Application of the clustering procedures is machine learning

Doctoral School: Doctoral School of Computer Science
Institute: University of Szeged
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Topic Description:
Clustering is a part of the supervisor–free machine learning method. During the procedure the original database is divided into smaller clusters. It is well known if our aim is to carry out a supervised learning procedure, the running time of this procedure usually increases exponentially with the size of the database. Hence clustering can be a useful tool here. We can summarized the principle like so: divide and conquer. Fortunately all the elements of one cluster belongs to one class, i.e. the elements of these clusters have already been learned.

Task to be valued:
1. Developing the kind of clustering algorithms that handles the machine learning tasks.  
2. Developing clustering algorithms where the member of the clusters is automatically determined
3. Studying fuzzy c-means algorithms and developing new variants  
4. Coupling fuzzy regression tree to a fuzzy clustering algorithm
5. Coupling a time series analysis to a clustering algorithm.

Bibliography: Babuska: Fuzzy modeling for control; Baldwin: Time series modeling; Fridman: Multivariate regression splines

Admissible number of students: 1
Deadline for applications: 2016-09-30

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