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Research Article

THE IMPACT OF AI IN THE NEAR FUTURE AND THE ROAD TO SUPER INTELLIGENCE APPLICATIONS

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ABSTRACT

Artificial Intelligence is the concept of computer science which deals with building computers that exhibits the intelligent behaviour like us. In other words it concerns with making intelligent machines which having ability of learning something, problem solving and understanding of language. These machines are called intelligent agent. AI also makes road to super intelligent application which explore a new era in the computer science field. but this all happen scientifically and technically by affecting many aspects of society and culture.

Key Words:

Artificial Intelligence, AI, Super intelligence applications, AI research

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INTRODUCTION

Artificial intelligence (AI) Broadly (and somewhat circularly) defined, is concerned with intelligent behaviour, in turn, involves perception, reasoning, learning, communicating, and acting in complex environments. AI has as one of its long-term goals the development of machines that can do these things as well as humans can, or possibly even better. Another goal of AI is to understand this kind of behaviour whether it occurs in machines or in humans or other animals. Thus, AI has both engineering and scientific goals.

Super Intelligence Applications: The ultimate CPU in human body is brain. It is a complex organ and its power is amazing when compared to other animals but when it comes to machine intelligence then we can't compete. The road to super intelligence applications isn't that much far. Super intelligence applications have greater analytical, reasoning, thinking, processing and self improvement capabilities. Super intelligence applications would change our complex lifestyle into an easier one.

New Approaches to Artificial Intelligence

Decision making under uncertainty is a key aspect of natural intelligence that AI seeks to emulate. However, the representation of uncertainty has been a troublesome factor from the earliest days of AI. Modern AI systems have become dominated by probabilistic approaches to uncertainty, notably

with Bayesian deductive approaches and statistical inductive approaches. While these advances are laudable, they suffer ultimately from the same problems as non-probabilistic AI systems: brittleness in deduction, and incorrect generalization (about the future) in induction. A common view of these ubiquitous AI failings is they are both inability to cope with the unforeseen. This key aspect of uncertainty is not well treated by either probabilistic or non-probabilistic AI systems, yet continuing to cope effectively with unforeseen events may be the defining characteristic of living intelligence. We argue that little has been done in AI to model the core processes humans used to deal with the ongoing uncertainty of the real world. Emotions, which allow sufficient conviction to make decisions under uncertainty, are usually treated in AI as distractions from careful reasoning. Social dynamics play a key role in formulating conviction as well, yet most AI exists outside a social context. Creativity, which generates new possibilities for facing unforeseen events, is seldom treated algorithmically at all, and is often modelled only as completely random process. Meta-representational reasoning (analogy, irony, humour, etc.) allow formulation of new representations of unforeseen circumstances, yet most AI systems are locked in rigid representations, explored only by rote optimization techniques. The agenda of AI research in the centre is to directly address such elements of natural intelligence with AI models. Such AI must be made more adductive (In C.S. Pierce's sense of a "natural guess"). Complex-systems based AI is a cornerstone, it that it aims to create systems that attempt

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to display “not obvious” (e.g., emergent) behaviours and properties of living things, ultimately humans. But these techniques are to be married with psychological and sociological analysis and theory to create AI that more adequately reflect the non-optimal but highly-effective operation of real intelligences in their radically uncertain environments. The work of this section of the centre is intended to deliver academic progress in understanding real human decision making, via construction of AI systems, and should also deliver more effective AI systems for engineering application.

What's Next For Ai Research?

