Tecnológico Nacional de México

Instituto Tecnológico de Tijuana

SUBDIRECCIÓN ACADÉMICA

Departamento de Sistemas y Computación

SEMESTRE

Agosto - diciembre 2020

CARRERA

Ing. Tecnologías de la Información y Comunicación

MATERIA Y CLAVE:

Minería de Datos   BDD-1703TI9A

NOMBRE Y MATRICULA DEL ALUMNO:

Velázquez Farrera César Alejandro   17212937

NOMBRE DEL TRABAJO:

Práctica 1

UNIDAD POR EVALUAR

Unidad I

NOMBRE DEL MAESTRO (A):

Mc José Christian Romero Hernández

Fecha de entrega: Marzo 16, 2021

What is Data Mining?

Data mining is the process of finding anomalies, patterns, and correlations within large data sets to predict outcomes. Using a wide range of techniques, information can be used to increase revenue, reduce costs, improve customer relationships, and more.

Data mining allows to:

- Sift through all the chaotic and repetitive noise in our data.
- Understand what is relevant and then make good use of that information to assess likely outcomes.
- Accelerate the pace of making informed decisions.

Data mining involves exploring and analyzing large blocks of information to glen meaningful patterns and trends. It can be used in a variety of ways, such as database marketing, credit risk management, fraud detection, spam e-mail filtering, or even to discern the sentiment or opinion of users.

The data mining process breaks down into five steps:

1. Organizations collect data and load it into their data warehouses.
2. Organizations store and manage the data, either on in-house servers or the cloud.
3. Business analyst, management teams and information technology professionals access the data and determine how they want to organize it.
4. Then, application software sorts the data based on the user's results, and finally, the end-user presents the data in an easy-to-share format, such as a graph or table.

Where is data mining being used?

Telecom, Media & Technology

In an overloaded market where competition is tight, the answers are often within your consumer data. Telecom, media and technology companies can use analytic models to make sense of mountains of customers data, helping them predict customer behavior and offer highly targeted and relevant campaigns.

Education

With unified, data-driven views of student progress, educators can predict student performance before they set foot in the classroom – and develop intervention strategies to keep them on course. Data mining helps educators access student data, predict achievement levels and pinpoint students or groups of students in need of extra attention.

Fecha de entrega: Marzo 16, 2021

Manufacturing

Aligning supply plans with demand forecasts is essential, as is early detection of problems, quality assurance and investment in brand equity. Manufacturers can predict wear of production assets and anticipate maintenance, which can maximize uptime and keep the production line on schedule.

Insurance

With analytic know-how, insurance companies can solve complex problems concerning fraud, compliance, risk management and customer attrition. Companies have used data mining techniques to price products more effectively across business lines and find new ways to offer competitive products to their existing customer base.

Applications of data mining

1. **Financial Analysis**: The banking and finance industry relies on high-quality, reliable data. In loan markets, financial and user data can be used for a variety of purposes, like predicting loan payments and determining credit ratings. And data mining methods make such tasks more manageable. Data analysis and mining can also help detect money laundering and other financial crimes.
2. **Telecommunication Industry**: Pattern analysis of spatiotemporal databases can play a huge role in mobile telecommunication, mobile computing, and also web and information services. And techniques like outlier analysis can detect fraudulent user.
3. **Intrusion Detection**: Global connectivity in today's technology-driven economy has presented security challenges for network administration. Network resources can face threats and actions that intrude on their confidentiality or integrity. Therefore, detection of intrusion has emerged as a crucial data mining practice. It encompasses association and correlation analysis, aggregation techniques, visualization, and query tools, which can effectively detect any anomalies or deviations from normal behavior.

Fecha de entrega: Marzo 16, 2021

Bibliography

[1] Rohit Sharma, "upGrad Blog," upGrad Blog, 08 January 2021. [Online]. Available: https://www.upgrad.com/blog/12-most-useful-data-mining-applications-of-2020/#1_Financial_Analysis. [Accessed 16 March 2021].

[2] M. G., "ResearchGate," ResearchGate, [Online]. Available: https://www.researchgate.net/post/14-areas-where-data-mining-is-widely-used. [Accessed 16 March 2021].

[3] SAS, "SAS," [Online]. Available: https://www.sas.com/en_us/insights/analytics/data-mining.html. [Accessed 16 March 2021].

Fecha de entrega: Marzo 16, 2021