

## Environment for Developing KDD-Applications Supported by Index-Structures

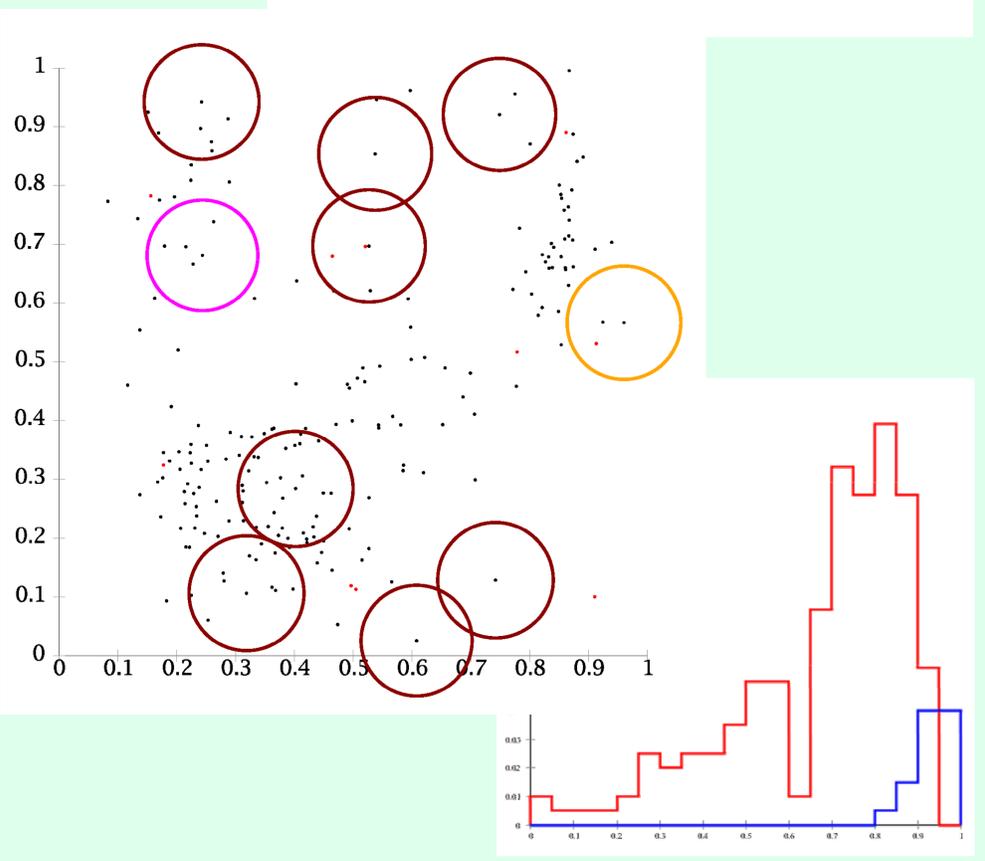
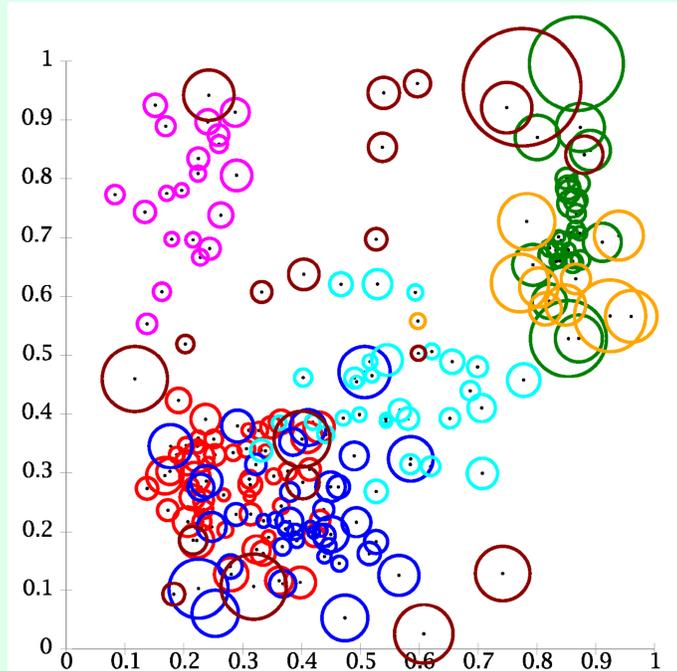
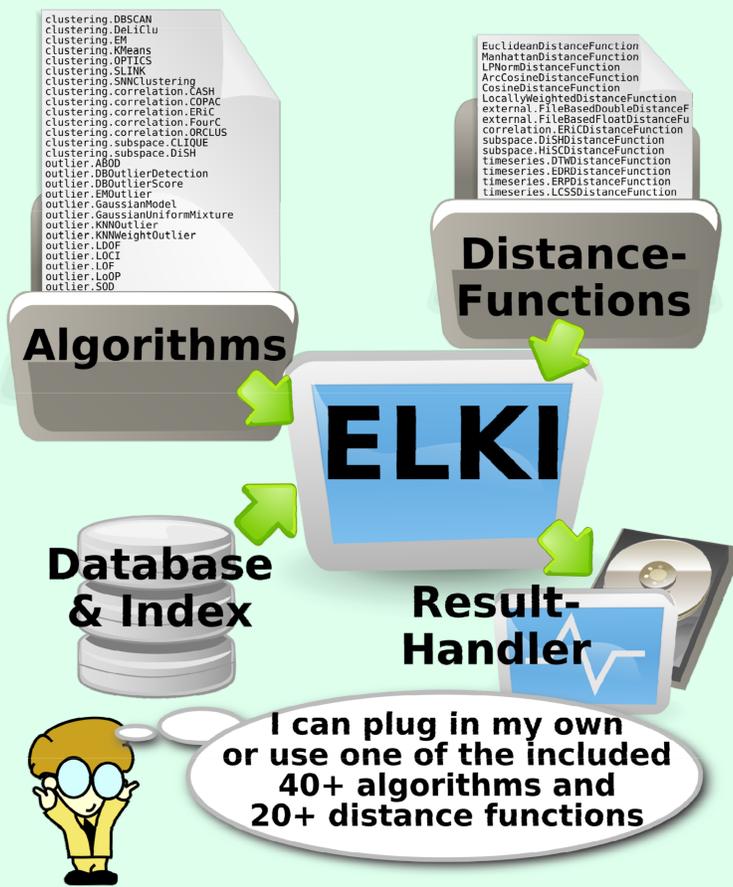
### Motivation:

