The effect of noise on RWTSAIRS classifier

Abstract

Artificial Immune Recognition System (AIRS) is an immune inspired classifier that competes with famous classifiers. One of the most important components of AIRS is resource competition. The goal of resource competition is the development of the fittest individuals. Resource competition phase removes weakest individuals and selects strongest (apparently better) individuals. However, with this type of selection, there is a high selective pressure with a loss of diversity. It may generate premature memory cells and decrease the accuracy of classifier. In a previous study, the Real World Tournament Selection (RWTS) method was incorporated into the resource competition phase of AIRS to prevent this problem. The new classifier, named RWTSAIRS, obtained higher accuracy than AIRS in standard datasets from UCI machine learning repository. Real-world data is not perfect and contains noise that may impact the models created from data and decision made based on data. In this study, the performance of RWTSAIRS is evaluated in noisy environments. For this purpose, class and attribute noise are injected into some datasets.

Keyword: Artificial Immune Recognition System (AIRS); Classifiers; Datasets.