The research that fuels the AI revolution has also seen rapid changes. Foremost among them is the maturation of machine learning, stimulated in part by the rise of the digital economy, which both provides and leverage large amounts of data. Other factors include the rise of cloud computing resources and consumer demand for widespread access to services such as speech recognition and navigation support. Machine learning has been propelled dramatically forward by impressive empirical successes of artificial neural networks, which can now be trained with huge data sets and large-scale computing. This approach has been come to be known as “deep learning.” The leap in the performance of information processing algorithms has been accompanied by significant progress in hardware technology for basic operations such as sensing, perception, and object recognition. New platforms and markets for data-driven products, and the economic incentives to find new products and markets, have also stimulated research advances. Now, as it becomes a central force in society, the field of AI is shifting toward building intelligent systems that can collaborate effectively with people, and that are more generally human-aware, including creative ways to develop interactive and scalable ways for people to teach robots. These trends drive the currently “hot” areas of AI research into both fundamental methods and application areas:

Large-scale machine learning concerns the design of learning algorithms, as well as scaling existing algorithms, to work with extremely large data sets.

Deep learning, a class of learning procedures, has facilitated object recognition in images, video labeling, and activity recognition, and is making significant inroads into other areas of perception, such as audio, speech, and natural language processing.

Reinforcement learning is a framework that shifts the focus of machine learning from pattern recognition to experience-driven sequential decision-making. It promises to carry AI applications forward toward taking actions in the real world. While largely confined to academia over the past several decades, it is now seeing some practical, real-world successes.

Robotics is currently concerned with how to train a robot to interact with the world around it in generalizable and predictable ways, how to facilitate manipulation of objects in interactive environments, and how to interact with people. Advances in robotics will rely on commensurate advances to improve the reliability and generality of computer vision and other forms of machine perception.

Computer vision is currently the most prominent form of machine perception. It has been the sub-area of AI most transformed by the rise of deep learning. For the first time, computers are able to perform some vision tasks better than people. Much current research is focused on automatic image and video captioning.

Natural Language Processing, often coupled with automatic speech recognition, is quickly becoming a commodity for widely spoken languages with large data sets. Research is now shifting to develop refined and capable systems that are able to interact with people through dialogue, not just react to stylized requests. Great strides have also been made in machine translation among different languages, with more real-time person-to-person exchanges on the near horizon.

Collaborative systems research investigates models and algorithms to help develop autonomous systems that can work collaboratively with other systems and with humans.

Crowd sourcing and human computation research investigates methods to augment computer systems by making automated calls to human expertise to solve problems that computers alone cannot solve well.

Algorithmic game theory and computational social choice draw attention to the economic and social computing dimensions of AI, such as how systems can handle potentially misaligned incentives, including self-interested human participants or firms and the automated AI-based agents representing them.

Internet of Things (IoT) research is devoted to the idea that a wide array of devices, including appliances, vehicles, buildings, and cameras, can be interconnected to collect and share their abundant sensory information to use for intelligent purposes.

Neuromorphic computing is a set of technologies that seek to mimic biological neural networks to improve the hardware efficiency and robustness of computing systems, often replacing an older emphasis on separate modules for input/output, instruction-processing, and memory.

How ai and super intelligence change our future world?

Let's predict what our world looks like in the near future which is full of AI and its applications.

1. We can make our home smart by using lot connected to a AI application. For example all our home appliances has their own intelligent system and respond to our voices (voice control).
2. We all got frustrated by increasing traffic in urban areas. So what happens when a AI is implemented in traffic managing system. Then obviously no traffic happens.
3. Crimes are big issue in developed countries. When, AI is implemented in criminology then crime rate will gradually reduce.
4. Humanoid a future trend in AI can do amazing things which a normal human can't do.
5. E-learning brings a major revolution in learning process and shaped our learning skills a lot. Likewise when AI is introduced in teaching process then it can adopt and teach to any kind of students.

6. super intelligence applications can do a lot especially in the field of medical, stock exchange, gaming, defence, business etc

CONCLUSION

AI is always proved to be useful and helpful for humans. It is going to reshape our future beyond our limits. Despite the various controversy spread in the name of AI, I strongly believe it will serve the mankind in better efficient way.

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5. Appendix I offers a short history of AI, including a description of some of the traditionally core areas of research, which have shifted over the past six decades.
6. Backpropagation is an abbreviation for "backward propagation of errors," a common method of training artificial neural networks used in conjunction with an optimization method such as gradient descent. The method calculates the gradient of a loss function with respect to all the weights in the network.

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