

The Next Analytics Age in Cyber through Artificial Intelligence

Since the creation of computers or machines, their potential to carry out a range of tasks went on growing exponentially. Humans have urbanized the power of computer systems in terms of their miscellaneous working domains, their increasing velocity, and reducing dimension with admiration to time. A branch of Computer Science named Artificial Intelligence pursues creating the computers or machines as intelligent as human beings. Artificial intelligence (AI) is one of the recurrent catchphrase of computer science. Many cyber security providers now tender products that leverage artificial intelligence and machine learning (ML) to help with detection and response to cyber threats. Artificial intelligence is moving frontward, and whether we like it or not, machine learning will play an essential role in our technological future. The largest and best companies in the world already know this, and they are investing profoundly in AI.



Source: <https://www.ascentaudiologydc.com/blog/artificial-intelligence-transforming-hearing-aid>

Thus it is well versed that the expression artificial intelligence (AI) refers to computing systems that carry out tasks usually considered within the monarchy of human decision making. These software-driven systems and intelligent agents slip in advanced data analytics and Big Data applications. AI systems leverage this knowledge repository to make decisions and take actions that approximate cognitive functions, including learning and problem solving. AI, which was introducing as an area of science in the mid 1950s, has evolved rapidly in recent years. It has turned out to be a valuable and essential tool for orchestrating digital technologies and managing business operations. Predominantly functional are AI advances such as machine learning and deep learning.

Philosophy of AI

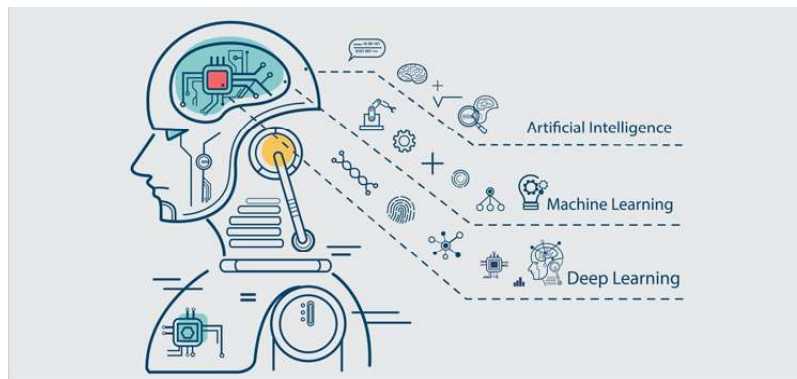
While exploiting the power of the computer systems, the curiosity of human, led him to wonder, “*Can a machine think and conduct you like humans do?*” Thus, the expansion of AI started with the intention of creating similar intelligence in machines that we find and regard high in humans.

Goals of AI

- **To generate Expert Systems** – the systems which exhibit intelligent behavior, learn, exhibit, explain, and advise its users.
- **To apply Human Intelligence in Machines** – Creating systems that understand, think, learn, and perform like humans.

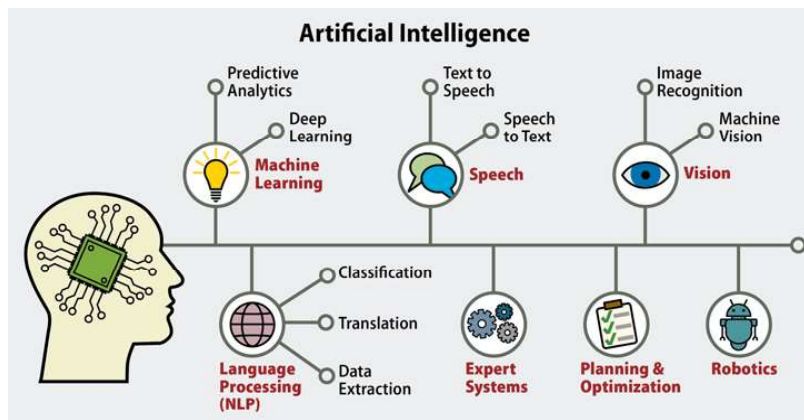
There are a number of approaches used to develop and build AI systems. These include:

