

Multimedia Data Mining

- extracting **interesting information** from multimedia databases.

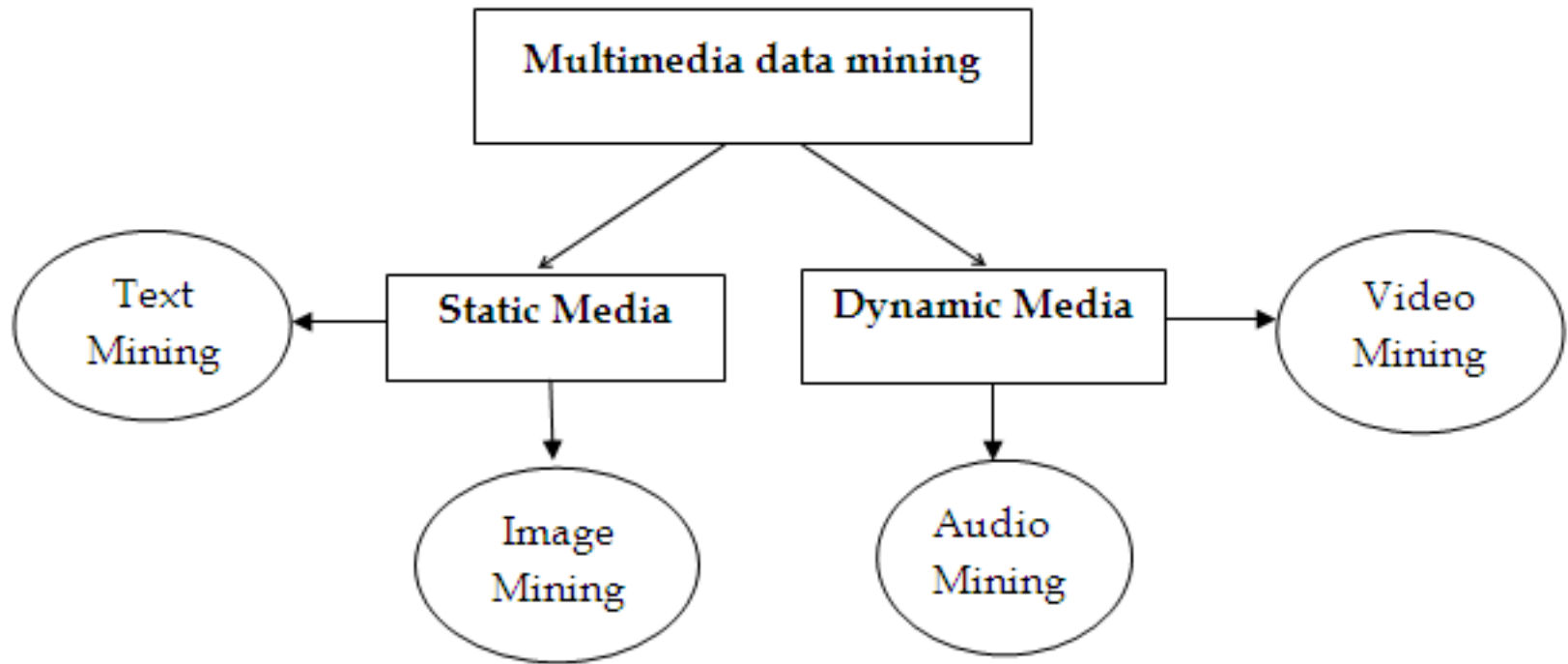
What is Multimedia Mining?

- Multimedia data mining discovers interesting patterns from multimedia databases that **store** and **manage** large collections of multimedia objects.
- The Multimedia data includes the following:
 - image data,
 - video data,
 - audio data,
 - sequence data,
 - hypertext data containing text.

- Multimedia data mining has a number of uses in today's society. An example of this would be the use of **traffic camera footage** to analyze **traffic flow**.
- Multimedia data mining can be defined as a process that finds patterns in various types of data, including images, audio, video, and animation.

Categories of Multimedia Data Mining

- Multimedia data mining is classified into two broad categories: **static** and **dynamic** media.



Text mining

- Text Mining also referred to as text data mining and it is used to find meaningful information from the unstructured texts that are from various sources.

