Editorial Introduction

Welcome to the second issue of *Evolutionary Computation*! The frantic activity involved in making the journal a reality is beginning to show signs of subsiding, but it is still well above my definition of "routine." As I am writing this, copies of the first issue are just beginning to appear in mailboxes around the world, and a few comments, suggestions, compliments, and criticisms are trickling in via e-mail. I encourage the readership to participate in the continuing evolution and refinement of the style, content, and focus of the journal. It has from its inception been a community effort, and I believe the journal will be successful only if it continues to reflect the needs and interests of the EC field.

Some of the immediate items on my list are to encourage short technical notes and book reviews in addition to the standard technical papers. It might also be nice to have short reviews of papers of interest appearing in related technical journals. Organizationally, I would like to refine the reviewing process to include "area editors" who are knowledgeable specialists in particular areas such as classifier systems and evolutionary programming.

It is also our collective responsibility to make the journal economically viable by encouraging individual and institutional subscriptions and technically strong via first-rate paper submissions. I'm happy to report that we appear to have taken a healthy first step in both areas. MIT Press is encouraged by the initial subscription activity, and I am pleased with the quality and quantity of the papers in the pipeline. But we need to continue to grow and expand on both fronts to achieve our goals for the journal.

In this issue, we have four interesting papers covering a variety of research areas. The first paper by Beasley et al. presents an interesting technique for finding multiple peaks (niches) on a fitness landscape. Rather than trying to locate them simultaneously in a single run, multiple runs are made in which information from previous runs is used to mask out the peaks already found. Although described and tested in conjunction with genetic algorithms (GAs), the technique is sufficiently general to be used with any stochastic search algorithm.

The second paper by Smith et al. focuses on the use of GAs to solve covering problems. Rather than searching for an optimal individual, one needs to evolve a cooperating population of individuals that can collectively classify events correctly and respond appropriately. The motivation for this work comes from simple computational models of the immune system; this paper illustrates how a simple GA can be used to evolve an effective set of antibodies (both generalists and specialists) for a given set of antigens.

The Dorigo paper is also concerned with covering problems but is motivated by the world of robotics. Here the goal is to evolve behavioral rules for a robot living in a two-dimensional world. In this case, Holland's classifier system is the starting point for Dorigo's ALECSYS system. Dorigo points out several operational difficulties with traditional classifier systems, then proposes a number of changes involving mutation, an energy function, and dynamic population size adjustment that significantly improve his system.

The final paper by Beyer describes recent extensions to the theory of evolution strategies (ESs). In the previous issue, the paper by Bäck and Schwefel gave a brief summary of the traditional theoretical results concerning convergence and convergence rates of ESs for several classes of functions. Beyer rederives these results in a more general form that allows him to extend the analysis to functions involving noise.

Subsequent issues in the first volume of the journal are already taking shape with papers involving the evolution of neural networks, genetic programming, and intriguing results involving the evolution of animation trajectories, to mention a few.

Enjoy!

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