- **Machine Learning (ML).** This branch of AI uses statistical methods and algorithms to discover patterns and “train” systems to make predictions or decisions without explicit programming. It may consist of supervised and semi-supervised ML (which includes classifications and labels) and unsupervised ML (using only data inputs and no human applied labels).
- **Deep Learning.** This approach relies on artificial neural networks (ANNs) to approximate the neural pathways of the human brain. Deep learning systems are particularly valuable for developing computer vision, speech recognition, machine translation, social network filtering, video games and medical diagnosis.
- **Bayesian Networks.** These systems rely on probabilistic graphical models that use random variables and conditional independence to better understand and act on the relationships between things, such as a drug and side effects or darkness and a light switch turning on.
- **Genetic Algorithms.** These search algorithms tap a heuristic approach modeled after natural selection. They use mutation models and crossover techniques to solve complex biological challenges and other problems.



Source: <https://www.thetambellinigroup.com/artificial-intelligence-transforming-the-nature-of-work-learning-and-learning-to-work/>

Thus Artificial intelligence has broad applications across many areas of business.



Source: <https://www.datamation.com/artificial-intelligence/what-is-artificial-intelligence.html>

Top 15 AI companies

List of the top 15 AI companies that have the power and resources to shape our connected future. These are the big players in artificial intelligence.

- 1. Amazon:** Trade giant Amazon has invested in both the consumer-oriented side of AI and in applications for companies and their processes. Alexa, the company's AI language assistant, integrated into its echo speaker series, is well-known worldwide. However, Amazon Web Services (AWS), a set of machine learning programs and pre-trained AI services for businesses, hasn't yet done so much. AWS currently has more than 10,000 customers, including Siemens, Netflix, Tinder, NFL, and NASA.
- 2. Apple:** Apple has been busy acquiring AI start-ups in recent years and sees Artificial Intelligence as a critical part of its future. In December 2018, the company officially appointed John Giannandrea as head of the AI and Machine Learning department after Google poached the Scottish computer scientist. He will oversee the development of products such as Siri and the company's new Create ML tool, which MacOS and iOS developers can use to create efficient and straightforward training courses for their apps.
- 3. Banjo:** Banjo was founded after the tragic bombings of the Boston Marathon 2013. The start-up uses AI to search social media to identify real-time events and situations that could be critical for emergency services and other organizations to operate faster and smarter. The company has raised more than \$120 million in funding to date, including investors such as the Japanese telecommunications giant SoftBank.
- 4. DJI:** The first Chinese company on the list, DJI, is still officially a start-up but has already been valued at 15 billion dollars. The company has a market share of more than 70 percent in the global drone market and is increasingly entering the AI market. The latest drones use AI and image recognition to avoid objects. Soon, an entry into autonomous vehicles and robotics can be expected. DJI has recently entered into a partnership with Microsoft for a drone-to-computer streaming project.
- 5. Facebook:** Artificial intelligence will be enormously powerful in the future. So it's no surprise that Facebook is investing in AI. Facebook's AI research group, known as FAIR, says it is committed to advancing the field of machine intelligence and developing new technologies to provide people with better ways to communicate. Mark Zuckerberg and Co. worked on a negotiation platform with two AIs called Alice and Bob, among other things, but ended the project after the couple began communicating in their secret language.
- 6. Google:** Perhaps the largest and most important AI company on this list is also the most obvious. Google has acquired AI start-ups as if there were going to be no more soon. Over the past four years, Mountain View has created no fewer than twelve new artificial intelligence companies. Google's CEO, Sundar Pichai, has already mentioned that in the long run we are "evolving from a 'mobile first' to an 'AI-first' world in the computer industry," and that already says everything you need to know to see where Google sees the future.
- 7. HiSilicon:** When Huawei CEO Richard Yu unveiled the Kirin 980 at IFA 2018 in Berlin, the competition was very keen. HiSilicon, Huawei's chip manufacturer, has significantly enhanced the second generation of the world's first AI smartphone chip.
- 8. IBM:** The multinational technology company IBM has been active in AI since the 1950s. The company was involved in the birth of artificial intelligence and is still firmly committed today. With Watson, IBM has created a machine learning platform that can integrate AI into business processes, such as building a chatbot for customer support
- 9. Intel:** Intel has also been on a shopping spree when it comes to artificial intelligence companies and has acquired both Nervana and Movidius as well as a selection of smaller AI start-ups..
- 10. Microsoft:** Like Amazon, Microsoft is involved in Artificial Intelligence on both the consumer and business sides. Cortana, Microsoft's AI digital assistant, is in direct competition with Alexa, Siri, and Google Assistant. Artificial Intelligence features are a large part of the company's Azure Cloud service, which provides chatbots and machine learning services to some of the biggest names in the business.
- 11. Nvidia:** Nvidia is one of the longest established AI companies and still plays an important role today. Nvidia's graphics processors are the be-all and end-all for machine learning and artificial intelligence.
- 12. OpenAI:** The non-profit research group revolves around the development of AI for the benefit of all humankind and has managed to maintain its open source mentality, although large sums of money have been raised through investments and some through acquisitions. Some of the biggest names in AI currently work at OpenAI, including deep learning expert Ilya Sutskever. Sponsors include Microsoft, Amazon and Elon Musk.
- 13. Qualcomm:** Like HiSilicon with its Kirin 980, Qualcomm is another chip manufacturer that is committed to artificial intelligence. AI plays a crucial role in the Snapdragon 855 mobile platform. The chip uses a signal processor for AI speech, audio and image functions. Qualcomm Snapdragons power some of the most popular smartphones on the market. If you're interested in AI in the smartphone, you should keep an eye on Qualcomm.
- 14. SenseTime:** You heard about the Chinese government using face recognition to track citizens, right? Well, SenseTime is the current supplier of this technology.
- 15. Twitter:** Like the other big players in Silicon Valley, Twitter is all about getting into artificial intelligence, especially with money.

