Drug–drug interactions: A Data Mining Approach

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Abstract

Drug–drug interaction is one of the important problems of Adverse Drug Reaction (ADR). This presentation describes a data mining approach to this problem developed at the University of Ballarat. This approach is based on drug–reaction relationships represented in the form of a vector of weights; each vector related to a particular drug can be considered as a pattern in causing adverse drug reactions. Optimal patterns for drugs are determined as a solution to some global optimization problem. Although this approach can be used for solving many ADR problems, we concentrate only on drug–drug interactions. The numerical implementations are carried out on different classes of reactions from the Australian Adverse Drug Reaction Advisory Committee (ADRAC) database. The results obtained extend our understanding of the drug–drug interaction from a data mining point of view.