

Research Paper

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Exploring Artificial Intelligence

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Introduction

Artificial Intelligence is something we've envisioned for decades- but usually this has been in the fictional world. It's defined as the "capability of a machine to imitate human behavior"(Merriam-Webster) and it's a concept that has both intrigued and worried us. We've seen countless depictions of a society overrun by various sorts of artificially intelligent machines, but we are just now hearing these ideas in the realistic sense. As the subject becomes more and more tangible, there are many exciting possibilities arising, but also an equal amount of valid concern for how advanced this technology could become.

Current Use

The majority of us have smart phones that we can talk to and receive responses from, like Siri. And systems like Siri are forms of artificial intelligence because they can attempt conversational exchanges and answer questions or make comments. Some people even own gaming systems that will utilize facial and auditory recognition to enhance the experience, like the Xbox Kinect. With the Kinect, the machine will listen for different voices and search for different faces in order to establish who is using the system, this is quite a personalized and advanced form of artificial intelligence. We have grown leaps and bounds since the days of robot chatrooms where computers could respond to just a few basic questions, but we have yet to reach the point where robots can actually perceive "the overall tone of the conversation, wider context, metaphors, or emotional overtones" (Dujmovic, 2014). Though, currently, we are more advanced in the field of artificial intelligence, it is far from what it can and may soon be. "AI still has many limitations, with AI scientists still not able to 'solve the problem of common sense'"(Gross, 2014) and "most of the consumer-level artificial intelligence applications we're interacting with

today can barely be classified as such” (Dujmovic, 2014). We are only at the frontier of what will possibly by a pivotal change in the way we live and the way the world works.

Security

Though people are eager to see what artificial intelligence will bring, the sense of privacy is often a concern. With systems that involve cameras that detect faces and voices, and machines that can retrieve sensitive information, there grows a lack of security. There’s already been use of artificial intelligence in wiretapping and searching for key trigger words (that might indicate terrorism) spoken over the phone. This is quite a breach of privacy, though most of the public is now aware that phone calls can be listened to (or transcripts can be read) without an individual’s authorization, few are aware that an artificially intelligent robot may be eavesdropping (Borowski, 2010).

But in addition to this, we’ve reached a point where we are constantly connected to items that have GPS tracking abilities pinpointing our locations throughout the day and we input our every activity in order for these systems to truly and intelligently connect with us. Think about how much information you enter into your phone so that it can remind you of events and calendar notes, respond to texts by just listening to your voice, play your voicemails or read you your emails; all of this seems so ingrained in our daily, techno-filled, modern lives that we rarely stop to think what our phones could say or do if they grew a mind of their own.

There has always been a fear that, if robots could act and think like us, how soon would they start having the capacity to attack and harm us? In the end, this is what impacts our sense of security in the most basic and impactful regard. It is hard to say how we could prevent robots to access emotions that would fuel crime- if they were built to mimic the minds of humans, would

they not have the same dark flaws? And would they soon want to overcome their makers or perhaps entirely wipe out their oppressors? It is, perhaps, only time that will tell.

Ethical and Social Implications

This fear about artificial intelligence, one that humans have often imagined- the machines or robots “taking over,” is just as much a social issue. Bill Gates recently said, in reference to the advancement of artificial intelligence, “I don’t understand why some people are not concerned.” And according to Elon Musk, Tesla’s exec, AI could be “our biggest existential threat” (Holley, 2015). Hearing that corporate technology giants fear the capabilities of artificial intelligence, certainly puts the idea into perspective. Many fear that AI machines could rapidly advance till we can no longer control them. “Once you start to make machines that are rivaling and surpassing humans with intelligence, it's going to be very difficult for us to survive,” Gates added.

An important social, ethical, *and* legal implication would be the treatment of AI robots and whether they’d be given rights if they eventually became incredibly human-like and able to process pain and emotion. It isn’t hard to imagine a world where people can’t comprehend that a machine is more than a thing and if artificial intelligence advanced to the point where robots were thinking for themselves we could not morally allow people to live that way. Mistreating machines that are made to think like us “would be detrimental to humankind's moral, ethical and psychological well-being” (Ashrafian, 2015). Though the machines may not have a beating heart, it seems more crucial that they have a working mind that can understand what is happening around them or to them. On the other hand, we would also have to acknowledge the differing relationships that could arise between humans and robots and whether it would be something society could accept. And if robots could be hacked into committing crimes, what would be the

legality there? It is undeniable that society would have to rearrange itself for this new group of peers.

