FIT1055 Assignment 1

Name: Soh En Ming

Student ID: 32024975

Topic: **The potential for AI techniques to be used for negative or positive social**

**Purposes**

In our everyday lives, technology revolves around all of us. From the complex programs needed to run the transportation in our country, to the image recognition needed to access our own phones. These different technologies are run by different AI techniques which is defined as procedures that make computers show human like intelligent (Vanherle, 2021). Since AI techniques is still being developed and implemented into many systems of our daily life, there are still many potentials that AI techniques could be used for good social purposes which can benefit society, however there is no perfect thing in this world. Therefore, AI techniques could be indirectly causing negative social purposes when trying to achieve a goal. The top 4 AI techniques used commonly today as stated by Pedamkar (2021) are Machine Learning, Natural Language Processing (NLP), Automation and Robotics and lastly Machine Vision. In this report, I will be discussing and about the different potentials of AI techniques and how they could benefit the society as a good social purpose while also discussing the negative social purposes that could come from when achieving a good social purpose.

Among the 4 AI techniques I will be focusing on Automation and Robotics for the first argument. The first argument that I will be discussing is the introduction of Automation in a factory. Automation in a factory can be advantageous and beneficial but only for a certain perspective of people. For example, having automation in a factory can increase productivity, less employee costs, higher volume production, increased safety for factory workers and reduction in production time (Blue, 2013). Those advantages can be seen as a good potential since they help reduce the risks for workers and increases production rates too. However, in the process of automating the factory and gaining the benefits, there will be an increase in unemployment due to Automation replacing workers. The workers that have been replaced by automation will often face worker displacement where workers who have been replaced by automation will likely face emotional stress from the loss of their jobs and stress from looking for another job (Advantages and disadvantages of automation, n.d.).

If we look at this in a perspective view, we can see that there will be some winners and losers. If we look from the perspective of the owner of the factory and the software developer who designed the machines, they will gain the most benefit from automation since they get more volume production and more productivity which in a long run will surpass the initial cost of automation. Now if we look in the perspective of the worker, we can see that due to automation in the factory, the worker will most likely be unemployed and will face worker displacement because of that. So, although automation in a factory can create a positive social purpose for the people who get the most additional benefits from automation, there is also negative social purpose from the perspective view of the workers who have been replaced by automation.

This discussion will be on the AI technique Machine Learning will be discussing about machine learning in healthcare. Machine learning in healthcare can be very beneficial for patients and doctors. For example, here are some strengths to machine learning in healthcare. Machine learning algorithms can forecast a sudden outbreak. Using the vast amounts of data collected by the Machine Learning it can predict what might happen in the future (Oza, 2021). Personalized Medication. One major positive point of using machine learning in healthcare is the ability to tailor medicine through predictive analytics (Oza, 2021). However, just as there are strengths there are weaknesses too. Here are some weaknesses to machine learning in healthcare. The data given to be processed by machine learning contains fallible data from humans. How machine learning works is through processing vast amounts of data and analysing the data. However, the data was given from doctors who have different judgments according to which patients they are facing which could cause the machine learning algorithm to act the same towards patients like the doctor (Nadis, 2022). Machine learning follows by the rules. This is considered as a negative point as humans don’t always follow the rules when treating a patient (Nadis, 2022). For example, as stated by Nadis (2022) machine learning algorithms are very good at mastering games which have certain “win conditions” in this case it would be “healthy” but it is not always the correct way.

If we look at this in the perspective view. In the doctor perspective, similar to how workers fear that robots may replace their jobs, doctors also face the same worry therefore, they may not be very happy with the introduction of machine learning (Srikanth, 2020). In the patient perspective, there will be nothing that can replace a human interaction between patient and doctor. Therefore, there will always be a need for doctors.

Topic: **The potential for AI techniques to be used for negative or positive social**

**Purposes**

Among the 4 top AI techniques, I will be focusing on Automation and Robotics as the AI technique chosen and will be focusing on the topic of introduction of Automation in a factory. This discussion will be split into two parts. Firstly, it will discuss what are the benefits that comes along with automation in a factory and how that helps provide a positive social purpose and then a second part where it will discuss on the drawbacks of automation in a factory and how it can create negative social purpose

Automation in a factory can bring many benefits. Here are a few of the benefits that come along with automation of a factory.

Increased workplace safety. In a factory before automation, there used to be lots of dangerous tasks that workers would often need to perform however, with the introduction of automation, workers no longer have to worry about performing dangerous tasks since they have been replaced by automation and ultimately since there is lesser dangerous tasks for workers the workplace in the factory has become more safer (Ye, 2021).

Increased productivity within the factory. With the introduction of automation, unlike human’s robots don’t need to rest for as long as humans and can work for prolonged periods of time with less impact towards the maintenance which will lead to increase production and productivity within the factory (Ye, 2021).

Increased level of focus leading to better efficiency. Introducing automation into a workplace means leaving the difficult, repetitive, and demanding physical work to robots. This would allow employees to focus on trying to improve the efficiency and extending the product possibilities (Ye, 2021).

Automation can bring many benefits towards a workplace however when you try to solve one problem, there will also be drawbacks that can happen from the implementation of automation. Below are some drawbacks from automation in a factory.

Loss of jobs. With the introduction of automation, physically demanding and dangerous jobs will be replaced by machinery can lead to lots of redundant jobs and cause the worker to lose their jobs (Granta, 2017). During this period the worker may also face worker displacement which comes from the period of emotional stress from being replaced by machines (Advantages and disadvantages of automation, n.d.).

High capital expenditure. Buying machinery to automate a factory will not be cheap. Despite the return of investment (ROI) normally being effective and positive from automation, when purchasing machinery, it can costs a lot of money and normally it will take a higher level of maintenance than a machine manually operated by human and could potentially be less flexible in comparison to humans which are very versatile. These reasons could possibly make the investment not as valuable and the capital could be spent somewhere else with a better ROI (Advantages and disadvantages of automation, n.d.).

Possibility for automation to become redundant. When a machine is bespoken just for a certain process in the manufacturing if for example, the factory decides to change production into another line-up, the chances that the bespoke machine can be used elsewhere will be unlikely (Granta, 2017). This will cause the machines to be redundant.

// Now it’s time to just sum up the point

References

Ye, R. (2021). The Benefits Of Factory And Manufacturing Automation For Today’s Industry.

Retrieved from https://www.manufacturingtomorrow.com/story/2021/03/the-benefits-of-factory-and-manufacturing-automation-for-todays-industry/16713/

Paysse, M. (2021). Five Ways Automation Can Help Businesses And Society. Retrieved from

https://www.forbes.com/sites/forbesbusinessdevelopmentcouncil/2021/10/11/five-ways-automation-can-help-businesses-and-society/?sh=180b8d293bbe

Advantages and disadvantages of automation. (n.d.). Retrieved from

https://www.britannica.com/technology/automation/Advantages-and-disadvantages-of-automation

Granta. (2017). Advantages and Disadvantages of Automation. Retrieved from

https://www.granta-automation.co.uk/news/advantages-and-disadvantages-of-automation/