ANALYTICS IN PRACTICE

ASSIGNMENT – 2

Case 2: Fraud Detection in Banking.

Answer:-

It shows that the operationalization phase of this project, which involved implementing the model in a real-world setting, was not planned and executed by the bank and analytics solution provider. While testing, the method seemed to function just fine, but in a real-world setting, it ran slowly.

The project team might not have considered all the infrastructure and resources necessary for properly implementing the strategy, such as the demand for processing power and response times. Additionally, they may not have tested the computation sufficiently in a climate representative of the production to ensure that it would function reliably in legitimate circumstances before delivering it.

The project team should review the operationalization process and do additional testing in a setting resembling a production environment to address any performance issues before making the algorithm available to users. To make it simpler to operationalize the algorithm and guarantee that it fulfils the critical reaction time standards, they might also think about making an investment in more resilient infrastructure. In order to increase the algorithm's effectiveness and decrease its computational requirements, the team might also need to start over and repeat the model planning/building phase.

Case 3: Amazon Rekognition.

Answer:-

The analytics project's model planning and development phase as well as the data collection and preparation phase are to blame for Amazon rekognition's subpar performance with dark-skinned females. Because they were taught data that predominantly preferred white males, recognition's pre-trained algorithms were biased in their ability to recognise people with darker skin tones.

It demonstrates that during the data collection and preparation stage, the project team did not secure a diverse and representative dataset, which is crucial for developing unbiased models. This error may have been made worse by the fact that the pre-trained algorithms were created with the goal of profit rather than a dedication to a moral and unbiased ai.

During the development and construction of the model, the project team might not have taken into account the biases in the data and included strategies to mitigate them, such as oversampling underrepresented groups or using data augmentation techniques.

To solve these issues, amazon and other businesses creating ai technology must pay close attention to diversity and representation in their datasets for use cases requiring facial recognition and other delicate applications. They should also spend on developing more robust

and thorough data processing and model-building techniques in order to detect and delete inaccurate information, guaranteeing that the resulting algorithms are as objective and accurate as feasible. Finally, when choosing the uses for their ai technology, businesses should apply transparent and moral decision-making processes, especially when it comes to law enforcement and other potentially harmful uses.

Case 4:IBM Watson in Healthcare.

Answer:-

It appears that a number of events that took place during various stages of the analytics project are to blame for IBM Watson's failure in the healthcare industry.

Initially, IBM Watson was positioned as a system that could manage the complexity of medical services without the need for proper testing and approval during the undertaking reveal and definition stage. The project was rushed, disregarding the time and resources required to make a solid arrangement, and the item was actively encouraged, presuming ludicrous things.

Second, during the data preparation and collection phase, the system was trained on biassed data from IBM's development partner, mskcc, which only represented a constrained range of cancer treatment options. The bias introduced by the monotonicity of the training data prevented the system from handling complex circumstances or smaller healthcare facilities.

In the end least, personalised medicine was not taken into account when the model was being developed, the system was unable to assess the specifics of each patient's condition in order To provide personalised treatment recommendations because customised medicine was not y et available.

To get around these issues, IBM Watson might benefit from taking a more scientific and rigorous approach to analytics programmes. This approach should include testing and verification of the system before commercialization, the addition of diverse and representative data during training, and the use of customised medicine in order to increase the precision of treatment recommendations. To ensure Watson can function successfully in real-world scenarios and provide useful data to doctors, IBM should also work closely with healthcare facilities.

Case 5:AI for University Admission

Answer:-

The todai robot's inability to pass the University of Tokyo entrance exam appears to be the result of a number of events that happened across different stages of the analytics project.

first, during the project discovery and definition phase, the complexity of the work and the challenge of creating an ai system that can understand the queries and offer accurate answers may have been overestimated by the researchers. Passing an entrance exam for a prominent university like the University of Tokyo requires understanding the intricacies of the language, culture, and environment, which may be challenging for an ai system to comprehend.

Second, it's likely that the researchers did not collect and prepare a sufficient quantity of relevant information to train the ai system. It's possible that the lack of further data limited the system's ability to understand the queries and generate pertinent answers.

Finally, throughout the model planning and development phase, the researchers might not have succeeded in developing an ai system that is capable of comprehending the meaning across a wide range. It's possible that the system's incapacity to comprehend the bigger context limited its ability to provide exact answers to the queries.

The researchers could profit from using a more thorough approach to analytics initiatives to overcome these problems. This strategy should include recognizing the task's complexity, acquiring a variety of representative training data, and creating ai systems that can comprehend the subtleties of the task's language, culture, and context. To increase the precision of the system's replies, the researchers may also take into account adding natural language processing and machine learning approaches.

Case 6:Mars Orbiter

Answer:-

Numerous elements, including poor process controls, poor team communication, and a lack of finance, contributed to the collapse of the mars orbiter project. Inadequate communication and process controls can result in serious issues, as demonstrated by lockheed martin and nasa's error of utilising incompatible units of measurement.

The project's conceptualization and planning phase might be linked to the issue from an analytics standpoint. To guarantee that data was precise and consistent across teams, a clearly defined methodology had to be in place. The project team should have agreed on a standard unit of measurement and set clear guidelines for measuring the data. This would have avoided confusion and mistakes by ensuring everyone was using the same method of measurement.

Furthermore, the phase of data preparation may have been enhanced. Before using the data in the project, the project team would have had to examine and validate its correctness and consistency as part of a thorough data preparation procedure. The team would have been able to identify any flaws or discrepancies in the data, such as the use of different measuring units before they caused issues with the project.
Project managers should develop precise norms and standards for data measurement and make sure that everyone involved in the project abides by them in order to prevent similar issues in the future. Before using the data in any project, they should carry out thorough data validation and verification. In order to say that enough resources are available to fulfil the project's objectives, suitable funding should also be supplied to the project.¯

Reference:

BBC:-https://www.cbsnews.com/news/facial-recognition-systems-racism-protests-police-bias/

Healthcare:- https://www.healthcare-informatics.com/article/analytics/ibm-watson-inside-story-how-jeopardy-winning-supercomputer-was-born-and-what-it

Nextshark:-https://nextshark.com/japanese-ai-robot-takes-university-entrance-exam-exposes-alarming-flaw-human-education

NASA:-https://solarsystem.nasa.gov/missions/mars-climate-orbiter/in-depth/