**Self-Reflection Report**

Artificial Intelligence(AI) is one of the greatest technologies invented by humans. AI can make computers and machines to copy the decision-making capabilities and problem solving of the human brain. Artificial Intelligence is an exciting emerging technology for which there is a lot of hype going around. Unfortunately, there are some misconceptions built around it like AI can destroy entire mankind when it went out of control. Movies are also one of the reasons for this situation. After learning the Artificial Intelligence Ethics and Applications module, we can get basic understanding of this technology and its applications.

People often confuse between Artificial Intelligence(AI), Machine learning(ML), Data Science(DS) and Deep Learning(DL). Through this module, one can develop a fair understanding and difference between these areas. Machine Learning is subset of Artificial Intelligence whereas Data Science helps to get insights from data that deals with real world complexities. Deep Learning(DL) is subset of Machine Learning(ML) which uses artificial neural networks to extract high level features from the raw input. Apart from this, I learnt applications of Artificial Intelligence(AI) and Data Science(DS) across different domains like healthcare, marketing, security, banking, defence and entertainment.

Data plays an important role in application of Artificial Intelligence(AI) and Data Science(DS). It can be in any form. We need to possess domain knowledge in order to understand the data and perform data wrangling. Data Analysis is also a crucial part in Artificial Intelligence(AI) and Data Science(DS). Without proper Data Analysis, we cannot build an efficient model which can satisfy the business requirement or goal. While building a Data Science(DS) model, most of the time is spent on the Data Analysis part. Data Visualization is used to get insights about data in visual form. Currently, Power BI and Tableau are the best visualization tools in the market and widely used.

Main applications of Artificial Intelligence(AI) and Data Science(DS) are Predictive Analytics, Recommender systems, Natural Language Processing(NLP) and Computer Vision. In Predictive analytics, the model uses the statistics and modelling techniques to predict the future outcome by analysing current and past data. Recommender systems are systems that recommend content to the users depending on the various factors. Natural Language Processing(NLP) enables the machines and computers to understand the human language like written text and speech. Computer vision enables machines and computers to gather useful information from images and videos. All the Artificial Intelligence(AI) and Data Science(DS) models needs to be hosted in a cloud environment and gets deployed into production environment. Some of the popular cloud services includes Amazon Web Services(AWS), Microsoft Azure and Google Cloud Platform(GCP). Deployed models are continuously monitored to track their performance and optimised as per the outcome.

As part of research, I had chosen Predictive Analytics in Digital Marketing as my area of interest. It is one of the exciting models in which predictions are given after analysing the past data. Predictive model can give the biased predictions if there is any biased data in chosen data set. Therefore, the Data wrangling needs to be done very carefully and statistics are used to measure the performance of the model. Earlier, the ethical challenges are ignored as part of research and only focuses on applications of AI. After discussing within the team, I understood the importance of ethical challenges in the research.

To conclude, Artificial Intelligence(AI) is going to transform the world in such a way that it can become part of our daily life. Although there are certain ethical challenges associated with it, there are many benefits with AI. It needs to be developed with caution as it has no human feelings to understand certain human behaviour.