This is not an end it is going into Travel, Transportation and Hospitality, Airlines, hotels, and rental car companies use AI to predict demand and become accustomed pricing energetically. Airlines also rely on AI to optimize the use of aircraft for routes, factoring in weather conditions, passenger loads and other variables. They can also appreciate when airplane require continuance. Hotels are using AI, including image recognition, for deploying robots and security monitoring. Autonomous vehicles and well-groomed transportation grids also rely on AI. It's significant to distinguish that AI is a persistently moving board. Things that were once measured within the sphere of influence of artificial intelligence – optical character recognition and computer chess, for instance – are now well thought-out routine computing. At the moment, robotics, image recognition, natural language processing, real-time analytics tools and various associated systems within the Internet of Things (IoT) all faucet AI in order to distribute more advanced features and capabilities. Thus Artificial intelligence serves up other face up to. One of the leading stumbling points for AI, including machine learning and deep learning, is inadequately constructed frameworks. When users train models with dreadful data or erect flawed arithmetical models, erroneous and even dangerous outcomes often chase.

Scholastic Seed Inc. Cybernomics A New Monthly Periodical

Research is a long-term territory with importunate and focused efforts lead to optimistic results. When research is done in the field of Cyber vis-à-vis its economics, it has a plentiful collide and connotation not only for the corporate world but also for academia. Fostering Cyber research and providing a platform to publish good quality research papers based on empirical or scholarly research work has been an incessant endeavor of CYBERNOMICS.

I truly honoured to have been selected as the founder Editor of the new monthly periodical Cybernomics. I also very proud to be working in tandem with an outstanding team of Associate Editors and members of the Editorial Board. The latter have been selected as a balanced global illustration of the guidance in our turf. This is an editorial team that is fully engaged and committed to the success of these outstanding periodicals.

In this new era of Cyber there are a number of changes that we would like to highlight to the periodical's readers, as we are self-assured such changes will plead to an extensive range of academic and information technology interests. First, our periodical is a debut edition that has been collectively designed by our leadership team that aims to represent the global network of our community from cyber society. We recognize the importance of ensuring that our initiatives in an academic format would represents the work and research being conducted in all regions of the world, and at the same time also highlights key issues critical to technocrats not only in developed countries but also in low-resource countries. Second, the periodical will feature original articles that showcase important issues related to cyber and burgeoning terms which revolves around it.

The response to our appeal to authors for contribution has been overwhelming. In spite of our preeminent efforts, due to an assessment of editorial board and the referee review board, some of the articles/papers could not be incorporated in the present debut issue, but this shall not put a ceiling on any of the authors to send their original articles, case studies, research reviews or empirical contributions for publication in our periodical.

