

# **Data Mining is becoming Extremely Powerful, but Dangerous**

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## **Abstract**

Data Mining describes a technology that discovers non-trivial hidden patterns in a large collection of data. Although, this technology has a tremendous impact on our lives, the invaluable contribution of this invisible technology often goes unnoticed.

This paper addresses the various forms of data mining shedding light on its expanding role in enriching our life. Emerging forms of data mining are able to perform multidimensional mining on a wide variety of heterogeneous data sources, to provide solutions to many problems.

This paper highlights the advantages and disadvantages that arise from the ever-expanding scope of the data mining. Data Mining augments human intelligence by equipping us with the wealth of knowledge, empowering us to perform our daily task more effectively and efficiently. As the mining scope and capacity increases, users and organisations are now more willing (acceptable) to compromise privacy as a trade-off for gaining peace of mind and additional comforts. The huge data stores of the master miners allow them to gain deep insights about individual lifestyles, social and behavioural patterns and business and financial trends resulting in a disproportionate power distributions. Is it then possible to constrain the scope of mining while delivering the promise of better life?

## **Introduction**

As we become overwhelmed by the influx of data, Data Mining presents a refreshing window to deal with the onslaught. Data Mining thus holds the key to many unresolved mysteries and age-old problems, whereby the availability of data and the power to analyse presents new possibilities. This paper explores this important technology shedding insights on its tremendous powers and potentials.

According to [Han and Kamber, 2007] data mining is defined as the Extraction of interesting (non trivial, implicit, previously unknown and potentially useful) information or patterns from data in large databases. We take a broad understanding of data mining, where we also include other related machine based discoveries such as deductive query processing and visual data mining. Databases include both structured data (in relational databases), semi structured data (e.g. metadata in XML documents) as well as unstructured documents such as text documents and multimedia content. Visual Data Mining refers to the discovery of patterns in large data sets by using visualization techniques.

As an example, data mining has been widely employed for the learning of consumer behaviour based on historical data of purchases made at retail outlets. Demographic data as collected from loyalty cards is combined with behavioural patterns of buyers to enable