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Forging of Humans Thinking Ideas and Machines Understanding (Computing) using the Artificial Intelligence

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ABSTRACT: The Artificial intelligence is the modern technology which makes the machine intelligent and smart. It's not surprising that the public's imagination has been ignited by Artificial Intelligence since the term was first coined in 1955. In the ensuing 60 years, we have been alternately captivated by its promise, wary of its potential for abuse and frustrated by its slow development. But like so many advanced technologies that were conceived before their time, Artificial Intelligence has come to be widely misunderstood, mischaracterized by the media, portrayed as everything from savior to scourge of humanity [1]. It is the aspect of the science which enforces the machine to be as much as intelligent like human thinking. Human can thing and implement the idea according to his wish, but for a machine it's not easy. Those of us engaged in serious information science and in its application in the real world of business and society understand the enormous potential of intelligent systems. The future of such technology which we believe will be cognitive, not "artificial" has very different characteristics from those generally attributed to AI, spawning different kinds of technological, scientific and societal challenges and opportunities, with different requirements for governance, policy and management.

KEYWORDS: Artificial Intelligence, Machine learning, Social Understanding, Forging, Computing.

I. INTRODUCTION

Artificial Intelligence is the modern era technology which has a vital role in almost every field of science. Let us consider a Programming Era (1950s — present)The shift from mechanical tabulators to electronic systems began during World War II, driven by military and scientific Needs. Following the war, digital "computers" evolved rapidly and moved into businesses and governments. They performed if/then logical operations and loops, with instructions coded in software. Originally built around vacuum tubes[2], they were given a huge boost by the invention of the transistor and the microprocessor, which came to demonstrate "Moore's Law," doubling incapacity and speed every 18 months for six decades. Everything we now know as a computing device from the mainframe to the personal computer, to the Smartphone and tablet is a programmable computer.

A. The history of computing and the rise of cognitive

To understand the future of cognitive computing, it's important to place it in historical context. To date, there have been two distinct eras of computing the Tabulating Era and the Programming Eraand IBMhas played a central role in the development of both.
We believe cognitive computing is the third and most transformational phase in computing evolution [1].

The Tabulating Era (1900s — 1940s)

The birth of computing consisted of single purpo semechanical systems that counted, using punched cards to input and store data, and to eventually instruct the machine what to do (albeit in a primitive way). These tabulation machines were essentially calculators that supported the scaling of business and society, helping us to organize, understand, and manage everything from population growth to the advancement of a global economy.

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The Tabulating Era(1900s – 1940s)

The Programming Era (1950s — present)

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The Programming Era(1950s – present)

The Cognitive Era (2011 —)

The potential for something beyond programmable systems was foreseen as far back as 1960, when computing pioneer J.C.R. Licklider wrote his seminal paper "Man-Computer Symbiosis." Much of modern computing is based on Licklider'sresearch and insights:

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The Cognitive Era(2011 –)

“M an-computer symbiosis is an expected development in cooperative interaction between men and electronic computers. It will involve very close coupling between the human and the electronic members of the partnership. The main aims are:
1. To let computers facilitate formulate thinking as they now facilitate the solution of formulated problems[2,3], and
2. to enable men and computers to cooperate in making decisions and controlling complex situations without inflexible dependence on predetermined programs…
Preliminary analyses indicate that the symbiotic
partnership will perform intellectual operations much more effectively than man alone can perform them.” 1— J.C.R. Licklider, “Man-Computer Symbiosis, “March 1960Licklider knew that cognitive computing would bea necessary and natural evolution of programmable computing, even if he didn’t yet know how it would-be accomplished. Fifty years later, massively parallel computing and the accumulation of oceans of structured and unstructured data would lay the groundwork for cognitive computing.

