IT Technology Report: Nicholas Bond

**What is NLP and Chatbot?:**

Natural Language processing is a technological advancement that originates in 1950 when Alan Turing published the well known article “Computing, Machinery and Intelligence” an article that discussed “The Imitation Game” which we now call the Turing Test. Natural Language Processing is a system we have developed over the decades with numerous functions, from sentiment analysis to text to speech and speech to text voice commands. The most common thing built from NLP is the chatbot/s Alexa and Siri, we send commands, share data and these services respond as human as possible. Which is the point of the Imitation Game, to determine the intelligence of a machine indistinguishable from that of a human.

With NLP we can understand a foreign country spokesperson’s speech as they are saying it, be it through a vocal translator or subtitles we have developed tools and technology that allows us to not only communicate better with machines but with the world at large. In the next few years starting from early 2020 it was expected in the next 3-5 years some more groundbreaking advancements in existing technology would be on the rise, from AI and Machine learning developments to AR and VR systems whilst the VR is still very much hanging in the balance it still is on the forefront of many developer minds but AR is steadily growing in to a marvel of its own kind. If you think the current list of things Natural Language Processing can do now is impressive with Siri, Alexa and other Chatbots and AI imagine what the future of data gathering and processing will be but to try and pin down exactly what we are going to see in the future is a lot harder than one would imagine.

As mentioned NLP has provided us tools known as chatbots, in its simple forms we have seen them as social media extensions that provide quick understanding of the system’s functions. Though more advanced forms of chatbot technology is Siri and Alexa, mobile assistant software that when activated and communicated with in different forms provide services and data upon request. Alexa could be connected to alarm systems, mobile phones and other devices and with a simple phrase

“Alexa intruder alert” these systems could be set off simultaneously providing much needed security. Siri and Alexa both provide information by asking simple, non open questions and these answers can be links, images or just outright readings of articles using text to speech functions.

With countless emerging industries, companies, developers and programmers the end of NLP and what it can accomplish is still no where in sight, because while its initial goal was to take raw language input and transform it through different means to better enrich and deliver higher quality data, there is so much more that can be done. With chat bots we could develop an AI that could answer simple medical concepts to potentially deliver decent treatments of casual injury. We could have a chatbot that in its design allows people suffering anxiety, depression and other mental illness an opportunity to receive a rapid, real time and seemingly human response with the tap of a few buttons.

**The Changes and Risks NLP poses:**

Change and risk are always a concern, especially when it comes to technology, jobs can become automated, human error can damage a system or users can abuse the services provided through NLP. The most likely change were going to see is a change in how we use technology and how it responds to us in general, this could be Augmented Reality where we can work from home in a semi digital space, or simply better home AI for cleaning, watering gardens and taking voice commands with better precision. The most likely impact on the world much like its development is also widely unknown, the only real jobs ready to be made redundant by Natural Language Processing is the job of Data Scientists, who have the role of understanding NLP and all the functions that come with it. There are threats to NLP, people who feed the AI with bad data, a good example is in 2016 Tay, Microsoft’s artificial intelligence was released and twitter users bombarded it with so much bad information that almost anything Tay said would become racist granted a lot of these things were from a user function to repeat what someone says though the data assimilated through that still allowed Tay to create and tweet some very strange and dangerous tweets. As with any technological advancement there comes risk with downsizing in business’, corrupt users and even programmers creating bad technological habits, but these risks aren’t worth halting Natural Language Processing from moving forward.

**How will NLP affect me?:**

I think something that may help me and the world at large with NLP and chatbot technology is a better and easier line of communication between government and citizens via many forms automation in call centres as right now the inability to communicate in a fast and on demand fashion is next to impossible. I can also see a positive change for my partner who has diabetes with advancements in machine learning, managing it could become more automated and precise process with less risks of failure because as it stands right now diabetes management is only possible for rare few people with money or government subsidised orders., There is a chance that many people in my family who suffer from mental illness’ and physical disabilities to be able to communicate with a chatbot or other service in a clear and precise manner to get directed to the best possible help they can get. Ultimately I feel that almost any change in how we communicate and how machines function will be a great thing to be a part of, be it helping in NLP development or simply benefiting from the many tools it provides us.