Guest Editorial Preface

Special Issue on Swarm Intelligence for Optimization Problems

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In the last two decades and so, nature-inspired algorithms (NIAs) have received much attention for dealing with several complex optimization problems. The recent developed NIAs are mainly inspired by the biological swarms, natural evolution, physical, chemical, and geographic processes that occur in nature. In the current existing literature, Artificial Bee Colony Algorithm, Firefly Algorithm, Social Spider Algorithm, Bat Algorithm, Strawberry Algorithm, Plant Propagation Algorithm, Seed Based Plant Propagation Algorithm, Elephant herding optimization (EHO), Bull optimization algorithm, Chemical Reaction Algorithm, Artificial Chemical Reaction Optimization Algorithm, Artificial Chemical Process Algorithm, Parliamentary optimization algorithm POA, Bumble bees mating optimization BBMO algorithm, Water Algorithm are much efficient and well-known meta-heuristics as compared classical genetic Algorithm, Simulated Annealing approaches. Most of the existing swarm intelligence-based algorithms follow the social and foraging principles of animals including the bird flocking, fish schooling, herds of land animals and colonies of ants to evolve their set of solutions called population. The family of algorithms belongs to the evolutionary computation, the subfield of artificial intelligence and applied to varieties of optimization and search problems. Each algorithm has some distinguishing features and strengths. Despite of getting popularity and their wide applications, nature-inspired algorithms are still facing problems and many challenges, still a lot of research efforts are required to address those issues and drawbacks. Currently, Hybridization has become mainstream that utilizes the key features of the existing evolutionary computation methods to deal with several real-world problems involving complexity, noisy environment, imprecision, uncertainty and vagueness.

Swarm intelligence for optimization problems is one of the special issues of International Journal of Swarm Intelligence Research (IJSIR), the peer-reviewed journal that reports the most recent developments and research efforts and developments regarding the nature-inspired computation methods with main focus on the state-of-the-art swarm intelligence based algorithms to cope with practical applications in engineering, business, commerce, etc. International Journal of Swarm Intelligence Research (IJSIR) publishes advanced, innovative and interdisciplinary research work with theoretical background, experimental and practical applications. In this special issue, our emphasize on to include recently developed advanced SI based methods and their hybrid architectures during the last couple of years that applied on various combinatorial, discrete, binary, constrained, Multi-objective, Multi-modal, dynamic optimization and real-world problems. This special issue includes high quality of research articles and hopefully will be useful contributions to the field evolutionary computation in future.

Finally, Dr.Wali Khan Mashwani, the Guest editor of the Swarm intelligence for optimization problems, special issue of the International Journal of Swarm Intelligence Research (IJSIR) wish to congratulate all those authors whose papers are accepted for publication in IJSIR.

Thanks are due to all reviewers and each member of the Editorial Board for their precious time and suggestions to improve the quality of the accepted papers in different round of evaluation process. We hope that this special issue on Swarm intelligence for optimization problems will serve the Engineering & Computer science community and it will play main role in presenting new ideas and research work in the future. Suggestions are welcome to improve further the present quality of this journal in the near future with hope to provide a good collection publications to authors, readers and subscribers of their research interest in the upcoming special issues of IJSIR.

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