A Hybrid Nature-Inspired Classification Technique for Medical Diagnosis

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Abstract

Early detection of heart disease is essential in medical system because heart disease is the major cause of decease both for men and women. For the medical diagnosis, numerous soft computing techniques are available like Ant Colony Optimization, Genetic Algorithm, Particle Swarm Optimization, Artificial Bee Colony, Firefly Algorithm, Cuckoo Search, Levy Flight etc. The combination of all these evolutionary techniques with the other techniques like artificial neural network, rough set, fuzzy logic and etc. are also possible. The proposed algorithm uses a rough set based attribute reduction with firefly-levy algorithm and the fuzzy logic system for heart disease detection. The combination of these techniques is used to handle the dataset with high dimension and uncertainties. The attribute reduction method is used with the firefly-levy flight algorithm. This will reduce the burden and enhance the performance of classifier. The experiment results show a considerable supremacy of proposed algorithm when compared with other artificial intelligence techniques.

References
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Keywords

Feature Selection, Attribute Reduction, Rough Sets, Firefly Algorithm, Levy Flight Algorithm, Type-2 Fuzzy logic System