Image mining

- Image mining systems can discover meaningful information or image patterns from a huge collection of images.

Video mining

- Video mining has the objective of describing interesting patterns from large amount of video data.
- Video has several type of multimedia data such as image, text, audio, visual etc.
- It is widely used in application such as entertainment, medicine, education, sports etc.

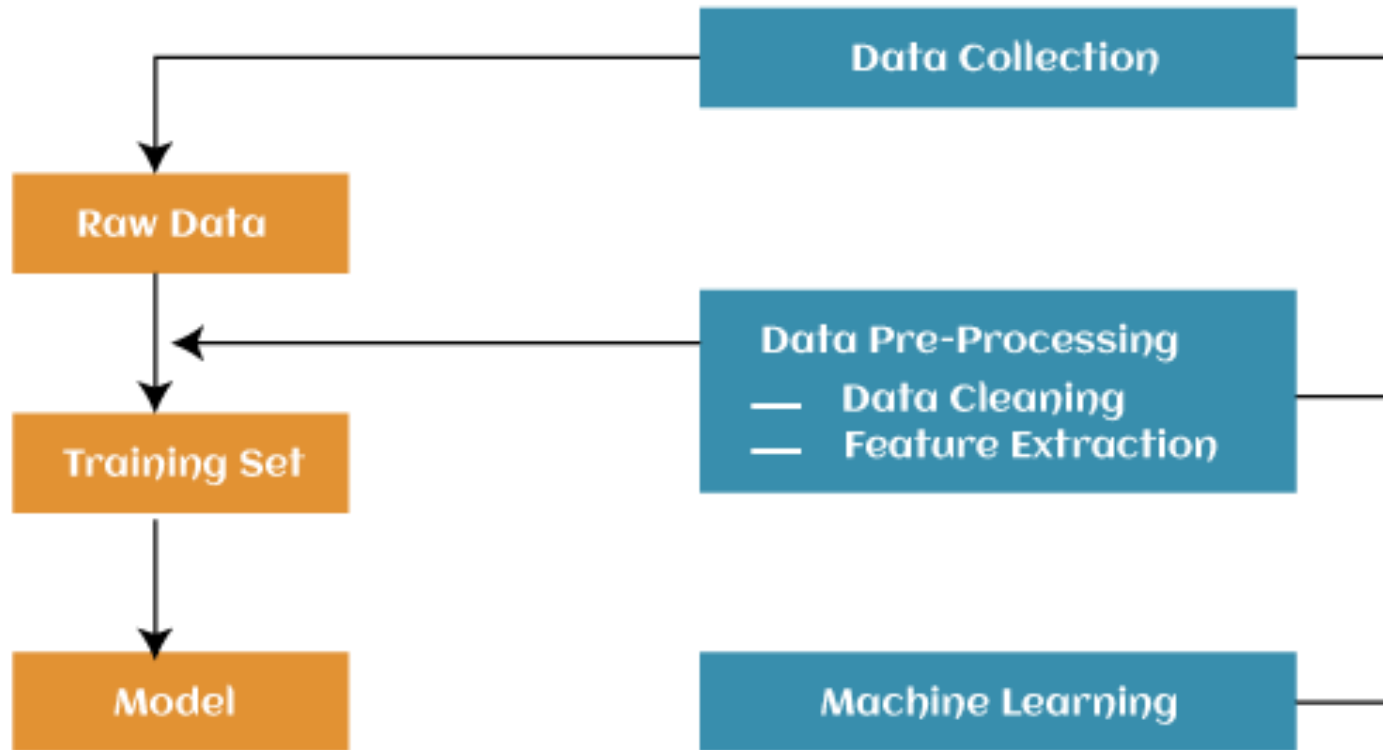
Audio mining

- Audio mining is the technique in which audio signals are automatically analyzed and searched. This technique is generally implemented in automatic speech recognition.