In the software system ELKI, we facilitate the use of a wide range of different algorithms along with a wide choice of distance measures and different possibilities of visualization. Especially for outlier detection methods, the used distance function may have considerable impact on certain methods. In other outlier detection methods, the distance function may be implicitly defined by the algorithm. Different outlier detection models, however, pursue a different intuition of what constitutes an outlier anyway. Hence we provide a visualization to easily compare the outlier scores annotated by different algorithms to the same object.

### Interpreting Outlier Scores:

Interpreting the meaning of the outlier score provided by some outlier method is a non trivial problem as the scores differ widely between different methods or different data sets or even different regions of the same data set. Often the decision whether or not a data point actually is an outlier is not easy.

In ELKI 0.3, the contrast of outlier scores can be visualized in a histogram and in a bubble-plot, where the outlier scores are scaled to a suitable radius of a bubble, where a large bubble signals a high degree of outlierness. For this end, a range of different (trivial and non-trivial) scaling methods is available.



### Flexible Framework:

As a framework, ELKI is flexible in a sense, that it allows to read arbitrary data types (given a suitable parser for your data file or adapter for your database), and that it supports the use of any distance or similarity measure appropriate for the given data type. Usually, an algorithm needs to be provided with a distance function of some sort. Thus, distance functions connect arbitrary data types to arbitrary algorithms.

### Availability:

This work is continued – find the source-code and binaries, documentation, and bug-reports via:

<http://www.dbs.ifi.lmu.de/research/KDD/ELKI/>