**History of Artificial Intelligence**

**The Beginning of Artificial Intelligence**Most of the world has definitely heard about Artificial Intelligence, but what percentage of those people actually know the history of it? The concept of AI was introduced to our world in the nineteenth century. The first ones who actually came up with the idea of AI and robots were science fiction writers: “[L. Frank] Baum wrote of several robots and described the mechanical man TikTok in 1907, for example, as an “Extra-Responsive, Thought-Creating, Perfect-Talking Mechanical Man … Thinks, Speaks, Acts, and Does Everything but Live.””[1] Those stories had a high impact on the public and gave high inspiration for those to start researching Artificial Intelligence. In the early nineteenth century, modern computers were just invented and electronics started to improve. In well-known laboratories, such as Alan Turing’s in Manchester, the Moore School at Penn, IBM and many others, scientists started working on their projects more in-depth and were beginning to see results.

However, Turning was probably the most influential when it came to the development of AI: “Turing’s 1950 seminal paper in the philosophy journal “Mind” is a major turning point in the history of AI.”[1] He believed that there was a possibility that one could program an electronic computer to behave intelligently, like a human being. Turing was also the one to come up with the ‘Turing Test’.[2] This was a sensation in AI industry as this test was able to observe a conversation and determine if whether or not it is a human speaking or a robot. If the test was positive, it meant that the machine was “thinking”.

**The Advancement of Artificial Intelligence**

The work on researching and programming continued between 1950 and 1960 as AI was tested in games. For example, Christopher Strachey and Dietrich Prinz wrote a checkers and chess program respectively using the Ferranti Mark 1 machine that was located in the University of Manchester.[3] After many experiments, tests and improvements, people were able to bring AI to a point where they gained the necessary skills to challenge and play against amateur players. This measure of progress inspired researchers to continue.

Another important point in the history of AI happened at the Dartmouth Conference of 1956, which was organised by John McCarthy, Marvin Minsky, Claude Shannon and Nathan Rochester[4]. Scientists who created “programs with intelligence” were invited to this occasion and from there, they discussed about what to name this area of expertise. John McCarthy had persuaded attendees to accept the term “Artificial Intelligence”. However, this area of expertise was not only given a name, but was also given its first success, its mission and its major scientists. The scientists were astounded by what AI is capable of as the programs demonstrated showed off its potential. They managed to solve algebra problems, prove geometric theorems and even learn how to speak English. Obviously with this progress, they were satisfied and wanted to see more progress. Governments were providing agencies, like DAPRA, with any financial needs and they were expected to build a fully intelligent machine in less than 20 years.

In my opinion, the biggest invention in 1960s was the first chatterbot called “ELIZA”, which was developed by Joseph Weizenbaum.[5] Even nowadays, AI chatterbots are quite impressive. However, ELIZA wasn’t entirely great at speaking English and she would sometimes struggle to create coherent sentences. Nonetheless, people thought that they were speaking to a real human being. She could give a predetermined response to questions that were asked to her; she would rephrase what was said to her with some grammar rules and give an answer back to the speaker. This was a massive progress in the AI industry, and chatterbots are still used today.

The first appearance of Robotics was in Japan during 1972. Waseda University started working on the “WABOT project” around the year 1970.[6] WABOT-1 was a full-scale, intelligent, humanoid robot. It consisted of a limb-control system, conversation system and a vision system. WABOT-1 was able to communicate with a human being in Japanese. It could also walk and move objects around using its hands. This may sound like a standard robot nowadays but back in the 1970s, this was the first ever robot, which moved scientists minds many years forward. However, it was “estimated that WABOT-1 has the mental faculty of a one-and-half-year-old child.” Scientists received a foundation for robotics and AI. From here, they have a way to make progress while improving their invention. With a high financial support from the Japanese government, the WABOT-2 project launched in 1980. This time around, WABOT-2 was an artistic robot. Scientists tested WABOT-2 and its capabilities through music. This was done by programming the robot to play keyboard instruments. It was able to keep conversation with a human, read and play average difficulty music on a keyboard instrument. In fact, WABOT-2 was the first stepping stone in developing a “personal robot”.

