

A PANORAMIC REVIEW ON MULTIMODAL FEATURE SELECTION THROUGH NATURE-INSPIRED ALGORITHMS

Varun Arora
Department of CSE and IT
Jaypee Institute of Information Technology, Noida

Parul Agarwal
Department of CSE and IT
Jaypee Institute of Information Technology, Noida

Feature selection is very important step for any machine learning algorithm. It ensures the availability of proper data to the classification algorithm. In the real world, data is associated with a large number of attributes. These attributes may be relevant or irrelevant for data classification, so it becomes important to select the important attributes that are required for any task. Feature selection is the problem of finding the most appropriate attributes from the attribute pool in any dataset. It is considered as a combinatorial optimization problem. Optimization problems are categorized as unimodal and multi-modal problems. Unimodal optimization problems have a unique solution while multimodal optimization problems have several solutions for the same objective function. For some real-world applications, multimodal optimization is required for determining the various subsets of features. To determine multiple solutions to feature selection, nature-inspired algorithms are employed. This paper comes up with a comprehensive survey of the usage of nature-inspired algorithms on multimodal feature selection problems. This will motivate researchers to develop algorithms for multimodal optimization problems.