As Editor, we recognize the value authors place on high-quality and unbiased peer review conducted in an appropriate manner. In totaling, we value the significance of rapid publication, and so to that end we have structured our editorial team to comprise Associate Editors, a Social Media Editor, and a Video Editor so we are capable to expedite the processing of submitted manuscripts. We have instructed all those involved with the periodical in an attempt to endow with the highest standard of manuscript review, editing, and publishing. We have implemented rigorous peer review criteria, and this will be reflected in the quality of published articles. We also want to persuade all those who are interested in being part of this energetic and enthusiastic team to contact us, as we will welcome your contribution. We invite colleagues working in related disciplines of cyber and Information technology as an appropriate medium for the publication of your own high-quality research.

Manuscript submissions are being accepted for future volume which will be in the regular format. Original articles can be submitted to the Editor (Word document, by email only, at scholastic.seed@gmail.com). Articles for columns should be arranged with the respective column editor. Cybernomics is a right platform for academicians, industry executives, researchers and students for sharing the views and the news of the management in terms of research papers, articles and case analysis, reviews etc.

We are firm about the ensuing issues of the periodical with regard to quality and coverage. We hope that within short time this periodical will make the academicians, industry executives, researchers and students to travel from the point of recognizing something to acknowledge the whole thing. We wish the periodicals for its effort and continuity of its tempo in the same direction in the days to come. Our sincere thanks to all the contributors for their support and interest. We once again request all academician and researchers to send their unpublished articles/papers for publication in our periodical to understand the economics of Cyber.



About the Editor



Subodh Kesharwani is an academician with a bronze medal in his Post graduate degree and Doctorate in ERP System in 2002 from Allahabad Central University. He is one of the researchers who had concentrated his research on Total Cost of Ownership [TCO] & critically evaluate ERP vendors including SAP. Dr. Kesharwani is presently an Associate Professor, School of Management Studies, Indira Gandhi National Open University, New Delhi with a total 20 years of hardcore teaching and research in Information System and its linkages with various domains of management. He is presently an expert in various burgeoning areas and had delivered a talk as a trainer on MOOCs, Team Building, E-commerce, Technology Enabled Learning, E-resource, Use of Technology in research, Block chain, Internet of Thing, Enterprise Information System, Free & Open Source Software, etc. Dr. Subodh had developed and coordinated a program in Entrepreneurship & Business Skills in collaboration with Rajiv Gandhi Foundation (RGF), India and Commonwealth of Learning, Vancouver, Canada which provides training to the trainers at IGNOU. He is presently a program coordinator of IGNOU-ICWAI alliance. He is also a founder Editor-in-chief of a peer reviewed refereed journal entitled "Global Journal of Enterprise Information System [GJEIS] from 2009 onwards, <http://www.informaticsjournals.com/index.php/gjeis> which has completed its 10 years term and published 40 issues till date both in printable and virtual format. The Journal GJEIS is equipped with DOI from Crossref USA and listed in almost 50 directories in the world with an impact factor of 2.35.

Dr. Kesharwani had participated as a debater in diverse TV show and participates in Interactive Radio Counseling including Gyanvani and Gyandarsshan. He had written a Book entitled "Enterprise Information Systems-Contemporary Trends and Issues" in a co-authorship with Professor David L Olson (University of Nebraska, USA. which was published by World Scientific, USA. <http://www.worldscibooks.com/business/7287.html> He had another text book on ERP system which caters a B.Tech VI Semester CS and IT Students. He had developed educational contents for various academic Institutions such as ICAI, IGNOU and contributed articles for various journals/ magazines, etc. He had chaired a good number of technical sessions at various conferences & seminars nationally and globally. He is presently running a "Blockchain Federation for Indian" (BFI) which he thinks can bring paradigm shift holistically in a technological era.

Dr. Kesharwani had been awarded "IT Innovation & Excellence Award 2012" in the field of ERP solutions, by KRDWG's Selection Committee at IIT Delhi. He is in the panel of the Steering Committee of the International Journal of Computing and e-Systems, TIGERA-USA. He was in the key panel of round-table workshop conducted by Ministry of Corporate Affairs in Association with Indian Institute of Corporate Affairs to streamline "Corporate Data Management and Governance". He was one of the resource person who share the experience with the 12 different ITEC countries participants who had attended International MDP.

Dr. Subodh Kesharwani
Editor