CLONAL SELECTION IN ARTIFICIAL IMMUNE SYSTEM
FOR WEB CACHING

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ABSTRACT

Many research activities have been done on pre-fetching of web caching which predicts users' requests in future. Machine learning technique has been applied commonly in pre-fetching. AIS has been common in approaches such as pattern recognition, optimization and etc. However, the application of AIS in pre-fetching of Web caching is still a new and challenging experience. In this study, the applicable of clonal selection in AIS for Web caching is examined and the effectiveness is determined by comparing with conventional techniques. A clonal selection caching engine prototype is developed through extensive study on the clonal selection algorithm (CLONALG). In predicting user's requests using 3 days of training data, results have proven that clonal selection engine is consistently better than conventional techniques with average 5.87% of hit rate for clonal selection engine compares to average 4.81% of hit rate for conventional engine for 3 different days of requests. From the result, there is potential of applying AIS into Web caching, however, it is not yet a practical solution as it is not computational effective.
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