

Bio-Inspired Solutions to Parallel Processing Problems

Preface

This section contains the papers presented at the Third Workshop on Bio-Inspired Solutions to Parallel Processing Problems (BioSP3) which is held in conjunction with IPDPS'2000 Cancun, Mexico, May 1-5, 2000. The workshop aimed to provide an opportunity for researchers to explore the connection between biology-inspired techniques and paradigms and the development of solutions to problems that arise in parallel processing.

It is well known that techniques inspired by biological phenomena can provide efficient solutions to a wide variety of problems in parallel computing and, more generally, in computer science. A vast literature exists on bio-inspired approaches to solving a rather impressive array on problems and, more recently, a number of studies have reported on the success of such techniques for solving difficult problems in all key areas of parallel processing and computer science. Rather remarkably, most of the biology-inspired techniques and paradigms are inherently parallel. Thus, solutions based on such methods can be conveniently implemented on parallel architectures.

In response to the call for papers for this workshop, we received a reasonably large number of submissions from all over the world, leading to a truly international competition. The papers underwent a thorough review process. The Workshop Chairs ranked the manuscripts on their original contributions and also carefully considered the suitability of the topic for the workshop. Thus were selected twelve manuscripts which went through a round of revisions, before they could be finally included in the workshop proceedings.

The collection of twelve papers that are presented here is a good sampler of the theoretical and practical aspects of the research in biology-inspired techniques and paradigms. The papers accepted span a variety of topics ranging from DNA computing, to agent-based techniques, to collective intelligence modeling, to genetic algorithms and neural nets, among others.

We take this opportunity to thank all the authors for their submissions and the program committee for making BioSP3 a success.

Albert Y. Zomaya
Fikret Ercal
Stephan Olariu