Welcome Message from Workshop Chairs

GECCO'12 – Second Workshop on Evolutionary Computation for the Automated Design of Algorithms (following the First Workshop on Evolutionary Computation for Designing Generic Algorithms).

One open question in the areas of optimization and machine learning is: given a new problem instance or dataset, which algorithm/heuristics should be used to solve the problem? In this direction, this workshop focuses on the issue of evolving general algorithms to solve classes of problem, rather than evolving solutions to single instances of a problem.

While Genetic Programming in the past has been employed to evolve functions, there is a serious short-fall when it comes to addressing the issue of evolving algorithms, for example, algorithms which can be applied to the well-known travelling salesman problem or the design of data mining algorithms. In order to bridge the gap between evolving functions (typically built from logical and arithmetic primitives), and evolving algorithms (typically built from additional control structures such as iteration) new techniques are needed to sample this more challenging search space. Another perspective is to view this approach as a hyper-heuristic, where a meta-heuristic operates indirectly on the space of potential solutions via the space of general algorithms. In other words we are (semi)-automatically generating new algorithms for the given domain. This workshop therefore sits at the interface of machine learning and hyper-heuristics.

Seven papers were submitted to the second edition of the workshop, and reviewed by at least two program committee members. Four papers of high quality in emerging research areas were accepted for inclusion in the workshop proceedings and presentation at the conference. Apart from the paper presentations, the workshop will also have a talk on the current state-of-the-art of the area, and a section for discussions on open issues.

We thank those who submitted papers to the workshop both last year (making it a successful workshop) and this year, hopefully making it another successful workshop. We encourage all to attend and contribute to this promising research area, and believe it will appeal in particular to those with an interest in genetic programming, machine learning and hyper-heuristics.

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