A Case-Based Reasoning Framework for Case Base Maintenance in Continuous Domains

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Abstract

Continuous domains are domains where cases are generated from a continuous data stream. In these domains, a lot of cases are continuously solved and learned by a CBR system. This means that many cases could be stored in the case library. Thus, the efficiency of the CBR system both in size and time could be deeply worsened. In this research work, a dynamic adaptive case library (DACL) is proposed. It is able to adapt itself to dynamic environments by means of a set of dynamic clusters of cases and a discriminant tree associated to each cluster. The prototype of a cluster is called a Meta-Case. The aim is to get an optimal and competent case library that works efficiently in a continuous domain. In this paper, the improvement of time efficiency in the retrieval step has been evaluated by means of testing several data bases. The result shows a good improvement using the proposed DACL approach.