Many only think about how human life could be affected with the emergence of AI, but it is also crucial to recognize that we would have to set laws on how artificially intelligent machines would treat each other. There is a scene in the Spielberg film, *A.I.*, where robots are shown fighting against each other for the enjoyment of the humans, but as one journalist puts it, “civilized society shows contempt for animal fights that are set up for human entertainment... sentient machines that are potentially much more intelligent than animals should not be made to fight [each other]” (Hutan, 2015) and crimes committed by robots towards robots would be an additional issue that’d have to be regulated.

Future Use

In the future, technology experts hope to use artificial intelligence for good, gearing their abilities towards the medical field (allowing AI machines to compute diagnoses by searching through all of their installed medical knowledge) and jobs such as assembly and financial advising (where their computing abilities would far surpass the human potential). There are a lot of jobs for middle-class workers that are easily replaceable by computers, which is another major concern for the public as far as the ‘take over’ of the robots. Gates, in discussing the progress of AI, said, “Once computers/robots get to a level of capability where seeing and moving is easy for them then they will be used very extensively” (Holley, 2015). Not only can robots soon become a less costly employment opportunity for businesses, but they may soon be much more efficient than humans, lacking the obvious human qualities that can slow people down or distract them. The fear, in this case, may be how many jobs AI machines will confiscate from the human public

and, as they keep advancing, will employment continuously dwindle till we are faced with an entirely new work force? We could be seeing an “AI device that matches the processing power of a human brain within 12 years” (Gross, 2014), which means that there’s far more ahead of us than we can truly imagine.

Bibliography

Ashrafian, Hutan. (2015, March 30). Intelligent Robots Must Uphold Human Rights.

Retrieved June 17, 2015, from <http://www.scientificamerican.com/article/intelligent-robots-must-uphold-human-rights1/>

This article was originally published in Nature Magazine on March 25, 2015. It was retrieved from it from the Scientific American website which is a reliable source because it is a well-established publisher. They are, according to their site, the “oldest continuously published magazine in the U.S.”. The article talks about the human rights we would be morally obligated to uphold for robots if they were to have advanced artificial intelligence.

artificial intelligence. 2015. In *Merriam-Webster.com*. Retrieved June 14, 2015,

from <http://www.merriam-webster.com/dictionary/artificial%20intelligence>

This is simply the online Webster dictionary that I accessed to provide an official definition of the term and idea of “artificial intelligence”.

Borowski, Samuel Mark. (2010). Balancing Privacy With National Security Is Artificial

Intelligence the Key to Warrantless Wiretaps?. Retrieved June 14, 2015, from

<http://search.proquest.com.mutex.gmu.edu/pqrl/docview/503100876/20B7D5B0E94EB5PQ/1?accountid=14541>

This is a journal publication that was originally published by the American Bar Association for the Scholarly Journals. I retrieved it from the ProQuest database which shows that it is reliable. It discusses, in depth, the use of artificial intelligence in national security.

Dujmovic, Jurica. (2014, September 12). Opinion: Artificial intelligence is creeping into our everyday lives. Retrieved June 17, 2015, from <http://www.marketwatch.com/story/artificial-intelligence-is-creeping-into-our-everyday-lives-2014-09-12>

This article was written for the Market Watch website and discusses the current and possible future of artificial intelligence. It touches on Siri and talks about robot chatrooms like Cleverbot and how this is far from what our future could hold in the world of AI technology. The author also touches on the possibilities of a world involving AI robots among us.

Gross, G. (2014, October 6). The future of artificial intelligence: Computers will take your job. Retrieved June 14, 2015, from <http://www.pcworld.com/article/2692352/the-future-of-artificial-intelligence-will-computers-take-your-job.html>

This article was written by a Washington correspondent for IDG News and was published on the PC World website. It discusses the ways artificial intelligence will change the work force because of the technology's ability to replace a large quantity of jobs with robots/computers. The writer mentions that we are only at the beginning of what AI can, and most likely will, be.

Holley, P. (2015, January 29). Bill Gates on dangers of artificial intelligence: 'I don't understand why some people are not concerned'.

Retrieved June 14, 2015, from <http://www.washingtonpost.com/blogs/the-switch/wp/2015/01/28/bill-gates-on-dangers-of-artificial-intelligence-dont-understand-why-some-people-are-not-concerned/>

This article was written for the Washington Post and highlights ideas brought up in a discussion with Bill Gates on artificial intelligence. Through quotes, we are shown how Gates feels about AI and his worries for the possible future of this technology. The article provides a wonderful look at the fears of artificial intelligence technology advancement.