ITC-C508

Exercise 1: Machine Learning and Deep Learning in Business Domains

Instructions: Study the two required readings very thoroughly (**Role of Machine Learning and their Effect on Business Management in the World Today** and **Deep Learning Applications in Business Activities**). From the different business applications presented and discussed, choose a specific application area and identify a specific problem in that area, then, conduct some research to provide detailed answers to the following questions and perform the required task:

1. How can machine learning/deep learning help companies to address this specific problem? Give other examples (not in the papers) of previous cases that have already succeeded in this task.

   improved supply networks to forecast and reduce supply chain risks, machine learning allows contextual analysis of logistics data. A fire at a far-off facility that manufactures crucial ball bearings for a vehicle transmission, for instance, may be discovered by algorithms sifting through public social data and news feeds in many languages.

2. In your examples, what sort of data did the company use to apply ML/DL to address this problem?

   To start, incorporating machine learning into supply chain management may aid in automating a lot of tedious processes and free up businesses to concentrate on more strategic and significant commercial endeavors.

   Supply chain managers can locate the best suppliers and optimize inventories using clever machine learning tools to keep their company operating smoothly. As a result of machine learning's many benefits and the opportunity to fully use the enormous volumes of data gathered by warehousing, transportation systems, and industrial logistics, a growing number of enterprises are now exhibiting interest in its applications.

   Additionally, it may assist businesses in building a complete supply chain model that is driven by machine intelligence in order to reduce risks, increase insights, and improve performance—all of which are essential for developing a supply chain model that is internationally competitive.

   According to a new Gartner report, cutting-edge technologies like artificial intelligence (AI) and machine learning (ML) will dramatically alter current supply chain operating patterns in the future. ML approaches are one of the high-benefit technologies since they allow effective procedures that save costs and enhance revenues.

3. Are the data needed for ML/DL readily available? If not, where can you get the data needed for the ML/DL analysis should you be the one to implement it now?

   the use of application machine learning

   An example from the finance industry will help to better illustrate how machine learning works. To make successful investment selections, traditional securities market participants including financial researchers, analysts, asset managers, and ordinary investors comb through a lot of data from various firms throughout the globe. However, certain important information may not be widely reported by the media and might only be known to a small number of people who have the benefit of working for the firm or living in the nation from whence the information originates. Additionally, people are limited in how much information they can gather and digest in a given amount of time. Machine learning can help with this.

   In its investment analysis and research division, an asset management business may use machine learning. Suppose the asset manager solely purchases mining-related equities. The data set is made up of the information obtained by the model incorporated into the system, which crawls the web and gathers all different kinds of news events from companies, industries, cities, and nations. The information in the data collection would not have been accessible to the firm's asset managers and researchers using their human faculties and intellects. Only information on mining businesses, regulatory laws affecting the exploration industry, and political developments in specific nations is extracted from the data set using the parameters created with the model.

4. What problems/complications can possibly arise in trying to collect and gather these data?

   Recognizing the Processes That Need Automation

   Nowadays, it's becoming harder and harder to tell reality from fiction in machine learning. You must assess the issues you want to resolve before choosing which AI platform to use. The tasks that are carried out manually every day and have a fixed output are the simplest to automate. Prior to automation, complicated procedures need more examination. While machine learning may undoubtedly aid in the automation of certain processes, not all automation issues need it.

5. Which between ML and DL would be more suitable for processing this data? Explain your answer.

   I should choose ML would be more suitable for processing this data because Computers may learn from data by using a process known as machine learning. It covers the intersection of statistics and computer science, where algorithms are used to carry out a given job without being explicitly coded; instead, they identify patterns in the data and generate predictions as soon as fresh data is received.

   Generally speaking, depending on the data being used to feed the algorithms, the learning process for these algorithms may be either supervised or unsupervised.

Prepare a brief report outlining your answers to these questions and upload it in the respective folder using the filename *Exer1_(your lastname).docx* and be ready to conduct peer review.

Note: Citing previous examples will require valid references and these references will need to be included in the bibliography of your report.

References

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