Applications of Multimedia Mining:

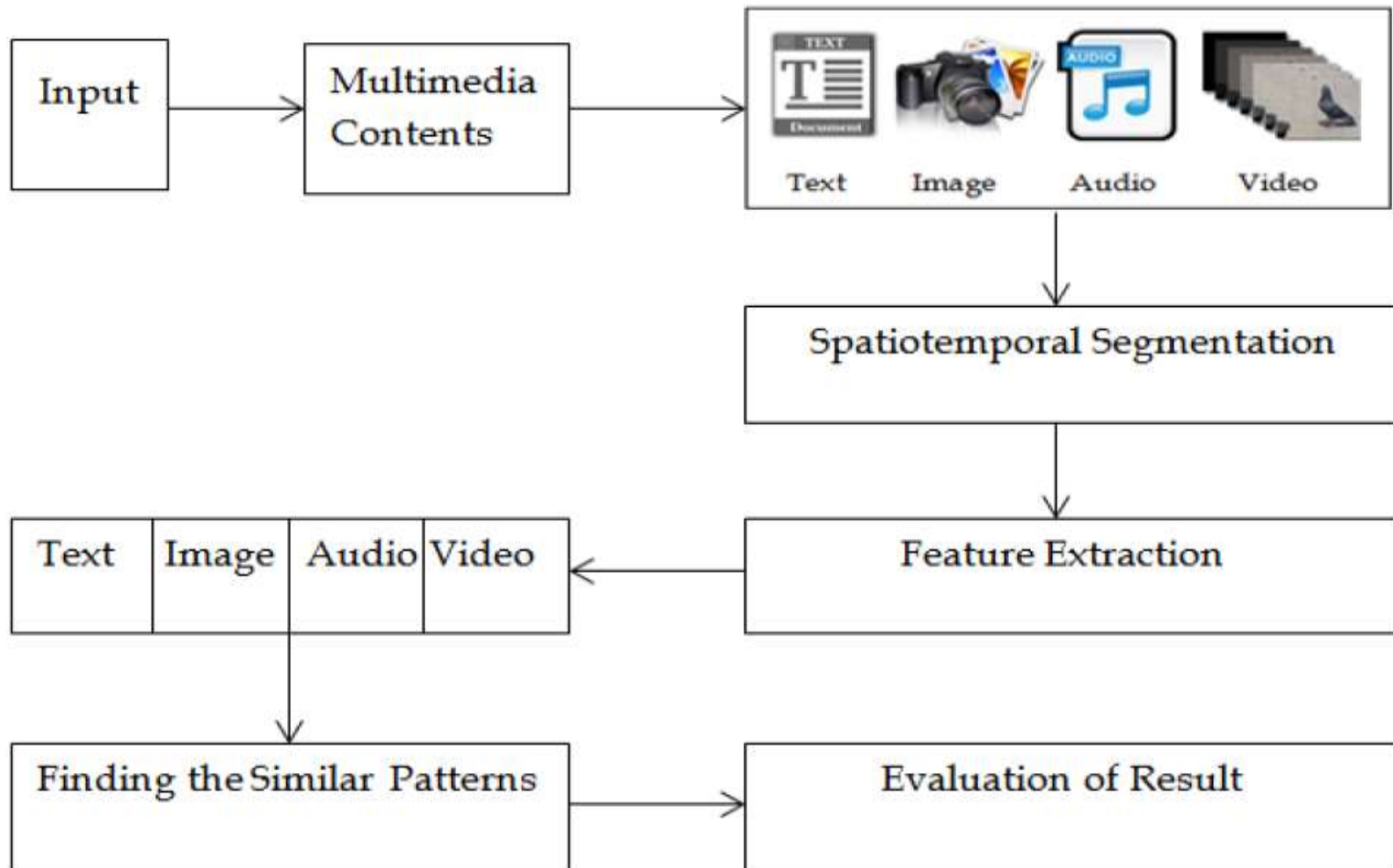
- Digital Library
- Traffic Video Sequences
- Medical Analysis
- Media Making and Broadcasting
- Surveillance system

Process of Multimedia Data Mining:



Multimedia Mining Process

Architecture for Multimedia Data Mining:



We considered two main families of multimedia retrieval systems, i.e. similarity search in multimedia data.

- ***Description-based retrieval system*** creates indices and object retrieval based on image descriptions, such as keywords, captions, size, and creation time.
- ***Content-based retrieval system*** supports image content retrieval, for example, color histogram, texture, shape, objects, and wavelet transform.

Models for Multimedia Mining

The data mining models / techniques that are applied to multimedia data are

- **classification,**
- **clustering,**
- **association rule mining**