The world’s first cognitive system:

In February 2011, the world was introduced to
Watson, IBM’s cognitive computing system that
defeated Ken Jennings and Brad Rutter at Jeopardy!.
It was the first widely seen demonstration of cognitive computing, and it marked the end of the so-called Artificial Intelligence winter [3, 6].It is the programmable systems that had revolutionized life over the previous six decades could not have made sense of the messy, unstructured data required to play Jeopardy!.
Indeed, the goal of cognitive computing is to illuminate aspects of our world that were previously invisible patterns and insight in unstructured data, in particular allowing us to make more informed decisions about more consequential matters[7, 9].
The true potential of the Cognitive Era will beIn a global economy and society where value increasingly comes from information, knowledge and services, this data represents the most abundant, valuable and complex raw material in the world. And until now, we have not had the means to mine it effectively.
Cognitive systems are probabilistic, meaning they are designed to adapt and make sense of the complexity and unpredictability of unstructured information. They can “read” text, “see” images and “hear” natural speech. And they interpret that information, organize it and offer explanations of what it means, along with the rationale for their conclusions. They do not offer definitive answers.
It is the system which is indicated by the five question marks shown in below diagram.

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1. **infusion of products and services:**

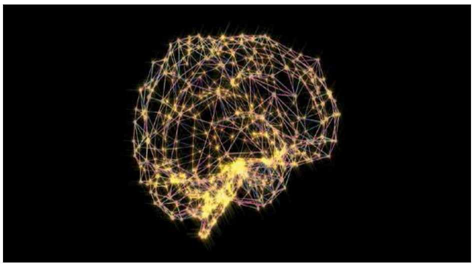
Cognition process enables new classes of products and services to sense, reason and learn about their users and the world around them. This allows for continuous improvement and adaptation, and for augmentation of their capabilities to deliver uses not previously imagined. We see this happening already with cars, medical devices, appliances and even toys. The Internet of Things is dramatically expanding the universe of digital products and services and where code and data go.

2. **cognitive processes and operations:**

Cognition also transforms how a company operates. Business processes infused with cognitive capabilities capitalize on the phenomenon of data, from internal and external sources. This gives them heightened awareness of workflows, context and environment, leading to continuous learning, better forecasting and increased operational effectiveness along with decision-making at the speed of today's data[3].

3. Exploration and Discovery:

Ultimately, the most powerful tool that cognitive businesses will possess is far better "headlights "into an increasingly volatile and complex future. Such headlights are becoming more important as leaders in all industries are compelled to place big bets — on drug development, on complex financial modelling, on materials science innovation, on launching a start-up. By applying cognitive technologies to vast amounts of data, leaders can uncover patterns, opportunities and actionable hypotheses that would be virtually impossible to discover using traditional researcher programmable systems alone.
If cognitive computing is to fulfil its true promise, the underlying platform must be broad and flexible enough to be applied by any company in any industry. And it must be able to be applied across industries [5,7]. To do that requires a holistic approach to research and development, with the goal of creating robust platform with a range of capabilities to support diverse applications from an ecosystem of developers.
This platform must encompass machine learning, reasoning, natural language processing, speech and vision, human-computer interaction, dialog and narrative generation and more [9]. Many of these capabilities require specialized infrastructure that leverages high-performance computing, specialized hardware architectures and even new computing paradigms. Each grows from its own scientific or academic field. But these technologies must be developed in concert, with hardware, software, cloud platforms and applications that are built expressly to work together in support of cognitive solutions.



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such concerns are not unique to intelligent systems. Questions aboutsecurityboth individual and institutional attach themselves to every transformational technology, from automobiles to pharmaceuticals to mobile phones. These issues are already urgent, and will remain so as cognitive technologies develop[6,8].

They are fuelled especially by today's radical democratization of technology driven by the rapid spread of networks and the cloud, and the accompanying reduction in costs.

We believe that the answer lies not in attempting

to limit that democratization, but rather in embracing it while designing cognitive systems with privacy,security and human control integrated into their fabric.

II.CONCLUSION

In the end, all technology revolutions are propelled not just by discovery, but also by business and societal need. We know that the AI is the most important aspect for all of these , but to implement it into the machine is a really wondering job. We pursue these new possibilities not because we can, but because we must.

As with every revolutionary technology, our initial understanding will be limited both by the world's complexity and by our own deeply ingrained biases and heuristics. However, for all these limitations, progress is imperative. Indeed, we pay a significant price for not knowing: not knowing what's wrong with a patient.

AUTHOR'S BIOGRAPHY

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