Teach your children Artificial Intelligence

Artificial intelligence (AI) is known for its superior ability to perform cognitive functioning of human functions, including learning, thinking, speaking, performing routine tasks, solving problems, and practicing some human behavior. AI is a key component in the Fourth Industrial Revolution. Its performance is coupled with tremendous advances in computing power, processing a large amount of information, fast Internet connectivity from anywhere and optimal use of algorithms similar to the human mind.

AI systems have become a key element in many innovative industries such as the Internet of Things (IoT), autonomous vehicles, electronic services, big data processing, genetic engineering and genome, fraud detection, retail and medical diagnostics, 3D printing as well as their ability to analyze quantities. AI has spurred interests in the use of information not only for learning but also for making decisions by building relations and linking large data sets with each other at a tremendous speed and emulating them in a way that is difficult for a human to deduce.

The AI algorithms are generally based on assumptions and concepts. They have capabilities to process billions of cumulative data to allow users to reach more informed and accurate conclusions. They also contribute to finding ways to address crises and critical situations such as natural disaster search and rescue as well as to developing robots as a front line against risk. AI fosters digital transformation and has the potential to improve human ingenuity and expand human capabilities to meet challenges, seize opportunities and achieve greater well-being in many aspects of life in ways that are now unimaginable.

AI systems include machine learning that is most common where data is fed, patterns are discovered, and information is understood and interpreted. They also include neural networks and deep learning through which the human brain is simulated. In this context, models of AI are enabled to learn and process images through computer vision. Intelligent robots are other forms of AI systems that combine artificial intelligence with robot machines to perform advanced and complex tasks. Natural language processing has been developed so that language of speech is interpreted, understood and converted into written text or treated as commands. Biometrics have also been developed so that physical and emotional characteristics are analyzed and used in many tasks such as identification. They are also used in virtual proxies for simulating personalities and interacting with customers and users and helping them to access information.

AI is of great importance and potential to drive development and innovation and to contribute to the achievement of the Sustainable Development Goals (SDG) as defined by the United Nations. SDGs focus on improving education, providing health services, eradicating poverty, creating jobs, enhancing governance and embracing creativity. With the use of limited AI systems, some developing countries have made progress towards the achievement of SDGs, mainly in economic development, improving health, eradicating poverty, increasing education, developing agricultural productivity, eradicating illiteracy, securing water resources and improving sanitation. However, the level of development and progress in the Arab countries is uneven, especially in areas where there are ongoing conflicts. Millions of people continue to live below the poverty line and suffer from water scarcity, poor health services, inadequate shelters and degrading educational environments. In coordination with national and Arab policies, international development efforts and technical sectors, AI technologies can be explored and promoted as viable solutions to contribute and progress towards the achievement of SDGs in the region.

In the light of the growing need of the labor market for technical expertise in AI technologies, developed countries are setting up policies to adopt the teaching of AI in the early stages of education. This will enable future generations to accommodate AI as new tools for creativity and invention. The following is a proposal for AI learning topics that can be incorporated at different stages of education:

1. **Elementary Stage:** To motivate students in elementary schools to learn math, science and engineering and to start teaching AI concepts through interactive learning that is based on fun activities and acquisition of the AI basics and robotic fundamentals. Students may also be motivated to learn software and application development and building AI systems through structured and advanced curricula.

2. **Secondary stage:** To motivate students in secondary and high schools to apply software and use AI systems in real practical scenarios through applications. Learning in this domain can be enhance through competition, case studies and project-based programs. As a result, students are expected to develop entrepreneurial and creative thinking as well as problem-solving and teamwork skills.

3. **Advanced stage:** To motivate students in colleges and universities to apply design concepts and promote innovation in AI as well as to encourage students to develop their specialized expertise, conduct outstanding research and participate in forums and conferences to exchange experiences and showcase practical experiences in software and AI applications.

The technical development process will obviously continue in order to contribute to the sustainable development of professionals, industries and service businesses. The future of AI is exciting and promising and calls for launching AI specialized business sector as means of economic development and social welfare.