Swarm Behaviour for Visual Data Mining

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Abstract
The increasing complexity of many data analysis procedures makes it really difficult for the user to extract useful information out of the results given by the various techniques. Information visualization and visual data mining can help to deal with the flood of information. Visual data mining on heterogeneous, imprecise and incomplete information systems need different representations according to human perception. The advantage of visual data exploration is that the user is directly involved in the data mining process. For example, it should allow the user to navigate inside the data, to interact with objects, etc., to be able to create living experience and to see the whole world or concentrate on specific details. In this contribution we explore a visualization technique based on techniques borrowed from swarm behaviour, particularly PSO (Particle Swarm Optimization). It is able to visualize multidimensional data, uses both standard 2D/3D and dense pixel displays and is based on different interaction/distortion techniques, such as projection, filtering and zooming.