

Anekant Education Society's

**Tuljaram Chaturchand College
of
Arts , Science and Commerce**
(Autonomous)


Baramati


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MINING OF TIME SERIES DATA


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- Time series data is made up of sequences of values or events obtained over repeated measurements of time
 - Data can be obtained on per minute, per hour, or per day basis.
 - It is also called as a Sequence Data.


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- Time-series data is generated through
 - Stock Markets
 - Scientific Observations
 - Medical Observations
 - Natural Observations
 - Economic Forecasting
 - Sales Forecasting
 - Engineering Experiments

 - The aim and goal of Time-Series data mining is to Identify correlations, Similar / Regular patterns, trends and outliers from time series data.




MINING OF SYMBOLIC SEQUENCES DATA


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- Symbolic sequence data consist of long sequences of event or nominal data.
 - It is not observed at equal time intervals.
 - For this type of data *gaps* between recorded events do not matter.

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- Symbolic sequence data is generated through
 - Customer shopping sequences data
 - Natural social developments data
 - Web click streams data
 - Sequences of events in science developments
 - Sequences of events in Engineering developments
 - The main aim and goal of symbolic sequence data mining is to find the useful pattern, knowledge and correlation between the symbolic sequence data.




MINING OF BIOLOGICAL SEQUENCES DATA


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- Biological sequence data include DNA, protein sequences, Gene sequences, Genome sequences.
 - These sequences are very long.
 - They carry important, complicated, but hidden semantic meaning.
 - Here, gaps between sequences are usually important.

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- The aim and goal of Biological sequence data mining is to manage and analyze biological data.
 - It is also used to identify similar sequences with long conserved subsequences
 - It is also used to find common patterns among all considered sequences




MINING OF SPATIAL DATA

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- Spatial data is geospace-related data stored in geospatial data repositories.
 - Spatial data is available in vector , raster , imagery and geo-referenced multimedia format.
 - Now a days large geographic data warehouses have been constructed from multiple sources.
 - Spatial data cubes are created that contain spatial dimensions and measures.


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- Spatial data mining is implemented on spatial data warehouses, spatial databases, and other geospatial data repositories.
 - Spatial data mining discovers patterns and knowledge from spatial data.
 - It is also used for mining spatial associations and co-location patterns, spatial clustering, spatial classification, spatial modeling, and spatial trend and outlier analysis.




MINING OF VISUAL AND AUDIO DATA

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- Visual data mining discovers implicit and useful knowledge from large data sets using data and/or knowledge visualization techniques.
 - Visual data mining can be viewed as an integration of two disciplines :
 - Data visualization
 - Data mining
 - It is also closely related to computer graphics, multimedia systems, human–computer interaction, pattern recognition, and high-performance computing.

- **Visualization :**
It Use of computer graphics to create visual images which aid in the understanding of complex, often massive representations of data
- **Visual Data Mining :**
It is discovering implicit but useful knowledge from large data sets using visualization techniques

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- Audio data mining Uses audio signals to indicate the patterns of data or the features of data mining results.
 - An interesting alternative to visual mining
 - An inverse task of mining audio (such as music) databases which is to find patterns from audio data

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- Visual data mining may disclose interesting patterns using graphical displays, but requires users to concentrate on watching patterns
 - Instead, transform patterns into sound and music and listen to pitches, rhythms, tune, and melody in order to identify anything interesting or unusual



Thank You