by—but typically operate quite differently from—the ways people use their nervous systems and bodies to sense, learn, reason, and take action.⁴

“Artificial intelligence is that activity devoted to making machines intelligent, and intelligence is that quality that enables an entity to function appropriately and with foresight in its environment.”⁵

Artificial intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.⁶

3. Goals of AI

The goals of AI are:

- **To develop computers** that can think, as well as see, hear, walk, talk, and feel. A major thrust of AI is the development of computer functions normally associated with

human intelligence, such as reasoning, learning, and problem solving. That is why the term artificial intelligence was coined by John McCarthy at MIT in 1956.⁷

-To Create Expert Systems – The systems which exhibit intelligent behavior, learn, demonstrate, explain, and advice its users.

-To Implement Human Intelligence in Machines – Creating systems that understand, think, learn, and behave like humans.⁸

4. Domains of AI

Artificial intelligence is a science and technology based on disciplines such as Computer Science, Biology, Psychology, Linguistics, Mathematics, and Engineering. A major thrust of AI is in the development of computer functions associated with human intelligence, such as reasoning, learning, and problem solving.

Out of the following areas, one or multiple areas can contribute to build an intelligent system⁷

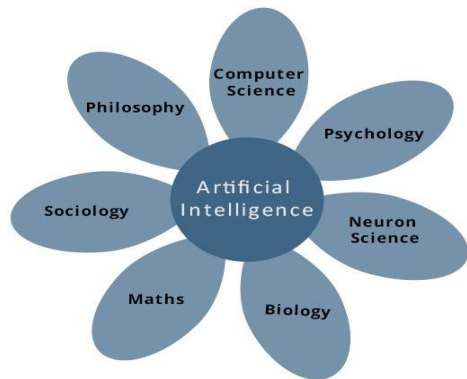


Fig. 1 Domains of AI.

Our ability to combine knowledge from all these fields will ultimately benefit our progress in the quest of creating an intelligent artificial being.

5. Applications of AI

AI has big role in: transportation; service robots; healthcare; education; low-resource communities; public safety and security;

employment and workplace; and entertainment.⁹

•Smarter cars

GPS was introduced to personal vehicles in 2001 with in-car navigation devices and has since become a fundamental part of the transportation infrastructure.¹⁰

Current vehicles are also equipped with a wide range of sensing capabilities .An average automobile in the US is predicted to have seventy sensors including gyroscopes, accelerometers, ambient light sensors, and moisture sensors.¹¹

Automobiles built before 2000 had sensors for the internal state of the vehicle such as its speed, acceleration, and wheel position.¹²

•Health care

AI-based applications could improve health outcomes and quality of life for millions of people in the coming years—but only if they gain the trust of doctors, nurses, and patients, and if policy, regulatory, and commercial obstacles are removed⁹.

Poor human-computer interaction methods and the inherent difficulties and risks of implementing technologies in such a large and complex system have slowed realization of AI’s promise in healthcare.¹³

•Education

The past fifteen years have seen considerable AI advances in education. Applications are in wide use by educators and learners today, with some variation between K-12 and university settings.⁹

Robots have long been popular educational devices, starting with the early Lego Mindstorms kits developed with the MIT Media Lab in the 1980s.⁹ many kinds of robots such as Ozobot and Cubelets teach and help children.

•PUBLIC SAFETY AND SECURITY

AI may enable policing to become more targeted and used only when needed. And assuming careful deployment, AI may also help remove some of the bias inherent in human decision-making.⁹

Cybersecurity (including spam) is a widely shared concern, and machine learning is making an impact.⁹ The cameras deployed almost everywhere in the world today tend to be more useful for helping solve crimes than preventing them.¹⁴¹⁵

5. Advantages

- Smarter artificial intelligence can replace human jobs, freeing people for other works by automating manufacturing and transportation.
- Self writing, self-modifying and learning software's can relief programmers of the burdensome tasks of specifying functions of the different programs.
- Artificial intelligence will be used as cheap labor then there must be increment in profits for corporation.
- Artificial intelligence can make deployment easier and less resource intensive.
- Compared to traditional programming techniques, expert-system approaches provide the added flexibility (and hence easier modifiability) with the ability to model rules as data rather than as code. In situations where an organization's IT department is overwhelmed by a software-development backlog, rule-engines, by facilitating turnaround, provide a means that can allow organizations to adapt more readily to changing needs.¹⁶

6. Disadvantages

- Rapid advances in AI could lead to massive structural unemployment.
- Unpredictable and unseen impacts of new features.
- An expert system or rule-based approach is not optimal for all problems, and considerable knowledge is required to apply in any of the systems.
- Ease of rule creation and rule modification can be double-edged. A system can be sabotaged by a non-knowledgeable user who can easily add worthless rules or rules that conflict with existing ones. Reasons for the failure of many systems include the absence of (or neglect to employ diligently) facilities for system audit, detection of possible conflict, and rule lifecycle management (e.g. version control, or thorough testing before deployment). The problems to be addressed here are as much technological as organizational.¹⁶

7. Discussion

Indeed, Artificial Intelligent Technologies provide more life's facilities for human beings, increase the productivity and accuracy in industrial filed but also the Artificial Intelligent Technologies affect in human's life in term of work.

8. Conclusion

From the above discussion we can see that Artificial Intelligent Technologies ease human's life and by coming future Artificial Intelligent Technologies can provide more competitive advantage.

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