

PhD Thesis Subject

Machine Learning, Data Mining and Constraint Programming

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Machine learning and constraint programming are two important fields in artificial intelligence. Constraint programming offers a declarative and efficient paradigm to solve constraint satisfaction problems or constraint optimization problems. Machine learning and data mining problems are usually modeled as optimization problems or enumeration problems. Solving machine learning and data mining problems using constraint programming has recently interested both communities [4,6,1].

In this thesis, we are interested in developing declarative approaches using constraint programming for modeling and solving machine learning and data mining problems with structured data. More precisely, the data is not only defined by attributes or a distance measure, but also related by relations that define structures on data, as for instance graphs. One interest of a declarative approach is that the semantics can be integrated, as for instance labels on links, individual properties of instances or properties between instances etc. This work is based on our competences developed in LIFO on distance based constrained clustering using constraint programming [2,3,5].

Interested candidates are invited to send a CV, a motivation letter, the graduate level transcripts of marks as well as the name of reference persons. The application must be done as soon as possible. The selected candidates will be invited to an interview.

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References

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