Chapter 16 [1]

DATA MINING FROM MULTIMEDIA PATIENT RECORDS

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Abstract: Most current patient records mining applications (for classification, prediction, and for other data mining objectives) are based on a standard representation in the form of structured records with numerical and/or categorical values. The significant advances in pre-processing, pattern recognition, and interpretation of medical images, texts and signals can, and should, be coupled with other data mining and knowledge discovery techniques, to increase the benefits of mining multimedia patient records. This integration is expected to greatly improve the results of patient records mining specifically when applied to a comprehensive set of data that includes description of the patient history and status. To achieve these objectives, careful selection of appropriate techniques is required, especially in the preprocessing phase following a specified methodology. In this chapter, the importance of preprocessing and feature extraction phases in mining large collections of multimedia patient records is emphasized. Selected techniques with illustrative examples are given showing the applicability of rule-based methodologies in the preparation phases of a data mining process.

Key Words: data mining, multimedia patient records, data transformation, feature extraction, rule-based techniques.

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[1] Triantaphyllou, E. and G. Felici (Eds.), **Data Mining and Knowledge Discovery Approaches Based on Rule Induction Techniques**, Massive Computing Series, Springer, Heidelberg, Germany, pp. 551-595, 2006.

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