GECCO 2004 Workshop Proceedings

Preface

These proceedings are the record of written submissions to the Workshops held at the 2004 Genetic and Evolutionary Computation Conference (GECCO-2004) in Seattle, USA on June 26-27, 2004. Workshops provide an opportunity for researchers to meet and discuss topics with a selected focus in an informal and interactive setting. Workshops are an excellent forum for participants with common interests to explore new approaches, critique existing techniques and identify emerging areas of interest in genetic and evolutionary computation.

GECCO 2004 has hosted 15 workshops, some of which are becoming a traditional appointment at GECCO. As usual, room have been reserved for new workshops, to second and highlight the liveliness of the field. More than one hundred papers were presented at the workshops, most of which are enclosed in these Proceedings.

As in the previous editions, the workshop organizers were encouraged to make the workshops something different from regular conference tracks, by allowing room for invited speakers, poster presentation, panels and open discussion to encourage participative exploration of developments in key areas of Genetic and Evolutionary Computation. In particular, the decision to run workshops in parallel with tutorial sessions in 2004 offers conference participants two days, with well characterized activities with respect to the regular conference days, that allow participants not only to be inspired through the work of others, but also to be introduced and welcome to new topics within Genetic and Evolutionary

Computation, besides stimulating new ideas, identifying new research directions, and generating new research collaborations.

The GECCO Workshop program is made possible primarily by the efforts of the organizers and participants of the workshops. The burden of the design and organization of each workshop was carried entirely by its organizers. I would like to extend my thanks to all of the organizers for their work, dedication and efficiency in managing their event. I would also like to thank all of the participants for their contributions to the program and for their availability to make last minute amendmens to their work, to let the level of the editorial look of the Proceedings keep up with the high scientific level of the papers they submitted. Particular thanks must go to Riccardo Poli, General Chair of the Conference, for his continuous advice and support, to Gerardo Valencia for his timely and excellent work on the workshop web-pages within the GECCO website, and to Ann Stolberg for her assistance and guidance in a wide range of administrative work.

Stefano Cagnoni

Workshops and Organizers

- **Biological Applications of Genetic and Evolutionary Computation (BioGEC)**
  Jason H. Moore, Marylyn D. Ritchie

- **Evolutionary Computation Theory**
  Alden Wright, J. Neal Richter

- **Application of Hybrid Evolutionary Algorithms to Complex Optimization Problems**
  Ernesto Costa, Francisco B. Pereira, Günther Raidl

- **Grammatical Evolution (GEWS 2004)**
  Michael O'Neill, Conor Ryan

- **International Workshop on Learning Classifier Systems (IWLCS)**
  Wolfgang Stolzmann, Pier Luca Lanzi, Stewart W. Wilson

- **Modularity, regularity and hierarchy in open-ended evolutionary computation**
  Hod Lipson, Eric D. De Jong, John R. Koza

- **Military and Security Applications of Evolutionary Computation**
  Stephen C. Upton, David E. Goldberg

- **Undergraduate Student Workshop**
  Mark M. Meysenburg

- **Evolvability in Evolutionary Computation (EEC)**
  Hideaki Suzuki, Hidefumi Sawai

- **Graduate Student Workshop**
  Terry P. Riopka

- **Interactive Evolutionary Computing**
  Ian Parmee

- **Neutral Evolution in Evolutionary Computation**
  Tina Yu

- **Optimization by Building and Using Probabilistic Models (OBUPM 2004)**
  Martin Pelikan, Kumara Sastry, Dirk Thierens

- **Self-Organization on Representations for Genetic and Evolutionary Algorithms**
  Ivan Garibay, Greg Holifield, Annie S. Wu

- **Regeneration and Learning in Developmental Systems (WORLDS)**
  Julian F. Miller

- **Evolutionary Computation Theory**
  A. Wright, N. Richter