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Detecting Adverse Drug Reactions Using Utility Pattern Growth and Mining Infrequent Casual Association

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Abstract:
The most important issues in drug safety is Adverse Drug Reaction (ADR). Many adverse drug reactions are not discovered during less pre marketing clinical trials. It is observed that the usage of drug after long term post marketing surveillance of drug. There are many adverse events that is used in the development of statistical in the detection of ADRs. In this proposed system an interactive system platform is introduced for detecting ADRs. An ADR data warehouse and innovative data mining techniques are integrated, the proposed system not only supports OLAP style multidimensional analysis of ADRs, it is also used in the discovery of associations between drugs, called a drug ADR association rule.

Key words: Adverse Drug Reaction, OLAP, Demographic information

1. Introduction

In many real world applications, it is important to check where an event or event pattern causes certain outcomes with low probability. Preventing or correcting negative outcomes caused by their antecedents are be reduced by discovering causal relationships. Adverse Drug Reactions or Adverse Drug Events refer to unexpected, or potentially harmful reactions resulting from the use of given medications for patients. It also refers to the reaction arising due to the   normal doses of drugs for prevention of disease, diagnosis and treatment, Adverse drug reactions would waste a lot of unnecessary social resources, bringing different levels of psychological or physiological sufferings to patients and their relatives. This also increases the waste of medical resources, increase medical costs and decrease medical quality

2. Proposed System

Utility pattern growth a compact tree structure, called utility pattern tree, for discovering high utility item sets and maintaining important information related to utility patterns within databases are is proposed. Rather than simply mining the temporal association between drug symptom pairs, it attempts to mine the more difficult potential causal association rules (PCARs). The word "potential" is necessary because whether or not a mined association portrays a real causal relationship is uncertain. Confirming a causal relationship between a drug and an ADR is challenging because multiple unrelated causes may result in similar outcomes.

3. Modules

- Patient Management
- Medical Detail Management
- Fuzzy and Association Rule

3.1. Patient Management

An electronic health record (EHR) is a collection of electronic health information about individual patients. It is also a record in digital format that is capable of being shared in different health care settings. This sharing can also occur by the way by which the network is connected and the other information networks or exchanges. EHRs include a range of data that is, demographics, medical history and laboratory results.

3.2. Medicine Detail Management

This drugs and symptoms are used to form possible drug symptom pairs whose causal strengths will be assessed. A patient database normally has a subset of all drugs on the market and a subset of all symptoms, the Patient Drug Table and the Patient Symptom Table need to be searched to get the drugs and symptoms covered by the database.

3.3. Fuzzy and Association Rule
Temporal Association is that, it reflects the relationship between taking the drug and the appearance of a possible adverse event. The Abnormality in Laboratory Tests is a fuzzy variable that is also extracted from patient's laboratory test results. It describes the degree of the abnormality of a laboratory test.

4. Screen Shots
Snapshot is nothing but every moment of the application while running. It gives the clear elaborated of application.

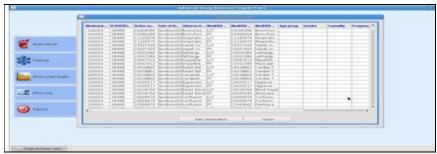*Figure.1 ADR Signal Pairs*

Figure.2 Selection Path

Figure.3 Pair Generation

Figure.4 Database Selection

Figure.5 Mining Infrequent Drug Reaction Signal

Figure.6 Drug Name Entering

Figure.7 Details Registering

Figure.8 Side effect Details

5. Conclusion

In this proposed system an interactive system platform is introduced for detecting ADRs. An ADR data warehouse and innovative data mining techniques are integrated, the proposed system not only supports OLAP style multidimensional analysis of ADRs, it is also used in the discovery of associations between drugs, called a drug ADR association rule.

6. References

1. Scott Oaks, Henry Wong, Mike Loukides (Editor), "Java Threads Java Series", O'Reilly & Associates.
2. Patrick Naughton, Herbert Schildt, "Java™ 2: The Complete Reference", Third Edition, Tata McGraw-Hill Publishing Company Limited.
3. David Flanagan, "Java in a Nutshell", 2nd Edition, May 1997.
4. Mark Grand and Jonathan Knudsen, "Java Fundamental Classes Reference", Tata McGraw-Hill Publishing Company Limited, 1st Edition, May 1997.
5. Dietel & Deitel, Java How to Program, BPB Publishers, New Delhi, 2000.
6. O'reilly, Java Swings, Tata McGraw Hill, Fifth Edition, 2002.
7. Broukshickle, Thinking in Java, Calgotia Publishers, New Delhi, 2001
8. David Flanagan, "Java in a Nutshell", 2nd Edition, May 1997.Elias M awar, "System Analysis and Design", Second Edition Galgotia publication 1996.