

USAGE OF DATA MINING IN REAL WORLD SITUATIONS AND ITS IMPORTANCE

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Abstract

The growing importance and various applications of data mining in real-time scenarios. It highlights the use of data mining and machine learning in diverse fields like finance, retail, telecommunications, and healthcare for tasks such as trend analysis, anomaly detection, and personalized experiences. The abstract emphasizes the need for real-time data mining due to the increasing volume of data and the requirement for immediate insights to inform decisions and improve various processes.

Key words: Data mining, clustering, Real-Time, decision-making, detection

Introduction

Data mining is the process of extracting useful knowledge and insights from large datasets using various statistical and computational techniques. In the real world, it's about turning raw data into actionable information that can improve decision-making, predict trends, and uncover new opportunities. This involves discovering hidden patterns, correlations, and anomalies within data, which can be used for various applications across industries.

Applications of Data mining

Data mining and machine learning are applied in diverse fields, including:

- **Finance:** Detecting fraudulent transactions, predicting market trends, and managing risk.
- **Retail:** Analysing customer behaviour, optimizing marketing campaigns, and improving supply chain management.

- **Telecommunications:** Identifying network intrusions, analysing customer churn, and optimizing network performance.
- **Healthcare:** Diagnosing diseases, predicting patient outcomes, and personalizing treatment plans.
- **Other Scientific Uses:** Analysing biological data, detecting anomalies in scientific instruments, and developing new drugs.

Real-Time Data Mining Techniques

The abstract mentions various data mining techniques used in real-time applications, such as:

- **Clustering:** Grouping similar data points to identify trends and anomalies.
- **Association Rule Mining:** Discovering relationships between data items to improve market segmentation and targeted marketing.
- **Anomaly Detection:** Identifying unusual patterns or deviations from expected behaviour.
- **Link Analysis:** Examining connections between data elements to identify relationships and patterns.

Benefits of Real-Time Data Mining

The abstract highlights the benefits of using real-time data mining, including:

- **Improved decision-making:** Real-time insights enable faster and more informed decisions.
- **Enhanced efficiency:** Optimizing processes and reducing costs through data-driven insights.
- **Increased customer satisfaction:** Personalizing customer experiences and improving customer service.
- **Reduced risk:** Identifying and mitigating potential threats and risks early.

Challenges and Future Directions

The abstract acknowledges the challenges associated with real-time data mining, such as:

- **Data volume and velocity:** Handling large and rapidly increasing data streams.
- **Scalability and performance:** Ensuring efficient processing of data in real-time.
- **Security and privacy:** Protecting sensitive data and ensuring data integrity.
- **Future directions:** The abstract suggests that future research should focus on developing more efficient and scalable real-time data mining algorithms and frameworks.

Conclusion

The crucial role of real-time data mining in today's data-driven world, highlighting its various applications, benefits, and challenges. It also points towards the need for further research and development to address the challenges and unlock the full potential of real-time data mining in various domains.

References

- https://www.google.com/search?q=introduction+on+data+mining+in+real+time+world&oq=introduction+on+data+mining+in+real&gs_lcrp=EgZjaHJvbWUqBwgBECEYoAEyBggAEEUYOTIHCAEQIRigATIHCAIQIRigATIHCAMQIRifBTIHCAQQIRifBTIHCAUQIRifBTIHCA YQIRifBTIHCAcQIRifBTIHCAgQIRifBTIHCAkQIRiPATIBCjEyNjA2ajBqMTWoAgiwAgHxBQ9MUZhhdTy5&sourceid=chrome&ie=UTF-8
- https://www.google.com/search?q=abstract+on+data+mining+in+real+time+world&sc_esv=286dcc3e3e4e435f&sxsrf=AE3TifPCuuXzCW1TaBr9fkwtmj2fEkcVw%3A1748334806241&ei=1ng1aPzFDunP1e8PspbpwQc&ved=0ahUKEwj8iMzYnsONAXpZ_UHHTJLQngQ4dUDCB A&uact=5&oq=abstract+on+data+mining+in+real+time+world&gs_lp=Egxnd3Mtd2l6LXNlc nAiKmFic3RyYWN0IG9uIGRhGEgbWluaW5nIGluIHJlYWwgdGltZSB3b3JsZDIFECEYo AEyBRAhGKABMgUQIRigAUjQe1AAWIhkcAB4AZABAjgBqAGgAcMoqgEEMc40MrgB A8gBAPgBAZgCKqAChCzCagQOIxgnwgIKECMYgAQYJxiKBcICChAAGIAEGEMYigXC AgsQABiABBIRAhikBcICEBAAGIAEGLEDGEMYgwEYigXCAg0QABiABBixAxhDGloFw gIIEAAYgAQYsOPCagUQABiABMICChAAGIAEGBOYhwLCagYQABgWGB7CAgsQABi ABBiGAXiKBcICBRAAG08FwgIIEAAYgAQYogTCaggQABiiBBiJBcICBRAhGJ8FwgIHEC EYoAEYCsICBBAhGBWYAwCSBwQwLjQyoAfUkwKyBwQwLjQvuAeELMIHCTAuNS4x MS4yNsgHiQM&sclient=gws-wiz-serp