**Artificial Intelligence in the Modern World**

In 1997, ‘Deep Blue’, a chess-playing computer developed by IBM, had managed to defeat world chess champion Garry Kasparov.[7] Although the computer had lost the first match, it managed to improve enough to the point that it was capable of processing 200 million moves per second. This went all around chess community and has greatly impressed them. The idea that a computer was able to beat a champion in chess was a crazy concept for people.

Years later, in 2005, a “driverless car” named Stanley was created by computer scientist Sebastian Thrun and a team from the Stanford Artificial Intelligence Laboratory.[8] Stanley was the first ever autonomous vehicle to complete a 132-mile course, which won a DAPRA Grand Challenge. Not too long after, in 2009, a multibillion company known as Google develops their own self-driving car.[9] In 2015, they let the car for the first time on a public road.

Siri is a virtual assistant that was originally developed by the SRI Artificial Intelligence Centre in 2010 but was acquired by Apple, a technology company.[10] This invention had a high impact on about billion users that use electronic devices made by Apple. Later on, Amazon launched a similar project called ‘Alexa’ in 2014.[11] Alexa was a virtual assistant that helps people with everyday tasks, such as shopping. Virtual assistants are considered to be really helpful in our daily lives, especially for people with disadvantages.

However, AI is still far from being perfect. In 2016, an AI chatterbot known as ‘Tay’ was released by Microsoft.[12] This bot was based on a 19-year-old American girl and the goal of Tay was to learn by interacting with people on Twitter. Unfortunately, the project shutdown after 16 hours, due to the offensive and inflammatory tweets that the bot was received. These tweets eventually corrupted the bot to a point where it also began to start tweeting these same offensive tweets and had to be taken off of Twitter by Microsoft. Tay was later replaced with a new bot called ‘Zo’.

Nowadays, new technology is still being developed quite quickly and new inventions are still being made every day. A lot of people are interested in sponsoring the AI researches, which means that the predictions that scientists have made in the past could still potentially come true.

Sources:

[1] Buchanan, B.G., (2005). “A (Very) Brief History of Artificial Intelligence.” AI Magazine, Vol. 26, No. 4, pp. 53 – 60.

[2] Ireland, C., (September 2012). “Alan Turing at 100.” The Harvard Gazette,   
<https://news.harvard.edu/gazette/story/2012/09/alan-turing-at-100/>.

[3] Copeland, J., (1993). “Artificial Intelligence.” W.B., Blackwell Publishers, 1st Edition.

[4] Moor, J., (2006). “The Dartmouth College Artificial Intelligence Conference: The Next Fifty Years.” AI Magazine, Vol. 27, No. 4, pp. 87-90.

[5] Weizenbaum, J., (1976). “Computer Power and Human Reason: From Judgment to Calculation.” W. H. Freeman and Company, New York.

[6] “Development of Waseda Robot”, Waseda University, pp. 2. <http://www.humanoid.waseda.ac.jp/booklet/kato\_1.html>.

[7] Campbell, M., Hoane, J., & Hsu, F., (January 2002). “Deep Blue.” Artificial Intelligence, Vol. 134, Issues 1 -2, pp. 57 – 83.

[8] Binkovitz, L., (October 2012). “Robot Car Stanley is on the Move.” Smithsonian, <https://www.smithsonianmag.com/smithsonian-institution/robot-car-stanley-is-on-the-move-87776637/>.

[9] Guizzo, E., (October 2011). “How Google’s Self-Driving Car Works.” IEEE Spectrum, <https://spectrum.ieee.org/automaton/robotics/artificial-intelligence/how-google-self-driving-car-works>.

[10] Schonfeld, E., (April 2010). “Silicon Valley Buzz: Apple Paid More than $200 Million For Siri To Get Into Mobile Search.” TechCrunch, <https://techcrunch.com/2010/04/28/apple-siri-200-million/>.

[11] Ovenden, J., (N.D.). “How Amazon Alexa Works: The technology behind the machine learning device.” Innovation Enterprise, <https://channels.theinnovationenterprise.com/articles/how-amazon-alexa-works>.

[12] Barbaschow, A., (July 2019). “Microsoft and the learnings from its failed Tay artificial intelligence bot.” ZDNet, <https://www.zdnet.com/article/microsoft-and-the-learnings-from-its-failed-tay-artificial-intelligence-bot/>.