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Big Data Analytics

Practical 1

Aim

Study and explore various applications of big data in different domains. Choose one of it and study in detail, also write down the report on different types of digital data generated in selected applications.

Various application domains of Big Data

- Big data in education
- Big data in E-Commerce
- Big data in media and entertainment
- Big data in Telecom
- Big data in logistic
- Big data in retail
- Big data in healthcare
- Big data in finance

Big data in Education

Big Data can be utilised in education to analyse a student's performance based on exam results and assignments. These findings can be used to create tailored education programmes and goals.

More information can be evaluated by receiving data from a variety of various channels. This additional knowledge can help to improve teaching approaches that are focused on certain actions and patterns. Furthermore, by categorising individuals based on their learning patterns and problems, additional resources and adjustments can be allocated.

In addition, Big Data grants enable the creation of tailored groups of learners based on various needs and requirements. These student clusters can be decided by the intricacy of the course itself, or they can be bigger in scope and determined by a number of different courses packed together.

Enhancing Student's Results

The grades achieved in exams, projects, and assignments are the most popular techniques of analysing a student's performance. However, all of these grades can be added together to provide a unique data trail left by the student throughout their lives.

Analyzing these data trails can assist educators in better understanding student behaviour and performance. It is feasible to track their actions using Big Data, such as:

- Exam question response time
- Sources they use to educate oneself
- Questions they avoid
- Questions they have effectively answered

Students' only performance measurement indices at the moment are their test and assignment answers. However, each student leaves an exceptional data trail during their lives. Big data allows for real-time analysis of this data trail. As a result, it will provide a better knowledge of the student's behaviours and aid in the creation of an optimal learning environment.

Using big data in education allows anyone to monitor student behaviours such as the time it takes to answer a question, the sources they use for exam preparation, which questions they skip, and so on. All of these and comparable questions can be automatically answered, providing students with immediate feedback.

A better Grading System

Big Data assists instructors in tracking student success. The study aids in understanding both individual and collective performance. Individual grade statistics analysis will assist educators in understanding pupils' areas of interest. The grading system can be improved to highlight the important areas in which the student excels.

This method would also enable professors to provide vital feedback to students and help them choose the best career route. For example, Ashford School in the United Kingdom, has

used big data tools like Socrative, Nearpod, and Classroom Monitor to analyse their students. These programmes allow them to monitor pupils' performance and behaviour in real time.

Attention gaining

Getting a student's attention is one of the most exciting and helpful Big Data uses in education. No matter how entertaining the lesson is, there will always be some pupils who are distracted by their phones or others. A lecture, on the other hand, can only be effective if everyone pays attention.

Big Data experts intend to exploit students' biometric data, such as pulse rate, facial expressions, and objects touched during the lesson. This data can be collected using a camera mounted on the ceiling or a gadget resembling a smartwatch. This information can be utilised to determine how attentive each pupil is.

After returning the data to the teacher, he or she can take the appropriate steps to re-engage the kids.

Limitations of Big data in Education

Big data presents some horrifying difficulties in the time-consuming education sector. Greater obstacles result from a lack of support from teachers and mentors. Big Data analytics clearly offers a lot of opportunities, but it may be challenging for institutions to adjust and succeed in the face of obstacles. Providing flexible data flow is the next hurdle for big data applications in education. Data systems are hampered in many institutions by bad networks and a lack of Internet connectivity. Using them for educational purposes could be a real disadvantage for kids if they produce inaccurate data and counterproductive consequences.

Conclusion

I gain insights about how big data analytics in this modern world help in various fields from this practical. Moreover, I explored several applications of big data analytics in the field of Education sector and its major role as well as limitations.