Abstract

Data Mining is a powerful technology nowadays to discover and analyze large data sets. It has applications in various fields of Arts, Science and Engineering. One such field is Music. Music is a form of arts which comes under fine arts category. It may be melody or rhythmic. It is broadly categorized as western music and classical music. Carnatic music is a form of south Indian classical music which comprises of swarams (7 notes) to evolve music. This research work deals with automatic identification of Carnatic raga Swaram notes through Data Mining algorithms. The training sets considered for the work are Avarohanam notes of 72 melakartha raga and 212 Janya raga. C4. 5 decision tree algorithm, Random Tree and Rule Induction algorithm were utilized to classify the Melakartha raga and the Janya raga. However the Janya raga swaram notes were also investigated through the use of appropriate feature relevance algorithms namely Feature ranking, Correlation based Feature Selection (CFS) filtering, and Fast Correlation based Filter (FCBF) filtering. The Melakartha raga data set was accurately classified with 100% accuracy by all the aforementioned classification techniques while predictor attributes selected through feature ranking algorithm produced nearly 90% accurate classification with Rule Induction algorithm on the Janya raga data.
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Index Terms

Computer Science

Artificial Intelligence

Keywords

Carnatic raga swarams  Classification  Feature Selection  Rule Induction