Artificial immune recognition system with nonlinear resource allocation method and application to traditional Malay music genre classification

ABSTRACT

Artificial Immune Recognition System (AIRS) has shown an effective performance on several machine learning problems. In this study, the resource allocation method of AIRS was changed with a nonlinear method. This new algorithm, AIRS with nonlinear resource allocation method, was used as a classifier in Traditional Malay Music (TMM) genre classification. Music genre classification has a great important role in music information retrieval systems nowadays. The proposed system consists of three stages: feature extraction, feature selection and finally using proposed algorithm as a classifier. Based on results of conducted experiments, the obtained classification accuracy of proposed system is 88.6 % using 10 fold cross validation for TMM genre classification. The results also show that AIRS with nonlinear allocation method obtains maximum classification accuracy for TMM genre classification.

Keyword: Artificial immune system; AIRS; Music genre classification; Nonlinear resource allocation