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The AI Revolution

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Make no mistake, artificial intelligence is an active force within our society. Intelligence, the ability to acquire and apply knowledge and skills, can be seen in artificial hosts that drive our everyday life in the form of programs. Using a series of logical assessments, these programs digest information and respond to stimuli. The earliest forms of this came about from gaming programs like computerized chess and checkers. Fast forward to today, and we now augment our own intelligence readily with technology. Smart phones are the most relevant example to this idea. Reducing the time required to acquire new information, the human mind is exponentially more capable. This objective view of the technology gives insight into how near the approaching A.I. (artificial intelligence) revolution is.

It may be hard to consider that every person with a smartphone has access to artificial intelligence, but take a minute to think about how much more efficiently we operate with them at our disposal. As they stand, innovations on these instruments are geared toward integrating the software more seamlessly into our existence. With voice command and innovations such as Google Glass, it is generally accepted that a fully artificial-biological integration is inevitable. The perceived epitome of artificial intelligence, a humanoid or cyborg creature, indistinguishable from a human being, should not be used as a measure of progress. While we do currently co-exist with artificial intelligence, this picture remains several decades away. It is generally accepted to use the gaming industry as the 'standard' that artificial intelligence has to offer the world. Partly due to the reliability of user results, these programs offer little more than sensory stimulation, and, therefore, are confined to such parameters. Concepts like Pokémon GO and virtual reality, however, work to fully integrate this branch of technology into our world. In a more practical sense, companies all over the world employ business analytics and information systems to calculate things from location decision, to customer base, and even direction in innovation. These are all attempts to apply knowledge and skill more efficiently and establish the groundwork for a more fully integrated system. Through these programs, a company effectively develops a representative 'voice' for an artificially intelligent entity. Tablets with points of sale installed placed into the hands of people or at readily available kiosks essentially become fingers outstretched and interacting with the environment. To further inform this system, a company can either pay someone to formulate and input data in a meaningful way, or they can develop a program to do this automatically.

Eventually, these systems must account for the action of other entities, if they do not already do so. This problem raises the question of their consciousness, even if only within the parameters of business. At this point, we as a society have openly agreed to ever-increasing assistance from the technology. This implicit agreement, in turn, gives artificial intelligence endless amounts of information about us. Objectively speaking, this information has not been a problem thus far.

However, it is important to note that conversations often come up, from this author's firsthand experience, where one

or more people express ill feelings of the invasive nature in how the technology acquires information. While this can bring into question matters of moral, ethical and privacy standards, this article is neither the place or time to start and finish that conversation. At present, we must accept that the influence that we allow artificial intelligence to have on our lives for now remains still within our control. Although there are programs which have reached a point of self-realization and self-reliability, we still consent.

This stage is more appropriate for appreciating the possibilities that artificial intelligence has to offer now and in the future. For one, this technology holds much promise for healthcare. It is well understood that people can vary greatly in their biological needs. Rarely does a singular method of treatment serve as a cure for every person with any given ailment. This is but the tip of the iceberg in terms of understanding health. With predictive technologies, it brings about opportunities in preventive care, elevating quality of care, and saving money all at the same time.

Along with this movement, the job market will see both significant losses and gains. Even during the time it requires for the technology to mature, the demand for programmers and technicians continues to sky rocket, while also stimulating the production of jobs related to research and the development of the hardware. Conversely, stark examples crop up like McDonald's actively updating all franchise locations to include an automated ordering system. This automation will reduce the need for the number of workers needed to take customer orders. It will also require the company to staff people to service and further improve the instruments put into place. Meanwhile, Uber is creating an automated chauffer service. As disastrous as Uber's initial trials have proven to be, there can be no doubt that countless people are working around the clock to assure accountability of such a service.

The computing power required to facilitate such a revolution calls for construction in the form of updated infrastructure. A quick google search will inform you that the market cap, or overall estimated value of investment into AI, is in the hundreds of billions of dollars, which makes for a good long-term investment in more than one way. Forbes and TechEmergence corroborate these figures and provide quips on AI's impact for the economy. For instance, in 2016, trucking companies took part in the platooning challenge made by the Dutch government. Platooning is an automated driving system that wirelessly controls vehicles by placing the vehicles closer together than they would otherwise be able to under human control, allowing them to travel as a cohesive unit. In adapting this transportation tool, they conserved 15% on fuel costs and cut on drive time. These increases in efficiency herald the possibilities of AI's power to provide absolute traffic solutions.

Four years ago, Google began implementing an AI suggestion system, which provided engineers and technicians with suggestions for settings to save energy consumption from data management centers. Earlier this year, a similarly updated system, given authority to make changes actively, began using 'counter-intuitive' methods, as described by related staff to save power. During a tornado watch period in the Midwest, the software controlling the system re-calibrated to the changing barometric pressure, temperature and humidity, resulting in conservation of power.

Elon Musk, CEO of Tesla and Space-X and a key innovator of the 21st century, recently made comments on the subject during a somewhat controversial podcast interview with Joe Rogan. He explained that artificial intelligence is much more powerful than most people are willing to realize. He also explained that sooner, rather than later, the public will have access to what can best be described as 'superhuman' intelligence. According to Musk, a neural net will offer instant communication between our minds and a computerized device. He noted that this will be available to anyone who wishes to participate in the new system, regardless of financial capabilities.

The AI revolution offers many opportunities to society and individuals as a whole. Being conscious of these capabilities is vital, with the need for understanding becoming exponentially more important for people all over the world. Please take a minute to consider what it might offer you, or better yet, what you might be able to offer, with the help of artificial intelligence. Find a way to contribute to the inevitable, as the idea of futuristic becomes obsolete.

Sources:
https://www.techemergence.com/
https://www.forbes.com/
https://qz.com/656104/
https://www.datacenterknowledge.com/