Abstract

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Enhancing Visualization of Multidimensional Data by Ordering Parallel Coordinates Axes

Abstract—Every year business is overwhelmed by the quantity and variety of data. Visualization of Multi-dimensional data is counter-intuitive using conventional graphs. Parallel coordinates are proposed as an alternative to explore multivariate data more effectively. However, it is difficult to extract relevant information through the parallel coordinates when the data are Multi-dimensional with thousands of lines overlapping. The order of the axes determines the perception of information on parallel coordinates. This paper proposes three new techniques in order to arrange the axes in the most significant relation between the datasets. The datasets used in this paper, for Egyptian patients, with many external factors and medical tests. These factors were collected by a questionnaire sheet, made by medical researchers. The first Technique calculates the correlation between all features and the age of the patient when they get diabetes disease. The second technique is based on merging different features together and arranging the coordinates based on the correlations values. The Third Technique calculates the entropy value for each feature and then arrange the parallel coordinates in descending order based on the positive negative values. Finally based on the result graphs, we conclude that the second method was more readable and valuable than the other two methods.