

Evolutionary Computation Software Systems (EvoSoft'14) Chairs' Welcome

It is our great pleasure to welcome you to the GECCO Workshop on Evolutionary Computation Software Systems (EvoSoft).

The evolution of so many different metaheuristic optimization algorithms results from the fact that no single method can outperform all others for all possible problems. As postulated in the No Free Lunch Theorem, a general-purpose and universal optimization strategy is impossible. The only way how one strategy can outperform another is to be more specialized to the structure of the tackled problem. Consequently it always takes qualified algorithm experts to select and tune a metaheuristic algorithm for a specific application.

Choosing an appropriate method for a certain problem is not trivial, as problem characteristics may change remarkably for different instances and the performance of a metaheuristic may vary considerably for different parameter settings. Therefore the choice of a well suited method and according parameter values is a crucial aspect when applying metaheuristics.

Because of these issues it is not advisable to implement only one specific metaheuristic algorithm for a specific problem, as it cannot be determined in advance whether the chosen method is suitable for the tackled problem or not. Thus soundly engineered, reusable, flexible, user-friendly and interoperable software systems are required which offer a broad spectrum of different metaheuristic algorithms and support researchers in adapting and comparing these methods for different problems in order to bridge the gap between theoretical research and practical applications.

However, the development of such systems is both, time consuming and complex. Surprisingly the chance to join forces in the development of evolutionary computation software systems is not yet seized sufficiently within the evolutionary computation research community. Instead of reusing existing software and continuing their work on the shoulders of others, many researchers implement individual and highly specialized applications. Often these systems are not even publicly released which hinders comparability and replicability of research results.

The EvoSoft Workshop should highlight the importance of software engineering and software quality in the domain of evolutionary computation and should enable researchers to exchange their ideas on how to develop and apply generic and reusable software systems. It should provide a common platform to present open and freely available frameworks, to discuss novel approaches in their development, to identify cooperation potentials and synergies between research groups, and to define common standards.

Many thanks go to the authors, reviewers, and Program Committee members whose efforts make this workshop possible in the first place. We genuinely hope that you enjoy the EvoSoft Workshop and that it will boost joint efforts in the development of evolutionary computation software systems.

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