A summary and reflection of my development during the Machine Learning module of my MSc.

Introduction

As an individual who works within the industry of banking and finance, I thought that my encounters with machine learning in a practical environment was fairly limited. During unit 1 I discovered that I am a recipient of machine learning tools and products on a daily basis; with tools such as facial recognition on my mobile phone being one of these products. Understanding that machine learning can be as simple as technology attempting to emulate practice to learn from experience and failures (Kubat, 2021), made the initial concept a lot easier to understand and digest. Within this essay I will describe and evaluate how I have progressed through this module and in turn highlight key areas where I have learned as well as the challenges I have faced.

Initial Steps

One of the first activities of this module was to discuss the impact of industry 4.0 had affected a sector that I'm involved in, as mentioned prior I work in the finance sector. Being able to apply the theoretical side of industry 4.0 and information systems to real life examples allowed me to gain insight on the legal, social, ethical and professional issues that could be encountered when implementing information systems and machine learning in particular industries. My discussion post touched on the social and legal impact that TSB had after their information system had failed resulting in a loss of 80,000 customers and total fines of £48.6m for operational risk management and governance failures and a further £32.7m to customers who had suffered detriment (Sumana, 2024).

AirBnB Business Analysis and Individual Presentation

Myself and other participants within the module were placed into groups in order to apply our acquired skills within the module to an AirBnb business report. Compared to other members in my group I was less experienced and proficient with Python coding methods such as, exploratory data analysis (EDA) and unsupervised machine learning techniques such as K-means clustering. When collaborating with my group from this task I contributed by initially reaching out to other members of the group in order to have us become more acquainted with one another, although the group would not be working with one another in the long term I liked to apply the theory of colleagues/peers developing a familiar relationship, which increases trust and boosts overall productivity (Guohao, Pervaiz and Qi, 2021). By tackling the deadline with this sort of approach, we as a group were able to overcome any challenges with minimal conflict. As mentioned earlier I was less experienced with techniques such as EDA and K-means clustering in comparison to other members in my group, in order to develop these areas and become more of a specialist I made this known to my team members and suggested covering those areas more for the assignment, where they could then review the work I had completed within those areas and suggest areas of improvement. By the end of the assignment, we received commendable feedback for these areas covered. Receiving this sort of feedback provided a more confident approach for the individual project presentation. Although the task for the presentation was in a completely different realm to that of the business analysis, where I now had to create a machine learning model that could partake in supervised learning. Feedback from the previous task where improvements were needed could now be applied to the presentation assignment. One area of improvement that was detailed was to refine the methodology and visualisation of the approach taken for the project (Coulter-Smith, 2024). This was applied to the individual assignment by systematically going through the individual aspects that came together to build the architecture of a functioning machine learning model. With one example being why the ReLU (Rectified Linear Unit) activation function was chosen and how it was integrated into the code for the machine learning model. Examples like this outline the

development I made during this module, from merely knowing about the types of learning for a machine learning model to now understanding the uses and advantages of certain intricacies within a machine learning model such as the activation function.

Machine Learning Discussions

A key factor to this module that I believe aided myself and my peers was the fact that we were all encouraged to discuss current topics within artificial intelligence and machine learning, not only were we encouraged to discuss during collaborative discussion threads but we were also provided with reinforcement to discuss machine learning topics during seminars, which we could then relate to the assignments or formative assessments we were assigned. Ying (2020) supports the idea of discussion aiding learning and understanding, by stating that new ideas can be integrated from disparate perspectives and disciplines and by also stating that students can work as a team to solve problems in real time. A funny thing about this journal is that Ying (2020) argues that the discussion method is significant at producing learning outcomes, because we are in a time where we are only beginning to witness AI's disruption of work and the economy. Thus, making discussion outcomes crucial to personal and professional success. These are the types of topics that were discussed; including the threats and limitations that AI could have on certain industries or if AI could prove to be a security risk. The resulting enablement resulted in me seeking out more data science and machine learning material on platforms such as podcasts.

Conclusion

The machine learning module as part of the data science MSc has been a valuable experience that has contributed highly to my academic development with skills that can be transferred to a professional area. This module has been a good step to take for me especially as I wish to burrow deeper into the industry from a professional standpoint. Machine learning is a field that is evolving at a rapid pace with

there always being something new to learn about, this module has taught me the habit staying up to date with the latest news of advancements to do with machine learning, which I believe is crucial for success in this field.

Reference List:

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