

Artificial Intelligence and the Future Robot Economy

Paul Conn

Bellarmino University

Last week, Microsoft had to shut down their chat robot A.I. from Twitter after it started tweeting racist, sexual and generally psychotic messages to followers. Tay, as the AI is called, was programmed to talk as if she was a teenage girl.

Was this the result of bad programming or a disgruntled developer getting back at the evil Empire? Not in the least. The A.I. did what it was supposed to do by learning how to interact with humans and respond based on what they had tweeted to her. So the human users were the culprits. This, and other past examples demonstrate how an A.I. can be manipulated and molded by its interactions with humans into producing undesired or uncontrollable results. This same unknown element of AI's evolution explains why we need to discuss the rise of Artificial Intelligence and the role that cognitive technologies and robots will have on our economy and future job prospects. The future is unpredictable and a little scary.

Artificial intelligence is not a new subject, but recent advancements in this field now make it imperative that we pay attention. But what is artificial intelligence? It depends on who you ask. As the technology has increased, so have the differing answers to this question.

At a recent conference I attended on emerging web technologies I listened to a talk on artificial intelligence and they defined A.I. as a group of cognitive technologies that emulate human learning. These include natural language processing, semantic decision making, visual sensing, and adaptive learning. A.I. is able to perform these skills at an ever increasing level of ability.

Many scientists believe that at some point in the future machines and humans will become equals in intelligence and cognitive ability. This is called the singularity and it is a point

at which we may reach 'peak human', the point at which machine intelligence has evolved beyond the capabilities of humans.

In 1950, scientist Alan Turing proposed a test for defining computer intelligence. A human would interact with a computer via a text interface and if that computer could trick a human 70% of the time into believing they were conversing with another human, the computer passed the test and would be considered intelligent and capable of thinking like a human.

Robots are generally defined as a system of sensors, controls, and software used to perform a task. Robots are often thought of as being a machine but robots can also be virtual with no 'body' or ability to move. The Microsoft chat robot mentioned at the beginning is such an example of a virtual robot or bot. Examples of physical robots include the Roomba, drones, and the robotic arms and machines you find in a Tesla manufacturing plant.

Now that we have a base of knowledge concerning AI and robots, I would like to discuss how we are currently using robots and A.I., how they will evolve in the future, what affects they may have on our careers, and finally, how you can be prepared for this eventuality.

Robots have been used in the workforce since they were first introduced to a GM automobile plant in 1961. They currently serve a role in areas where using a human may be impossible or dangerous, such as space exploration or down a small mine shaft. They are also used to help improve productivity in manufacturing, where they can perform repetitive tasks without slowing down or messing up because they are tired. Until recently, robots have been confined to cages where they did not work alongside humans and generally were not mobile or multi-functional. Now we are beginning to see robots that work alongside humans in warehouses, vehicles, and even in your home!

Today, we use A.I. and cognitive technologies without even thinking about it. If you check Facebook you are familiar with the visual sensing A.I. that has learned what you and your friends' faces look like and can automatically tag you in photographs. While driving to work you may have received alerts about traffic or weather. Depending on the system you use, you may have even been automatically detoured to a faster route. These are all examples of A.I.'s exhibiting cognitive behavior that was historically only done by humans.

As a matter of fact, A.I.'s are all around us. The Internet of Things (IoT) is the next big thing where all of your devices, wearables and appliances work together to make your life better. The latest generation of these powerful AI's are churning through huge amounts of data to try to anticipate the user's needs. They are able to do this because your tech devices know where you are, what your routine is, and even your likes and dislikes.

The power behind all of these interconnected devices is the ability to predict and automate tasks. It is this automation that is transforming the workplace and the types of jobs that robots and smart A.I.'s can now perform. Researchers at the University of Oxford published a study estimating that 47 percent of total US employment is "at risk" due to the automation of cognitive tasks. 47 PERCENT! Nearly half of the working population is at risk of becoming unemployable. Entire industries in shipping, transportation, hospitality, HR, and even healthcare will be partially or fully automated.

Thus, the future of work may change for huge segments of the population forever. During past technological revolutions, new technologies more than covered the loss of jobs because of obsolete technology. The introduction of the automobile put horseshoe makers, stagecoach drivers and wagon builders out of business. But the number of jobs created by the

automobile ecosystem dwarfed the jobs created by the horse and buggy. This may be the first time since the Industrial Age began that a new technology destroys more jobs than it creates.

In spite of this dreadful indictment on the future economy, similar things were said about the Internet. While it has certainly destroyed jobs in retail, travel, and other industries, it has also created jobs in social media, engineering, design, and e-commerce, to name a few. Small businesses can more easily compete with larger ones online and open their businesses to markets they never dreamed of being able to have access to. In short, we can't possibly imagine all of the new types of jobs an automated workforce could create. But you can prepare yourself for this new 'normal'.

First off, we will need to continue to upgrade our skills and knowledge. Machines will continue to learn and so must we. Attend seminars related to your industry, pursue advanced degrees and read books/trade journals that will keep you up-to-date in your field.

Secondly, one should build and develop leadership and communication skills. Although we may be no match for the speed at which computers can process data, we have the upper hand when it comes to managing projects, people and tasks. Develop those people skills and volunteer to lead projects or show initiative by working to improve processes and productivity.

Finally, embrace the technology. If you find yourself in an industry that relies heavily on A.I. or robotics, learn to work with these technologies and you will find yourself at the front of the line for job opportunities because you have demonstrated that you can integrate well with these machines and understand how to work as team.

To sum up, yes, the future is unpredictable and will probably be a little messy too. The only way to be ready is to improve your strengths, learn more about your competition, and

prepare yourself for a future where your new Project Manager may be named Alexa, Siri or simply, Hal.

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