

EXPLORATION OF BIOMEDICAL DATA WITH SOME TECHNIQUES OF MACHINE LEARNING

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The purpose of the data mining is to discover new, and potentially useful patterns in large, multidimensional data sets. The term pattern includes various types of regularities observed in data such as clusters or dependencies between features of selected objects (patients). Exploratory analysis may precede the stage of building a model of the investigated phenomenon.

As a part of the exploratory analysis, various methods of on computational techniques associated with the so-called machine learning are developed and applied. These techniques have originated, among others, from the methods of pattern recognition and neural networks. One of the currently developed methods of exploratory analysis is based on the minimization of convex and piecewise linear (CPL) criterion functions.

The proposed subject of the doctoral thesis would include the development and application of new CPL machine learning techniques to the current research areas of biomedical engineering based on large experimental data sets. The analysis of genetic data sets could be of particular interest to the proposed research.

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